

Form 3160-3
(October 2024)

FORM APPROVED
OMB No. 1004-0220
Expires: October 31, 2027

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. NMLC060543
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. PETTY 31CD FED COM 006H
3a. Address 8115 PRESTON ROAD SUITE 800, DALLAS, TX 75225	3b. Phone No. (include area code) (972) 590-9900	9. API Well No. 30-015-58054
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWSW / 676 FSL / 1085 FWL / LAT 32.8726517 / LONG -103.8969942 At proposed prod. zone LOT 4 / 1250 FSL / 20 FWL / LAT 32.8741839 / LONG -103.9166993		10. Field and Pool, or Exploratory CEDAR LAKE/GLORIETA-YESO 11. Sec., T. R. M. or Blk. and Survey or Area SEC 32/T16S/R31E/NMP
14. Distance in miles and direction from nearest town or post office* 6 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) 676 feet		13. State NM
16. No of acres in lease 302.07		17. Spacing Unit dedicated to this well 302.07
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20 feet		20. BLM/BIA Bond No. in file FED: NMB001490
21. Elevations (Show whether DF, KDB, RT, GL., etc.) 3864 feet	22. Approximate date work will start* 03/01/2026	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) CORY WALK / Ph: (972) 590-9900	Date 05/06/2025
Title Permitting Agent		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) CHRISTOPHER WALLS / Ph: (575) 234-2234	Date 03/06/2026
Title Petroleum Engineer		
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)

<p>C-102</p> <p>Submit Electronically Via OCD Permitting</p>	<p>State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION</p>	<p>Revised July 9, 2024</p>
		<p>Submittal Type:</p> <p><input checked="" type="checkbox"/> Initial Submittal</p> <p><input type="checkbox"/> Amended Report</p> <p><input type="checkbox"/> As Drilled</p>

WELL LOCATION INFORMATION

API Number 30-015- 58054	Pool Code 96831	Pool Name CEDAR LAKE; GLORIETA-YESO
Property Code 339059	Property Name PETTY 31CD FED COM	Well Number 006H
OGRID No. 372210	Operator Name LONGFELLOW ENERGY, LP	Ground Level Elevation 3864.1
Surface Owner: <input checked="" type="checkbox"/> State <input type="checkbox"/> Fec <input type="checkbox"/> Tribal <input type="checkbox"/> Federal		Mineral Owner: <input checked="" type="checkbox"/> State <input type="checkbox"/> Fec <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
M	32	16 S	31 E		676 SOUTH	1085 WEST	32.8726517°N	103.8969942°W	EDDY

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
	31	16 S	31 E	4	1250 SOUTH	20 WEST	32.8741839°N	103.9166993°W	EDDY

Dedicated Acres 302.07	Infill or Defining Well DEFINING	Defining Well API 006H	Overlapping Spacing Unit (Y/N) N	Consolidation Code C
Order Numbers.			Well setbacks are under Common Ownership: <input type="checkbox"/> Yes <input type="checkbox"/> No	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
M	32	16 S	31 E		676 SOUTH	1085 WEST	32.8726517°N	103.8969942°W	EDDY

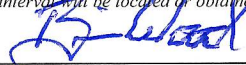
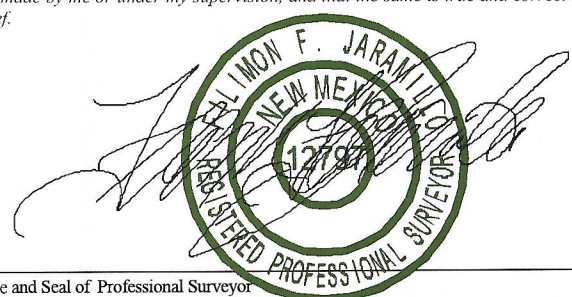
First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
P	31	16 S	31 E		1250 SOUTH	100 EAST	32.8742204°N	103.9008563°W	EDDY

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
	31	16 S	31 E	4	1250 SOUTH	100 WEST	32.8741845°N	103.9164387°W	EDDY

Unitized Area or Area of Uniform Interest	Spacing Unit Type <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Floor Elevation:
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<p>OPERATOR CERTIFICATIONS</p> <p><i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest run leased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order here to fore entered by the division.</i></p> <p><i>If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.</i></p> <p> 12-24-25</p> <p>Signature Date</p> <p>BRIAN WOOD</p> <p>Printed Name</p> <p>brian@permitswest.com</p> <p>Email Address</p>	<p>SURVEYOR CERTIFICATIONS</p> <p><i>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.</i></p> <div style="text-align: center;">  </div> <p>Signature and Seal of Professional Surveyor FILIMON F. JARAMILLO</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>Certificate Number PLS 12797</td> <td>Date of Survey APRIL 2, 2025</td> </tr> </table> <p style="text-align: right;">SURVEY NO. 10371A</p>	Certificate Number PLS 12797	Date of Survey APRIL 2, 2025
Certificate Number PLS 12797	Date of Survey APRIL 2, 2025		

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

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

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

PETTY 31CD FED COM 006H
EL. = 3864.1

GEODETIC COORDINATES

NAD 83 NMSP EAST
SURFACE LOCATION
676' FSL, 1085' FWL
N.=681481.19
E.=675301.24
LAT.=32.8726517°N
LONG.=103.8969942°W

LAST TAKE POINT
1250' FSL, 100' FWL
N.=682014.72
E.=669329.16
LAT.=32.8741845°N
LONG.=103.9164387°W

PPP3
1250' FSL, 2640' FEL
N.=682029.89
E.=671573.58
LAT.=32.8742016°N
LONG.=103.9091282°W

CORNER COORDINATES TABLE
NAD 83 NMSP EAST

A	N.=686042.98	E.=669215.61
B	N.=686058.88	E.=671548.64
C	N.=686076.85	E.=674187.91
D	N.=686099.49	E.=676835.89
E	N.=686112.32	E.=679471.91
F	N.=683403.67	E.=669224.51
G	N.=683438.58	E.=674205.82
H	N.=683475.46	E.=679485.80
I	N.=680764.37	E.=669233.40
J	N.=680780.07	E.=671581.31
K	N.=680798.07	E.=674219.68
L	N.=680816.12	E.=676859.22
M	N.=680834.18	E.=679498.71

KICK OFF POINT
676' FSL, 1085' FWL
N.=681481.19
E.=675301.24
LAT.=32.8726517°N
LONG.=103.8969942°W

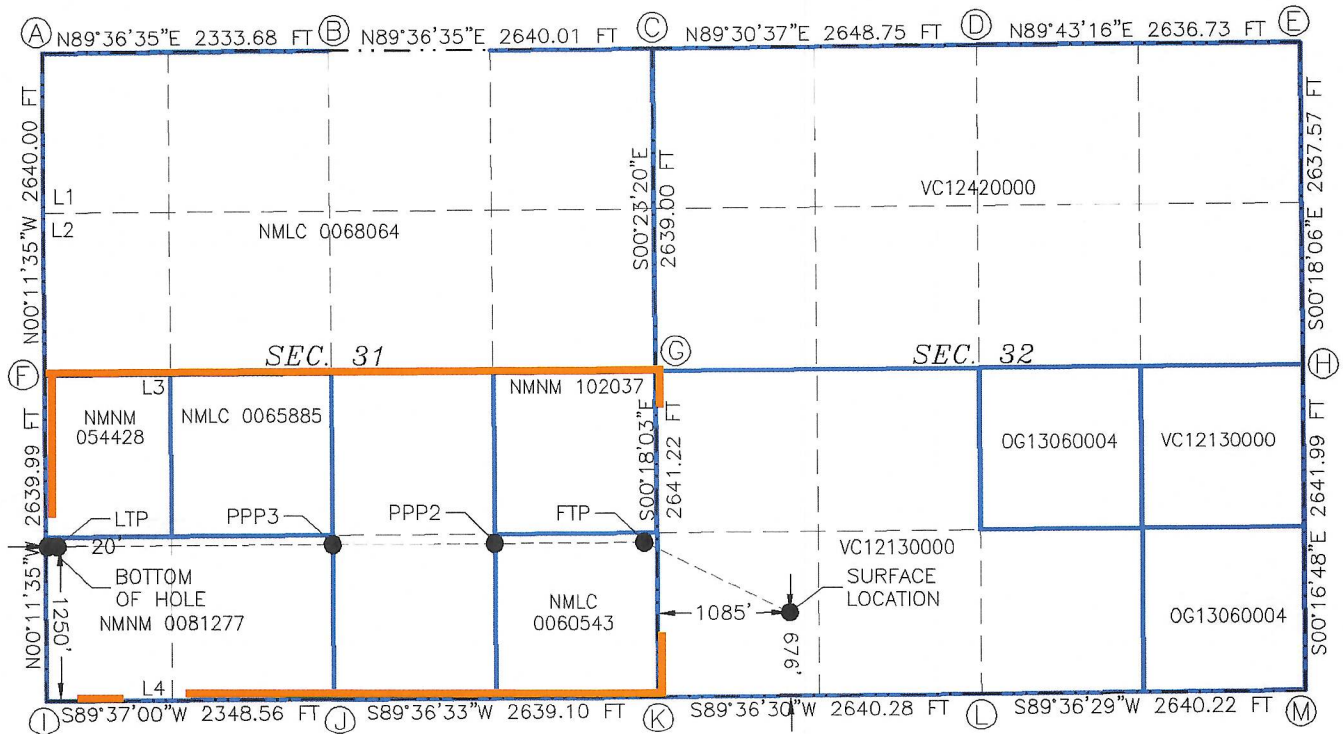
BOTTOM OF HOLE
1250' FSL, 20' FWL
N.=682014.18
E.=669249.18
LAT.=32.8741839°N
LONG.=103.9166993°W

FIRST TAKE POINT
1250' FSL, 100' FEL
N.=682047.06
E.=674113.15
LAT.=32.8742204°N
LONG.=103.9008563°W

PPP2
1250' FSL, 1321' FEL
N.=682038.81
E.=672892.86
LAT.=32.8742114°N
LONG.=103.9048310°W

LEGEND

- SECTION LINE
- - - QUARTER LINE
- LEASE LINE
- - - - - WELL PATH



State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: Longfellow Energy, LP **OGRID:** 372210 **Date:** 12-24-25

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Petty 31CD Fed Com 006H	30-015-	M-32-16S-31E	676 FSL & 1085 FWL	50	150	150
Petty 31CD Fed Com 007H	30-015-	M-32-16S-31E	656 FSL & 1086 FWL	50	150	150
Petty 31CD Fed Com 008H	30-015-	M-32-16S-31E	636 FSL & 1086 FWL	50	150	150
Petty 31CD Fed Com 009H	30-015-	M-32-16S-31E	616 FSL & 1087 FWL	50	150	150

IV. Central Delivery Point Name: Kinetik Gas Gathering, LLC (333008) in J-5-17s-31e [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Petty 31CD Fed Com 006H	30-015-	3-1-26	3-10-26	7-1-26	8-15-26	8-31-26
Petty 31CD Fed Com 007H	30-015-	3-11-26	3-22-26	8-16-26	10-1-26	10-15-26
Petty 31CD Fed Com 008H	30-015-	3-23-26	4-3-26	10-2-26	11-15-26	12-1-66
Petty 31CD Fed Com 009H	30-015-	4-4-26	6-14-25	11-16-26	1-2-27	1-15-27

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

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

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

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

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

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective M 15, 201

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

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

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

If Operator checks this box, Operator will select one of the following:

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

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

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

Section 4 - Notices

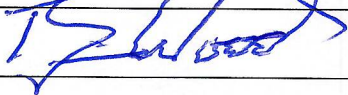
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

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

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

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

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

Signature:	
Printed Name:	Brian Wood
Title:	Consultant
E-mail Address:	brian@permitswest.com
Date:	12-24-25
Phone:	505 466-8120

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

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

**Attachment VI. Separation Equipment:**

Longfellow Energy (LFE) production facilities include separation equipment designed to efficiently separate gas from liquid phases to optimize gas capture based on projected and estimated volumes from the completion project. LFE will utilize flowback separation equipment and production separation equipment designed and built to industry specifications after the completion to optimize gas capture and send gas to sales or flare based on analytical composition. LFE operates facilities that are typically multi-well facilities. Production separation equipment is upgraded or installed before new wells are completed. This equipment is on-site and tied into sales gas lines prior to flowback.

Attachment VII. Operational Practices:***19.15.27.8 Subsection A: Venting and Flaring of Natural Gas***

Longfellow Energy (LFE) understands the requirements of NMAC 19.15.27.8 which states that the venting and flaring of natural gas during drilling, completion, or production operations that constitutes waste as defined in 19.15.2 are prohibited.

19.15.27.8 Subsection B: Venting and flaring during drilling operations

1. LFE shall capture or combust natural gas if technically feasible using best industry practices
2. A properly-sized flare stack shall be located at a minimum of 100 feet from the nearest surface hole location unless otherwise approved by the division.
3. In an emergency or malfunction, LFE may vent natural gas to avoid a risk of an immediate and substantial adverse impact on safety, public health, or the environment. LFE will report natural gas vented or flared during an emergency or malfunction to the NMOCD.

19.15.27.8 Subsection C: Venting and flaring during completion or recompletion operations

1. During initial flowback, LFE shall route flowback fluids into a completion or storage tank and, if technically feasible under the applicable well conditions, flare rather than vent and commence operation of a separator as soon as it is technically feasible for a separator to function
2. During separation flowback, LFE shall capture and route natural gas from the separation equipment:
 - a. to a gas flowline or collection system, reinject into the well, or use on-site as a fuel source or other purpose that a purchased fuel or raw material would serve; or
 - b. to a flare if routing the natural gas to a gas flowline or collection system, reinjecting it into the well, or using it on-site as a fuel source or other purpose that a purchased fuel or raw material would serve would pose a risk to safe operation or personnel safety.
3. If natural gas does not meet gathering pipeline quality specifications, LFE may flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner, provided that:

19.15.27.8 Subsection D: Venting and flaring during production operations

LFE shall not vent or flare natural gas except:

1. during an emergency or malfunction;
2. to unload or clean-up liquid holdup in a well to atmospheric pressure, provided
 - a. LFE does not vent after the well achieves a stabilized rate and pressure;
 - b. for liquids unloading by manual purging, LFE remains present on-site until the end of unloading or posts at the well site the contact information of the personnel conducting the liquids unloading operation and ensures that personnel remains within 30 minutes' drive time of the well being unloaded until the end of unloading, takes all reasonable actions to achieve a stabilized rate and pressure at the earliest practical time and takes reasonable actions to minimize venting to the maximum extent practicable;
 - c. during downhole well maintenance, only when LFE uses a workover rig, swabbing rig, coiled tubing unit or similar specialty equipment and minimizes the venting of natural gas to the extent that it does not pose a risk to safe operations and personnel safety
3. during the following activities unless prohibited by applicable state or federal law, rule, or regulation for the emission of hydrocarbons and volatile organic compounds:
 - a. gauging or sampling a storage tank or other low-pressure production vessel;
 - b. loading out liquids from a storage tank or other low-pressure production vessel to a transport vehicle;
 - c. repair and maintenance, including blowing down and depressurizing production equipment to perform repair and maintenance;
 - d. normal operation of a gas-activated pneumatic controller or pump;
 - e. normal operation of a storage tank or other low-pressure production vessel, but not including venting from a thief hatch that is not properly closed or maintained
 - f. normal operations of valves, flanges and connectors that is not the result of inadequate equipment design or maintenance;
 - g. a packer leakage test;
 - h. a production test lasting less than 24 hours unless the division requires or approves a longer test period;
 - i. when natural gas does not meet the gathering pipeline specifications, provided LFE analyzes natural gas samples twice per week to determine whether the specifications have been achieved, routes the natural gas into a gathering pipeline as soon as the pipeline specifications are met and provides the pipeline specifications and natural gas analyses to the division upon request; or
 - j. Commissioning of pipelines, equipment, or facilities only for as long as necessary to purge introduced impurities from the pipeline or equipment.

19.15.27.8 Subsection E: Performance Standards

1. LFE designed completion and production separation equipment and storage tanks for maximum anticipated throughput and pressure to minimize waste.
2. LFE permanent storage tanks associated with production operations that is routed to a flare or control device are equipped with automatic gauging system that reduces the venting of natural gas.
3. LFE shall combust natural gas in a flare stack that is properly sized and designed to ensure proper combustion efficiency.
 - a. The flare stack shall be equipped with an automatic ignitor or continuous pilot.

4. The flare stack shall be securely anchored and located at least 100 feet from the well and storage tanks unless otherwise approved by the division.
5. LFE shall conduct an AVO inspection weekly to confirm that all production equipment is operating properly and there are no leaks or releases except as allowed in Subsection D of 19.15.27.8 NMAC.
 - a. During an AVO inspection the LFE shall inspect all components, including flare stacks, thief hatches, closed vent systems, pumps, compressors, pressure relief devices, valves, lines, flanges, connectors, and associated piping to identify defects, leaks, and releases by:
 - i. a comprehensive external visual inspection;
 - ii. listening for pressure and liquid leaks; and
 - iii. smelling for unusual and strong odors.
 - b. LFE shall make and keep a record of an AVO inspection for not less than five years and make such record available for inspection by the division upon request.
6. facilities shall be designed to minimize waste;
7. LFE has an obligation to minimize waste and shall resolve emergencies as quickly and safely as is feasible.

19.15.27.8 Subsection F: Measurement or estimation of vented and flared natural gas

1. LFE shall measure or estimate the volume of natural gas that it vents, flares, or beneficially uses during drilling, completion, and production operations regardless of the reason or authorization for such venting or flaring.
2. LFE shall install equipment to measure the volume of natural gas flared from existing process piping or a flowline piped from equipment such as high pressure separators, heater treaters, or vapor recovery units associated with a well or facility associated with a well authorized by the APD

Attachment VIII. Best Management Practices:

Longfellow Energy (LFE) utilizes the following best management practices to minimize venting during active and planned maintenance

1. LFE has a closed vent capture system to route emissions from the heater treater, tanks and vapor to the VRU with a flare for backup. The system is designed such that if the VRU is taken out of service for any reason, the vapors will be routed to the flare for combustion.
2. LFE will isolate and attempt to route all vapors to the VRU or flare prior to opening any lines for maintenance to minimize venting from the equipment when technically feasible
3. LFE will shut in wells in the event of a takeaway disruption, emergency situations, or other operations where venting or flaring may occur due to equipment failures.
4. Lease operators will be visiting the location daily to check and maintain all equipment ensuring all scrubbers, flame arrestors, and the flare ignitor is functioning properly.



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

Drilling Plan Data Report

03/06/2026

APD ID: 10400104462

Submission Date: 05/06/2025

Highlighted data reflects the most recent changes

Operator Name: LONGFELLOW ENERGY LP

Well Name: PETTY 31CD FED COM

Well Number: 006H

Well Type: OIL WELL

Well Work Type: Drill

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
17599353	QUATERNARY	3864	0	0	OTHER : Caliche	USEABLE WATER	N
17599354	RUSTLER ANHYDRITE	3465	399	399	ANHYDRITE	NONE	N
17599364	TOP SALT	3240	624	624	SALT	NONE	N
17599356	BASE OF SALT	2240	1624	1624	SALT	NONE	N
17599357	YATES	2160	1704	1704	SANDSTONE	NATURAL GAS, OIL	N
17599358	SEVEN RIVERS	1890	1974	1974	GYPSUM	NATURAL GAS, OIL	N
17599359	QUEEN	1363	2501	2517	SANDSTONE	NATURAL GAS, OIL	N
17599360	GRAYBURG	967	2897	2924	DOLOMITE	NATURAL GAS, OIL	N
17599351	SAN ANDRES	644	3220	3256	DOLOMITE	NATURAL GAS, OIL	N
17599352	GLORIETA	-792	4656	4818	DOLOMITE	NATURAL GAS, OIL	N
17599361	PADDOCK	-824	4688	4868	DOLOMITE, OTHER : Yeso dolomite	NATURAL GAS, OIL	N
17599362	PADDOCK	-1081	4945	5521	DOLOMITE, OTHER : Yeso dolomite	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 6000

Equipment: A 5000-psi BOP stack (rated to 6000') consisting of annular preventer and double (blind and pipe) ram will be used below surface casing to TD. 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.

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 spud.

Operator Name: LONGFELLOW ENERGY LP

Well Name: PETTY 31CD FED COM

Well Number: 006H

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250-psi low and 3000-psi high per 43 CFR 3172 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.

Choke Diagram Attachment:

Petty_6H_Choke_Rev2_20251226104816.pdf

BOP Diagram Attachment:

Petty_6H_BOP_Rev2_20251226104824.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	500	0	500	3864	3364	500	J-55	54.5	LT&C	1.125	1.125	DRY	1.8	DRY	1.8
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3950	0	3896	3864	-32	3950	J-55	40	LT&C	1.125	1.125	DRY	1.8	DRY	1.8
3	PRODUCTION	8.75	7.0	NEW	API	N	0	5362	0	4925	3857	-1061	5362	L-80	32	BUTT	1.125	1.125	DRY	1.8	DRY	1.8
4	PRODUCTION	8.75	5.5	NEW	API	N	5362	10386	4925	4925	-1061	-1061	5024	L-80	20	BUTT	1.125	1.125	DRY	1.8	DRY	1.8

Casing Attachments

Casing ID: 1 **String** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Petty_6H_Casing_Design_Rev3_20260227082003.pdf

Operator Name: LONGFELLOW ENERGY LP

Well Name: PETTY 31CD FED COM

Well Number: 006H

Casing Attachments

Casing ID: 2 **String** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Petty_6H_Casing_Design_Rev3_20260227082043.pdf

Casing ID: 3 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Petty_6H_Casing_Design_Rev3_20260227082116.pdf

Casing ID: 4 **String** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Petty_6H_Casing_Design_Rev3_20260227082205.pdf

Section 4 - Cement

Operator Name: LONGFELLOW ENERGY LP

Well Name: PETTY 31CD FED COM

Well Number: 006H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	500	390	1.72	13.5	670	100	Class C	None
SURFACE	Tail		0	500	160	1.33	14.8	212	100	Class C	None
INTERMEDIATE	Lead	2850	0	2850	1530	1.83	12.4	2799	100	35/65 Poz C	None
INTERMEDIATE	Tail		2850	3950	590	1.19	15.6	702	100	Class C	None
PRODUCTION	Lead		0	5362	470	2.08	12.2	977	10	25/75 Poz C	None
PRODUCTION	Tail		5362	10386	1010	1.4	14.8	1414	10	Class C	None

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: 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	500	OTHER : Fresh water/Gel	8.4	9							
500	3950	OTHER : Salt Saturated	8.8	9.2							
3950	10386	OTHER : Cut Brine	8.8	9.2							

Operator Name: LONGFELLOW ENERGY LP

Well Name: PETTY 31CD FED COM

Well Number: 006H

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. A wireline MWD GR log will be run from the base of the surface casing to TD.

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

MUD LOG/GEOLOGICAL LITHOLOGY LOG, GAMMA RAY LOG,

Coring operation description for the well:

No core or drill stem test is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 2175

Anticipated Surface Pressure: 1087

Anticipated Bottom Hole Temperature(F): 90

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations

Petty_PadD_H2S_Rev2_20251226105550.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Petty_6H_Directional_Plan_Rev3_20260227083140.pdf

Other proposed operations facets description:

DV tool and external casing packer will be set at 2850' (above the Grayburg). Well will be drilled toe up. AFMSS does not allow 5.5" TVD depth to be less than 5.5" top.

Other proposed operations facets attachment:

Coflex_Certs_20251003084039.pdf

Petty_6H_Anticollision_Rev2_20251226105718.pdf

Petty_PadD_WMP_Rev_20251226105736.pdf

Petty_6H_Drill_Plan_Rev4_20260227082921.pdf

Other Variance request(s)?: N

Other Variance attachment:

Operator Name: LONGFELLOW ENERGY LP

Well Name: PETTY 31CD FED COM

Well Number: 006H



Company: Longfellow Energy
 Project: Eddy Co., NM (Nad-83)
 Site: PETTY FED COM 31 CD
 Well: 006H
 Wellbore: OH
 Rig:
 Design: PLAN 2 / 16:51, October 28 2025



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
006H SHL: 676' FSL, 1085' FWL	0.00	0.00	0.00	681481.19	675301.24	32.872652	-103.896994
006H BHL: 1250' FSL, 20' FWL	4865.00	532.99	-6052.06	682014.18	669249.18	32.874184	-103.916699
006H LTP: 1250' FSL, 100' FWL	4866.32	533.53	-5972.08	682014.72	669329.16	32.874184	-103.916439
006H PPP3: 1250' FSL, 2640' FEL	4903.23	548.70	-3727.66	682029.89	671573.58	32.874202	-103.909128
006H PPP2: 1250' FSL, 1321' FEL	4924.93	557.62	-2408.38	682038.81	672892.86	32.874211	-103.904831
006H FTP: 1250' FSL, 100' FEL	4945.00	565.87	-1188.09	682047.06	674113.15	32.874220	-103.900856

WELL DETAILS: 006H

RKB = 20' @ 3884.10usft
 Ground Elevation: 3864.10

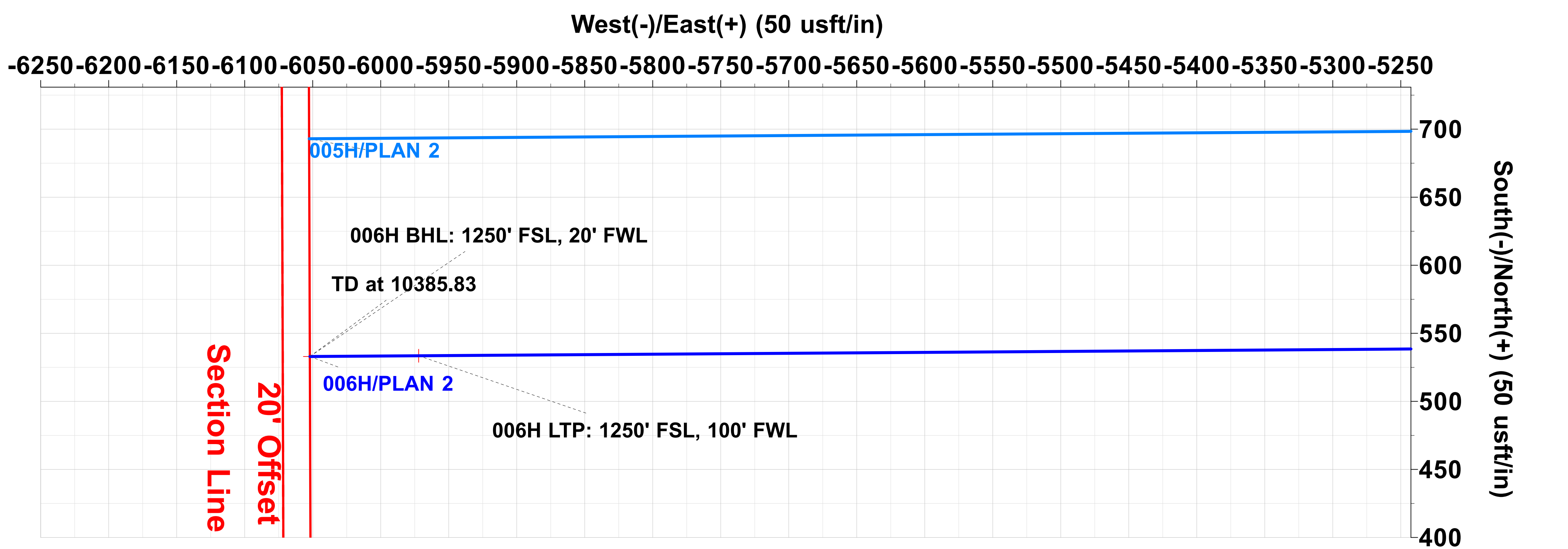
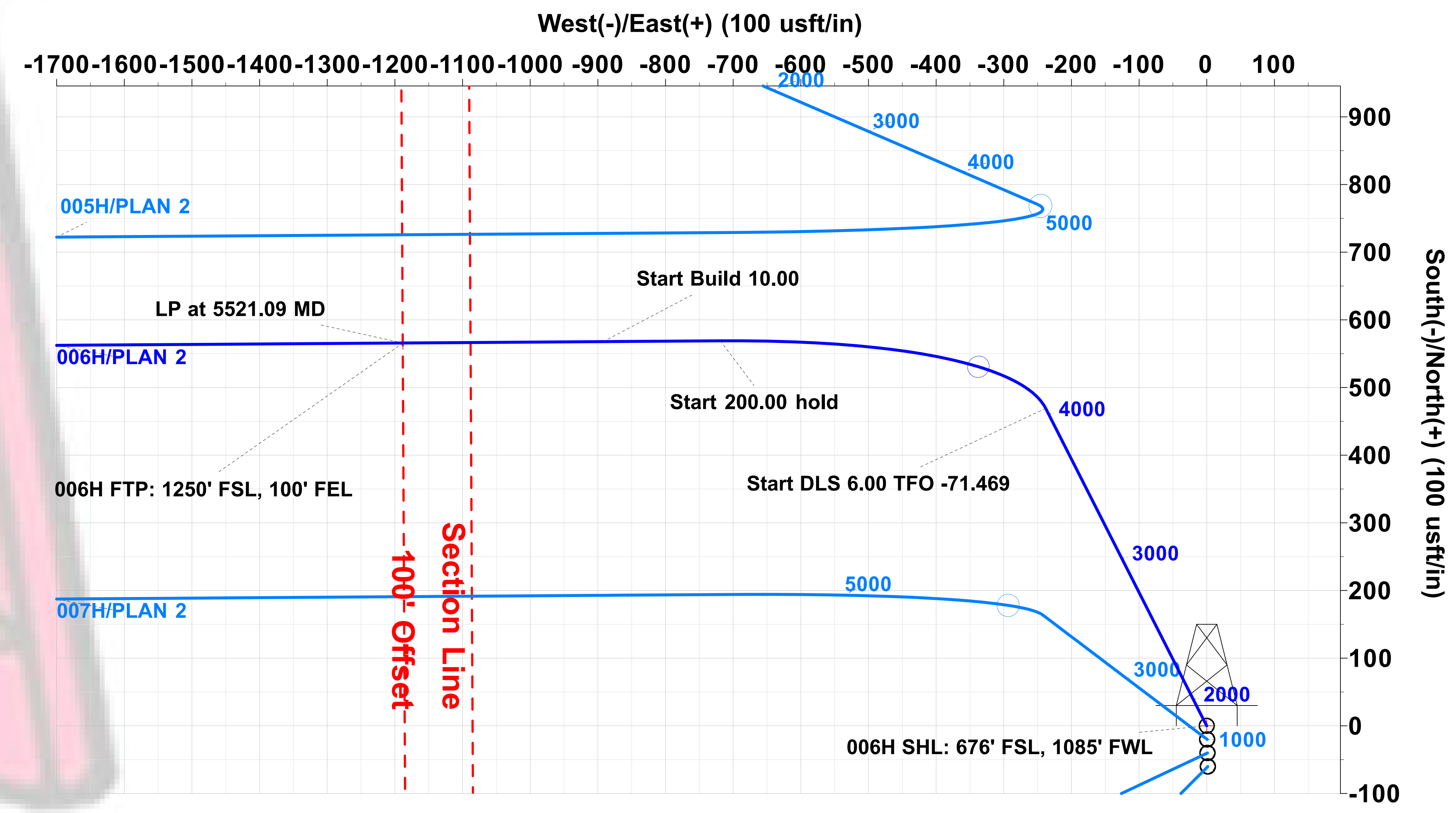
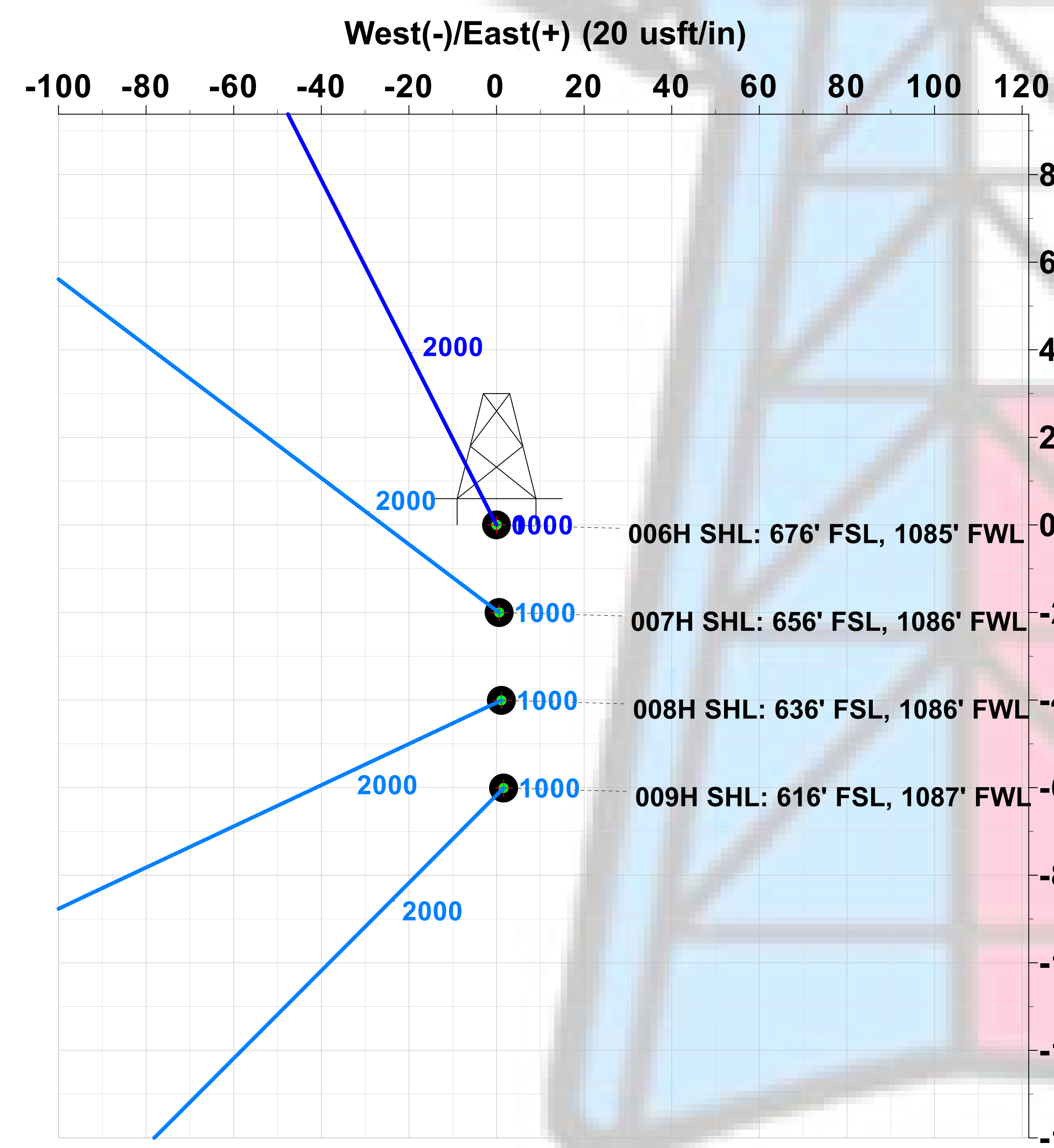
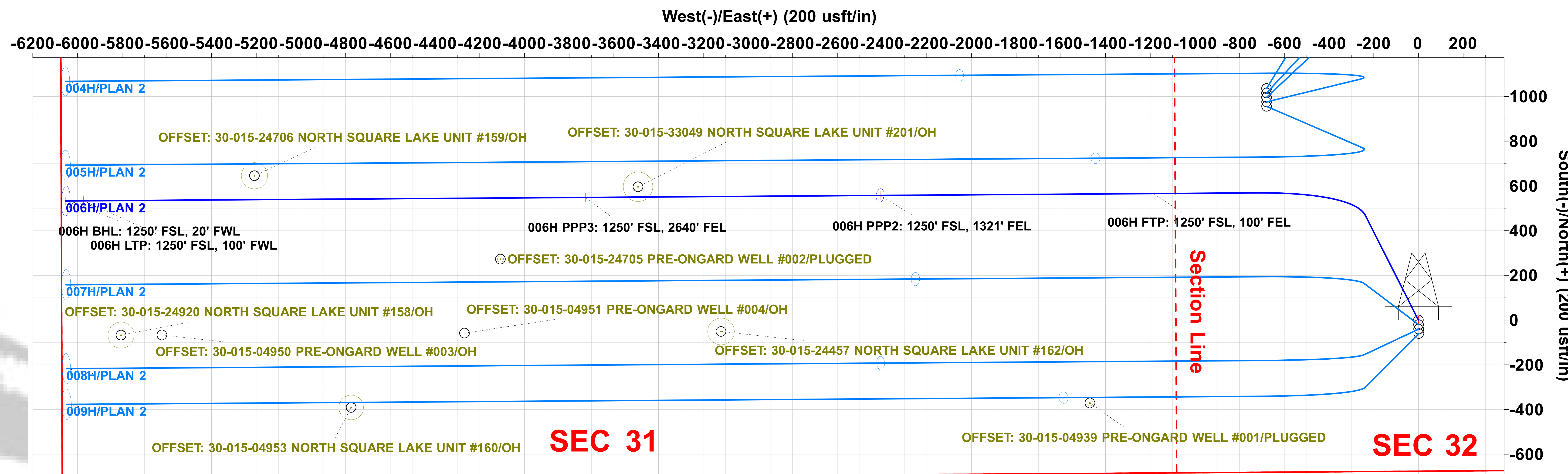
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	681481.19	675301.24	32.872652	-103.896994

SECTION DETAILS

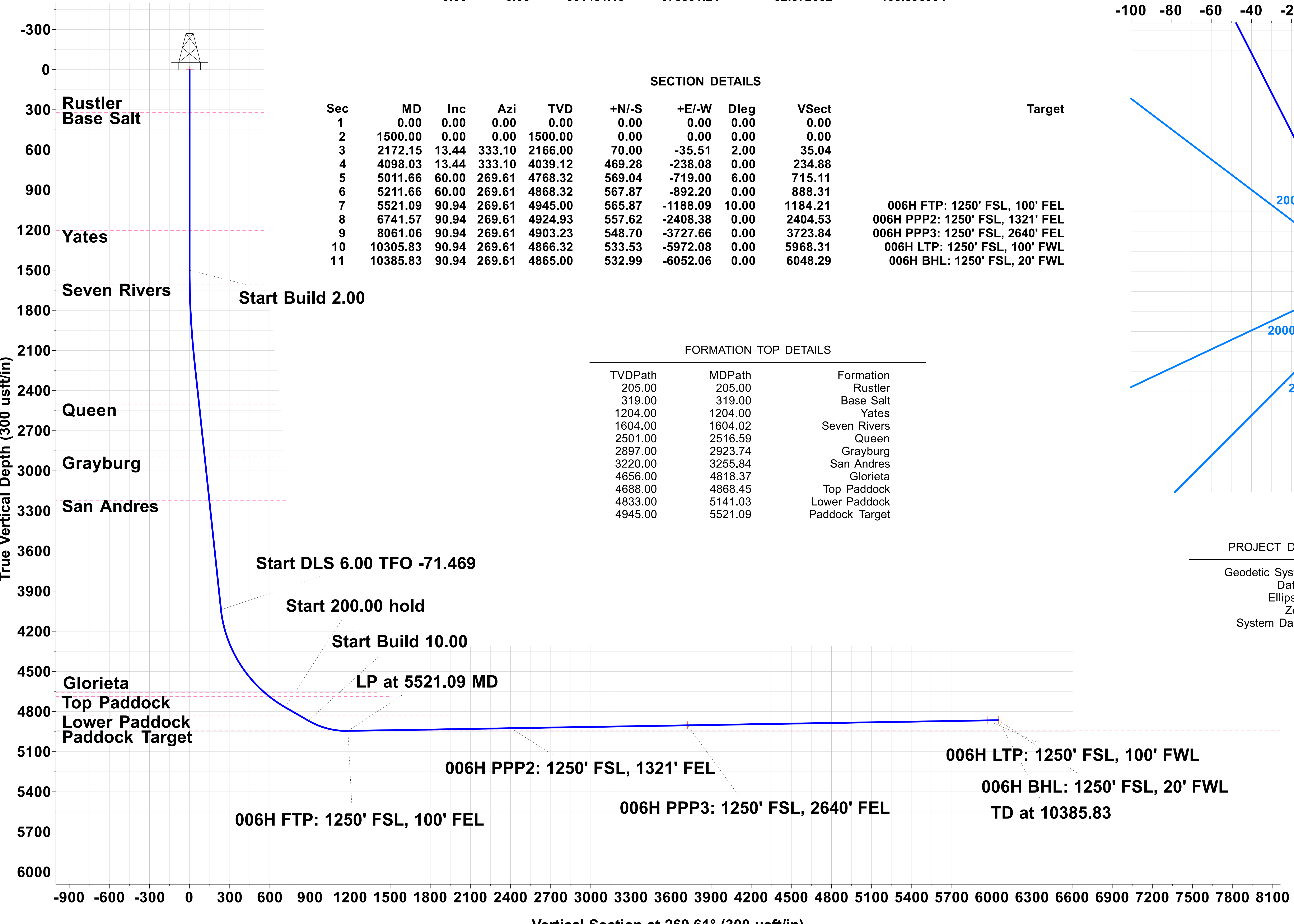
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	
3	2172.15	13.44	333.10	2166.00	70.00	-35.51	2.00	35.04	
4	4098.03	13.44	333.10	4039.12	469.28	-238.08	0.00	234.88	
5	5011.66	60.00	269.61	4768.32	569.04	-719.00	6.00	715.11	
6	5211.66	60.00	269.61	4868.32	567.87	-892.20	0.00	888.31	
7	5521.09	90.94	269.61	4945.00	565.87	-1188.09	10.00	1184.21	006H FTP: 1250' FSL, 100' FEL
8	6741.57	90.94	269.61	4924.93	557.62	-2408.38	0.00	2404.53	006H PPP2: 1250' FSL, 1321' FEL
9	8061.06	90.94	269.61	4903.23	548.70	-3727.66	0.00	3723.84	006H PPP3: 1250' FSL, 2640' FEL
10	10305.83	90.94	269.61	4866.32	533.53	-5972.08	0.00	5968.31	006H LTP: 1250' FSL, 100' FWL
11	10385.83	90.94	269.61	4865.00	532.99	-6052.06	0.00	6048.29	006H BHL: 1250' FSL, 20' FWL

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
205.00	205.00	Rustler
319.00	319.00	Base Salt
1204.00	1204.00	Yates
1604.00	1604.02	Seven Rivers
2501.00	2516.59	Queen
2897.00	2923.74	Grayburg
3220.00	3255.84	San Andres
4656.00	4818.37	Glorieta
4688.00	4868.45	Top Paddock
4833.00	5141.03	Lower Paddock
4945.00	5521.09	Paddock Target



PROJECT DETAILS: Eddy Co., NM (Nad-83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level





Planning Report



Database:	WBDS_SQL_3	Local Co-ordinate Reference:	Well 006H
Company:	Longfellow Energy	TVD Reference:	RKB = 20' @ 3884.10usft
Project:	Eddy Co., NM (Nad-83)	MD Reference:	RKB = 20' @ 3884.10usft
Site:	PETTY FED COM 31 CD	North Reference:	Grid
Well:	006H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN 2		

Project	Eddy Co., NM (Nad-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Well	006H					
Well Position	+N/-S	0.00 usft	Northing:	681,481.19 usft	Latitude:	32.872652
	+E/-W	0.00 usft	Easting:	675,301.24 usft	Longitude:	-103.896994
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,864.10 usft
Grid Convergence:		0.237 °				

Design	PLAN 2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.61

Plan Survey Tool Program	Date	10/28/2025			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	10,385.83	PLAN 2 (OH)	MWD+IFR1+SAG+FDIR	
				OWSG MWD + IFR1 + Sag	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,172.15	13.44	333.10	2,166.00	70.00	-35.51	2.00	2.00	0.00	333.099	
4,098.03	13.44	333.10	4,039.12	469.28	-238.08	0.00	0.00	0.00	0.000	
5,011.66	60.00	269.61	4,768.32	569.04	-719.00	6.00	5.10	-6.95	-71.469	
5,211.66	60.00	269.61	4,868.32	567.87	-892.20	0.00	0.00	0.00	0.000	
5,521.09	90.94	269.61	4,945.00	565.87	-1,188.09	10.00	10.00	0.00	0.000	006H FTP: 1250' F
6,741.57	90.94	269.61	4,924.93	557.62	-2,408.38	0.00	0.00	0.00	0.000	006H PPP2: 1250' I
8,061.06	90.94	269.61	4,903.23	548.70	-3,727.66	0.00	0.00	0.00	0.000	006H PPP3: 1250' I
10,305.83	90.94	269.61	4,866.32	533.53	-5,972.08	0.00	0.00	0.00	0.000	006H LTP: 1250' F
10,385.83	90.94	269.61	4,865.00	532.99	-6,052.06	0.00	0.00	0.00	0.000	006H BHL: 1250' F



Planning Report



Database:	WBDS_SQL_3	Local Co-ordinate Reference:	Well 006H
Company:	Longfellow Energy	TVD Reference:	RKB = 20' @ 3884.10usft
Project:	Eddy Co., NM (Nad-83)	MD Reference:	RKB = 20' @ 3884.10usft
Site:	PETTY FED COM 31 CD	North Reference:	Grid
Well:	006H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN 2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	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	0.00
200.00	0.00	0.00	200.00	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
400.00	0.00	0.00	400.00	0.00	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	0.00
600.00	0.00	0.00	600.00	0.00	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	0.00
800.00	0.00	0.00	800.00	0.00	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	0.00
1,000.00	0.00	0.00	1,000.00	0.00	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	0.00
1,200.00	0.00	0.00	1,200.00	0.00	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	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	333.10	1,599.98	1.56	-0.79	0.78	2.00	2.00	0.00	0.00
1,700.00	4.00	333.10	1,699.84	6.22	-3.16	3.11	2.00	2.00	0.00	0.00
1,800.00	6.00	333.10	1,799.45	14.00	-7.10	7.01	2.00	2.00	0.00	0.00
1,900.00	8.00	333.10	1,898.70	24.86	-12.61	12.44	2.00	2.00	0.00	0.00
2,000.00	10.00	333.10	1,997.47	38.81	-19.69	19.43	2.00	2.00	0.00	0.00
2,100.00	12.00	333.10	2,095.62	55.83	-28.32	27.94	2.00	2.00	0.00	0.00
2,172.15	13.44	333.10	2,166.00	70.00	-35.51	35.04	2.00	2.00	0.00	0.00
2,200.00	13.44	333.10	2,193.09	75.77	-38.44	37.93	0.00	0.00	0.00	0.00
2,300.00	13.44	333.10	2,290.35	96.50	-48.96	48.30	0.00	0.00	0.00	0.00
2,400.00	13.44	333.10	2,387.61	117.24	-59.48	58.68	0.00	0.00	0.00	0.00
2,500.00	13.44	333.10	2,484.87	137.97	-70.00	69.06	0.00	0.00	0.00	0.00
2,600.00	13.44	333.10	2,582.13	158.70	-80.52	79.43	0.00	0.00	0.00	0.00
2,700.00	13.44	333.10	2,679.39	179.43	-91.03	89.81	0.00	0.00	0.00	0.00
2,800.00	13.44	333.10	2,776.65	200.17	-101.55	100.19	0.00	0.00	0.00	0.00
2,900.00	13.44	333.10	2,873.91	220.90	-112.07	110.56	0.00	0.00	0.00	0.00
3,000.00	13.44	333.10	2,971.17	241.63	-122.59	120.94	0.00	0.00	0.00	0.00
3,100.00	13.44	333.10	3,068.43	262.36	-133.11	131.32	0.00	0.00	0.00	0.00
3,200.00	13.44	333.10	3,165.69	283.09	-143.63	141.70	0.00	0.00	0.00	0.00
3,300.00	13.44	333.10	3,262.95	303.83	-154.14	152.07	0.00	0.00	0.00	0.00
3,400.00	13.44	333.10	3,360.21	324.56	-164.66	162.45	0.00	0.00	0.00	0.00
3,500.00	13.44	333.10	3,457.47	345.29	-175.18	172.83	0.00	0.00	0.00	0.00
3,600.00	13.44	333.10	3,554.73	366.02	-185.70	183.20	0.00	0.00	0.00	0.00
3,700.00	13.44	333.10	3,651.99	386.76	-196.22	193.58	0.00	0.00	0.00	0.00
3,800.00	13.44	333.10	3,749.25	407.49	-206.74	203.96	0.00	0.00	0.00	0.00
3,900.00	13.44	333.10	3,846.51	428.22	-217.25	214.33	0.00	0.00	0.00	0.00
4,000.00	13.44	333.10	3,943.77	448.95	-227.77	224.71	0.00	0.00	0.00	0.00
4,098.03	13.44	333.10	4,039.12	469.28	-238.08	234.88	0.00	0.00	0.00	0.00
4,100.00	13.48	332.62	4,041.03	469.69	-238.29	235.09	6.00	1.93	-24.40	-24.40
4,150.00	14.73	321.40	4,089.53	479.83	-244.94	241.67	6.00	2.49	-22.45	-22.45
4,200.00	16.43	312.16	4,137.70	489.54	-254.15	250.81	6.00	3.39	-18.47	-18.47
4,250.00	18.45	304.75	4,185.41	498.80	-265.89	262.49	6.00	4.05	-14.81	-14.81
4,300.00	20.70	298.84	4,232.52	507.58	-280.14	276.68	6.00	4.51	-11.84	-11.84
4,350.00	23.12	294.07	4,278.90	515.85	-296.85	293.33	6.00	4.84	-9.53	-9.53
4,400.00	25.66	290.18	4,324.44	523.59	-315.98	312.40	6.00	5.07	-7.78	-7.78
4,450.00	28.28	286.96	4,369.00	530.78	-337.47	333.85	6.00	5.24	-6.45	-6.45
4,500.00	30.96	284.24	4,412.47	537.40	-361.27	357.60	6.00	5.37	-5.43	-5.43
4,550.00	33.69	281.93	4,454.71	543.43	-387.31	383.61	6.00	5.47	-4.63	-4.63
4,600.00	36.47	279.92	4,495.63	548.85	-415.53	411.78	6.00	5.54	-4.01	-4.01



Planning Report



Database:	WBDS_SQL_3	Local Co-ordinate Reference:	Well 006H
Company:	Longfellow Energy	TVD Reference:	RKB = 20' @ 3884.10usft
Project:	Eddy Co., NM (Nad-83)	MD Reference:	RKB = 20' @ 3884.10usft
Site:	PETTY FED COM 31 CD	North Reference:	Grid
Well:	006H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN 2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,650.00	39.26	278.16	4,535.10	553.66	-445.83	442.05	6.00	5.60	-3.51
4,700.00	42.09	276.61	4,573.02	557.84	-478.15	474.34	6.00	5.65	-3.12
4,750.00	44.93	275.21	4,609.28	561.37	-512.38	508.55	6.00	5.68	-2.79
4,800.00	47.79	273.95	4,643.78	564.25	-548.45	544.59	6.00	5.71	-2.53
4,850.00	50.66	272.79	4,676.44	566.46	-586.24	582.37	6.00	5.74	-2.31
4,900.00	53.54	271.73	4,707.15	568.01	-625.66	621.77	6.00	5.76	-2.13
4,950.00	56.43	270.74	4,735.84	568.89	-666.59	662.70	6.00	5.78	-1.97
5,000.00	59.32	269.82	4,762.42	569.09	-708.93	705.04	6.00	5.79	-1.84
5,011.66	60.00	269.61	4,768.32	569.04	-719.00	715.11	6.00	5.80	-1.78
5,100.00	60.00	269.61	4,812.48	568.52	-795.49	791.61	0.00	0.00	0.00
5,200.00	60.00	269.61	4,862.48	567.94	-882.09	878.21	0.00	0.00	0.00
5,211.66	60.00	269.61	4,868.32	567.87	-892.20	888.31	0.00	0.00	0.00
5,250.00	63.83	269.61	4,886.36	567.64	-926.01	922.13	10.00	10.00	0.00
5,300.00	68.83	269.61	4,906.42	567.33	-971.79	967.91	10.00	10.00	0.00
5,350.00	73.83	269.61	4,922.42	567.01	-1,019.14	1,015.26	10.00	10.00	0.00
5,400.00	78.83	269.61	4,934.23	566.68	-1,067.71	1,063.83	10.00	10.00	0.00
5,450.00	83.83	269.61	4,941.76	566.35	-1,117.12	1,113.24	10.00	10.00	0.00
5,500.00	88.83	269.61	4,944.96	566.01	-1,167.01	1,163.13	10.00	10.00	0.00
5,521.09	90.94	269.61	4,945.00	565.87	-1,188.09	1,184.21	10.00	10.00	0.00
5,600.00	90.94	269.61	4,943.70	565.34	-1,266.99	1,263.11	0.00	0.00	0.00
5,700.00	90.94	269.61	4,942.06	564.66	-1,366.98	1,363.10	0.00	0.00	0.00
5,800.00	90.94	269.61	4,940.41	563.98	-1,466.96	1,463.09	0.00	0.00	0.00
5,900.00	90.94	269.61	4,938.77	563.31	-1,566.94	1,563.07	0.00	0.00	0.00
6,000.00	90.94	269.61	4,937.12	562.63	-1,666.93	1,663.06	0.00	0.00	0.00
6,100.00	90.94	269.61	4,935.48	561.96	-1,766.91	1,763.05	0.00	0.00	0.00
6,200.00	90.94	269.61	4,933.84	561.28	-1,866.90	1,863.03	0.00	0.00	0.00
6,300.00	90.94	269.61	4,932.19	560.61	-1,966.88	1,963.02	0.00	0.00	0.00
6,400.00	90.94	269.61	4,930.55	559.93	-2,066.86	2,063.01	0.00	0.00	0.00
6,500.00	90.94	269.61	4,928.90	559.25	-2,166.85	2,162.99	0.00	0.00	0.00
6,600.00	90.94	269.61	4,927.26	558.58	-2,266.83	2,262.98	0.00	0.00	0.00
6,700.00	90.94	269.61	4,925.61	557.90	-2,366.82	2,362.97	0.00	0.00	0.00
6,741.57	90.94	269.61	4,924.93	557.62	-2,408.38	2,404.53	0.00	0.00	0.00
6,800.00	90.94	269.61	4,923.97	557.23	-2,466.80	2,462.95	0.00	0.00	0.00
6,900.00	90.94	269.61	4,922.32	556.55	-2,566.79	2,562.94	0.00	0.00	0.00
7,000.00	90.94	269.61	4,920.68	555.87	-2,666.77	2,662.92	0.00	0.00	0.00
7,100.00	90.94	269.61	4,919.04	555.20	-2,766.75	2,762.91	0.00	0.00	0.00
7,200.00	90.94	269.61	4,917.39	554.52	-2,866.74	2,862.90	0.00	0.00	0.00
7,300.00	90.94	269.61	4,915.75	553.85	-2,966.72	2,962.88	0.00	0.00	0.00
7,400.00	90.94	269.61	4,914.10	553.17	-3,066.71	3,062.87	0.00	0.00	0.00
7,500.00	90.94	269.61	4,912.46	552.49	-3,166.69	3,162.86	0.00	0.00	0.00
7,600.00	90.94	269.61	4,910.81	551.82	-3,266.68	3,262.84	0.00	0.00	0.00
7,700.00	90.94	269.61	4,909.17	551.14	-3,366.66	3,362.83	0.00	0.00	0.00
7,800.00	90.94	269.61	4,907.52	550.47	-3,466.64	3,462.82	0.00	0.00	0.00
7,900.00	90.94	269.61	4,905.88	549.79	-3,566.63	3,562.80	0.00	0.00	0.00
8,000.00	90.94	269.61	4,904.23	549.12	-3,666.61	3,662.79	0.00	0.00	0.00
8,061.06	90.94	269.61	4,903.23	548.70	-3,727.66	3,723.84	0.00	0.00	0.00
8,100.00	90.94	269.61	4,902.59	548.44	-3,766.60	3,762.78	0.00	0.00	0.00
8,200.00	90.94	269.61	4,900.95	547.76	-3,866.58	3,862.76	0.00	0.00	0.00
8,300.00	90.94	269.61	4,899.30	547.09	-3,966.56	3,962.75	0.00	0.00	0.00
8,400.00	90.94	269.61	4,897.66	546.41	-4,066.55	4,062.74	0.00	0.00	0.00
8,500.00	90.94	269.61	4,896.01	545.74	-4,166.53	4,162.72	0.00	0.00	0.00
8,600.00	90.94	269.61	4,894.37	545.06	-4,266.52	4,262.71	0.00	0.00	0.00
8,700.00	90.94	269.61	4,892.72	544.38	-4,366.50	4,362.69	0.00	0.00	0.00
8,800.00	90.94	269.61	4,891.08	543.71	-4,466.49	4,462.68	0.00	0.00	0.00



Planning Report



Database:	WBDS_SQL_3	Local Co-ordinate Reference:	Well 006H
Company:	Longfellow Energy	TVD Reference:	RKB = 20' @ 3884.10usft
Project:	Eddy Co., NM (Nad-83)	MD Reference:	RKB = 20' @ 3884.10usft
Site:	PETTY FED COM 31 CD	North Reference:	Grid
Well:	006H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN 2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,900.00	90.94	269.61	4,889.43	543.03	-4,566.47	4,562.67	0.00	0.00	0.00	
9,000.00	90.94	269.61	4,887.79	542.36	-4,666.45	4,662.65	0.00	0.00	0.00	
9,100.00	90.94	269.61	4,886.15	541.68	-4,766.44	4,762.64	0.00	0.00	0.00	
9,200.00	90.94	269.61	4,884.50	541.00	-4,866.42	4,862.63	0.00	0.00	0.00	
9,300.00	90.94	269.61	4,882.86	540.33	-4,966.41	4,962.61	0.00	0.00	0.00	
9,400.00	90.94	269.61	4,881.21	539.65	-5,066.39	5,062.60	0.00	0.00	0.00	
9,500.00	90.94	269.61	4,879.57	538.98	-5,166.37	5,162.59	0.00	0.00	0.00	
9,600.00	90.94	269.61	4,877.92	538.30	-5,266.36	5,262.57	0.00	0.00	0.00	
9,700.00	90.94	269.61	4,876.28	537.63	-5,366.34	5,362.56	0.00	0.00	0.00	
9,800.00	90.94	269.61	4,874.63	536.95	-5,466.33	5,462.55	0.00	0.00	0.00	
9,900.00	90.94	269.61	4,872.99	536.27	-5,566.31	5,562.53	0.00	0.00	0.00	
10,000.00	90.94	269.61	4,871.34	535.60	-5,666.30	5,662.52	0.00	0.00	0.00	
10,100.00	90.94	269.61	4,869.70	534.92	-5,766.28	5,762.51	0.00	0.00	0.00	
10,200.00	90.94	269.61	4,868.06	534.25	-5,866.26	5,862.49	0.00	0.00	0.00	
10,305.83	90.94	269.61	4,866.32	533.53	-5,972.08	5,968.31	0.00	0.00	0.00	
10,385.83	90.94	269.61	4,865.00	532.99	-6,052.06	6,048.29	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
006H SHL: 676' FSL, - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	681,481.19	675,301.24	32.872652	-103.896994	
006H BHL: 1250' FSL - plan hits target center - Point	0.00	0.00	4,865.00	532.99	-6,052.06	682,014.18	669,249.18	32.874184	-103.916700	
006H LTP: 1250' FSL, - plan hits target center - Point	0.00	0.00	4,866.32	533.53	-5,972.08	682,014.72	669,329.16	32.874185	-103.916439	
006H PPP3: 1250' FS - plan hits target center - Point	0.00	0.00	4,903.23	548.70	-3,727.66	682,029.89	671,573.58	32.874202	-103.909128	
006H PPP2: 1250' FS - plan hits target center - Point	0.00	0.00	4,924.93	557.62	-2,408.38	682,038.81	672,892.86	32.874212	-103.904831	
006H FTP: 1250' FSL - plan hits target center - Point	0.00	0.00	4,945.00	565.87	-1,188.09	682,047.06	674,113.15	32.874221	-103.900857	

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Longfellow Energy LP
LOCATION:	Section 32, T.16 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	Petty 31CD Fed Com 1H
ATS/API ID:	ATS-25-1583
APD ID:	10400104330
Sundry ID:	N/a

WELL NAME & NO.:	Petty 31CD Fed Com 2H
ATS/API ID:	ATS-25-1584
APD ID:	10400104336
Sundry ID:	N/a

WELL NAME & NO.:	Petty 31CD Fed Com 3H
ATS/API ID:	ATS-25-1585
APD ID:	10400104339
Sundry ID:	N/a

WELL NAME & NO.:	Petty 31CD Fed Com 4H
ATS/API ID:	ATS-25-1586
APD ID:	10400104342
Sundry ID:	N/a

WELL NAME & NO.:	Petty 31CD Fed Com 5H
ATS/API ID:	ATS-25-1587
APD ID:	10400104343
Sundry ID:	N/a

WELL NAME & NO.:	Petty 31CD Fed Com 6H
ATS/API ID:	ATS-25-1589
APD ID:	10400104462
Sundry ID:	N/a

WELL NAME & NO.:	Petty 31CD Fed Com 7H
ATS/API ID:	ATS-25-1591
APD ID:	10400104509
Sundry ID:	N/a

WELL NAME & NO.:	Petty 31CD Fed Com 8H
ATS/API ID:	ATS-25-1592
APD ID:	10400104512
Sundry ID:	N/a

WELL NAME & NO.:	Petty 31CD Fed Com 9H
ATS/API ID:	ATS-25-1590
APD ID:	10400104514
Sundry ID:	N/a

COA

H2S	Yes		
Potash	None	None	
Cave/Karst Potential	Low		
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	Conventional		
Other	<input type="checkbox"/> 4 String <input type="checkbox"/> 5 String	Capitan Reef None	<input type="checkbox"/> WIPP
Other	Pilot Hole None	<input type="checkbox"/> Open Annulus	
Cementing	Contingency Squeeze None	Echo-Meter None	Primary Cement Squeeze None
Special Requirements	<input type="checkbox"/> Water Disposal/Injection	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry	Waste Prevention Waste MP	
Special Requirements Variance	<input type="checkbox"/> BOPE Break Testing <input type="checkbox"/> Offline BOPE Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Grayburg** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** 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

1. The **13-3/8** inch surface casing shall be set at approximately **462 feet** (a minimum of 70 feet into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
 - 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 **9-5/8** inch intermediate casing is:

Option 1 (Single Stage):

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

Option 2:

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

DV tool(s) shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall contact the BLM if DV tool(s) depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe

to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

- a. First stage to DV tool(s): Cement to circulate. If cement does not circulate off the DV tool(s), contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool(s):
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
3. The minimum required fill of cement behind the 7 inch production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

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. 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.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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

EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

BLM_NM_CFO_DrillingNotifications@BLM.GOV

(575) 361-2822

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 **43 CFR part 3170 Subpart 3172** 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.

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 of both lead and tail cement, 2) until cement has been in place at least 8 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 NMOCDD 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 **43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3**.

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 43 CFR 3172.6(b)(9) 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 cement), 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 8 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 **43 CFR part 3170 Subpart 3172**.

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.

Long Vo (LVO) 3/3/2026



H₂S Drilling Operations Plan

- a. All personnel will be trained in H₂S working conditions as required by 43 CFR 3176 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 windsocks 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.



Company Personnel to be Notified

James Follis Office: (972) 590-9905
Mobile: (405) 306-6169

Local & County Agencies

Maljamar Fire Department 911 or (575) 370-4362
Loco Hills Fire Department 911 or (575) 628-5450
Eddy County Sheriff (Carlsbad) 911 or (575) 887-7551
Eddy County Sheriff sub-office (Artesia) 911 or (575) 746-9888
Eddy County Emergency Management (Carlsbad) (575) 887-9511
Artesia General Hospital (575) 748-3333
Lovington (Nor-Lea) Hospital (575) 396-6611
Eddy County North Road Department (Artesia) (575) 746-9540

State Agencies

NM State Police (Artesia) (575) 748-9718
NM Oil Conservation (Artesia) (575) 748-1283
NM Oil Conservation (Santa Fe) (505) 476-3440
NM Dept. of Transportation (Roswell) (575) 637-7201

Federal Agencies

BLM Carlsbad Field Office (575) 234-5972
National Response Center (800) 424-8802
US EPA Region 6 (Dallas) (800) 887-6063
(214) 665-6444



Residents within 2 miles (none)

Air Evacuation

Med Flight Air Ambulance (Albuquerque) (800) 842-4431

Lifeguard (Albuquerque) (888) 866-7256

Veterinarian

Artesia Animal Clinic (575) 748-2042

PETTY 31D WELLPAD
 LONGFELLOW ENERGY, LP
 IN THE W/2 SE/4 SW/4 & E/2 SW/4 SW/4 OF
 SECTION 32, TOWNSHIP 16 SOUTH, RANGE 31 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 OCTOBER 28, 2025

highest ground
to the Northeast

flare line (straight)
& flare >150'
from well head

warning signs
& windsock

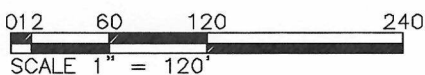
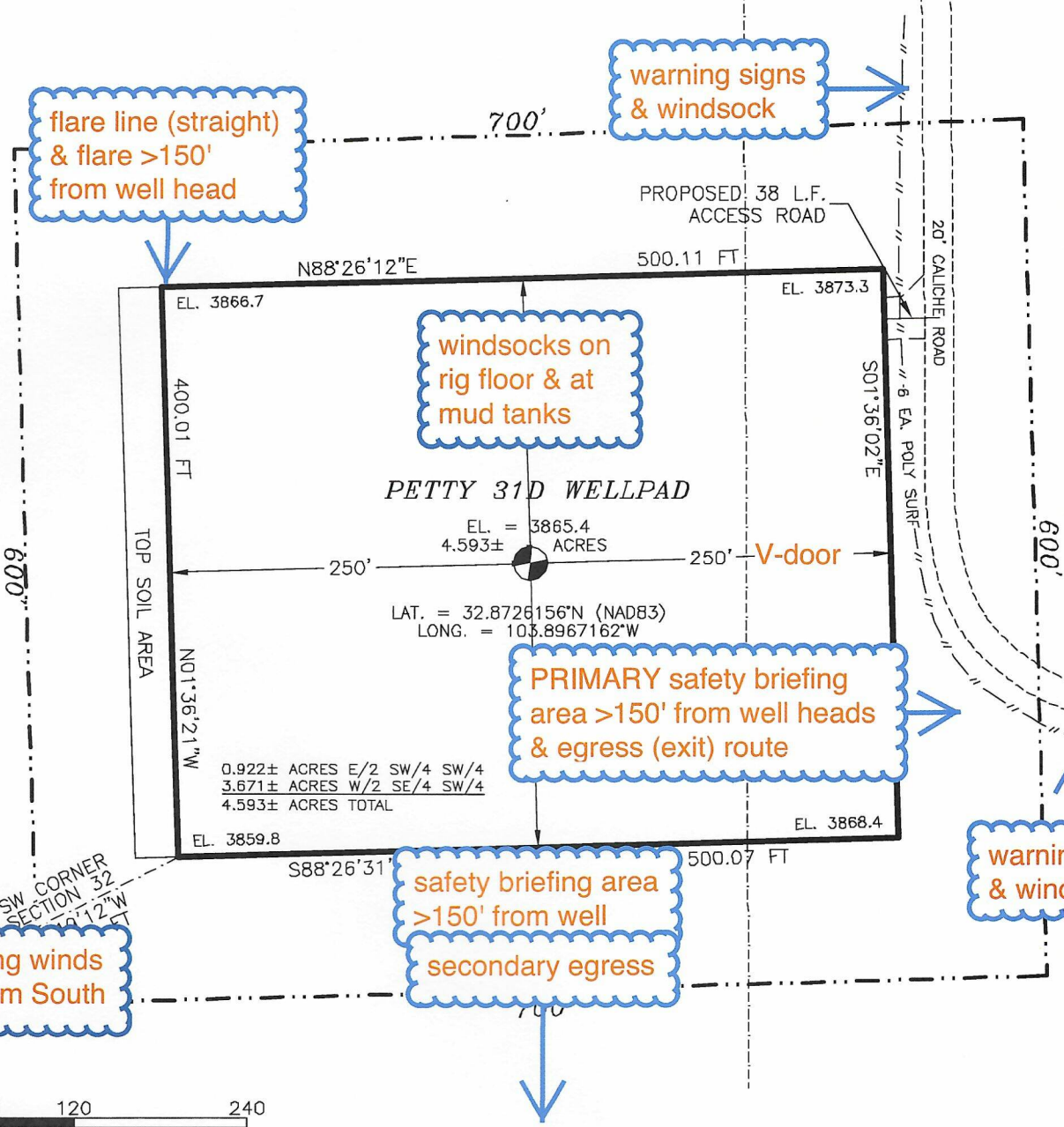
windsocks on
rig floor & at
mud tanks

PRIMARY safety briefing
area >150' from well heads
& egress (exit) route

warning signs
& windsock

safety briefing area
>150' from well
secondary egress

prevailing winds
blow from South



GENERAL NOTES
 1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A WELL PAD
 2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83), COORDINATES ARE NAD 83, ELEVATIONS ARE NAVD 88
DRIVING DIRECTIONS: FROM THE INTERSECTION OF CO. RD. 220 (SQUARE LAKE RD.) AND CO. RD. 252 (EAST SQUARE LAKE RD.) GO EAST ON CO. RD. 252 APPROX. 2.0 MILES, TURN RIGHT (SOUTH) ON 20' CALICHE ROAD AND GO APPROX. 0.73 MILES TO A ROAD SURVEY ON RIGHT (WEST), FOLLOW SURVEY APPROX. 38' WEST TO THE NORTHEAST PAD CORNER FOR THIS LOCATION.

SURVEYOR CERTIFICATE

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

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 28th DAY OF OCTOBER 2025



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

SURVEY NO. 10198C

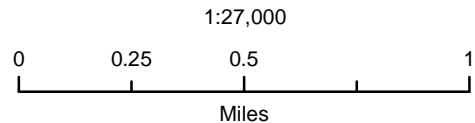
MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO (575) 234-3327

Longfellow Energy, L.P.

Petty 31D Pad H₂S Contingency Plan: Radius Map

Section 32, Township 16S, Range 31E
Eddy County, New Mexico

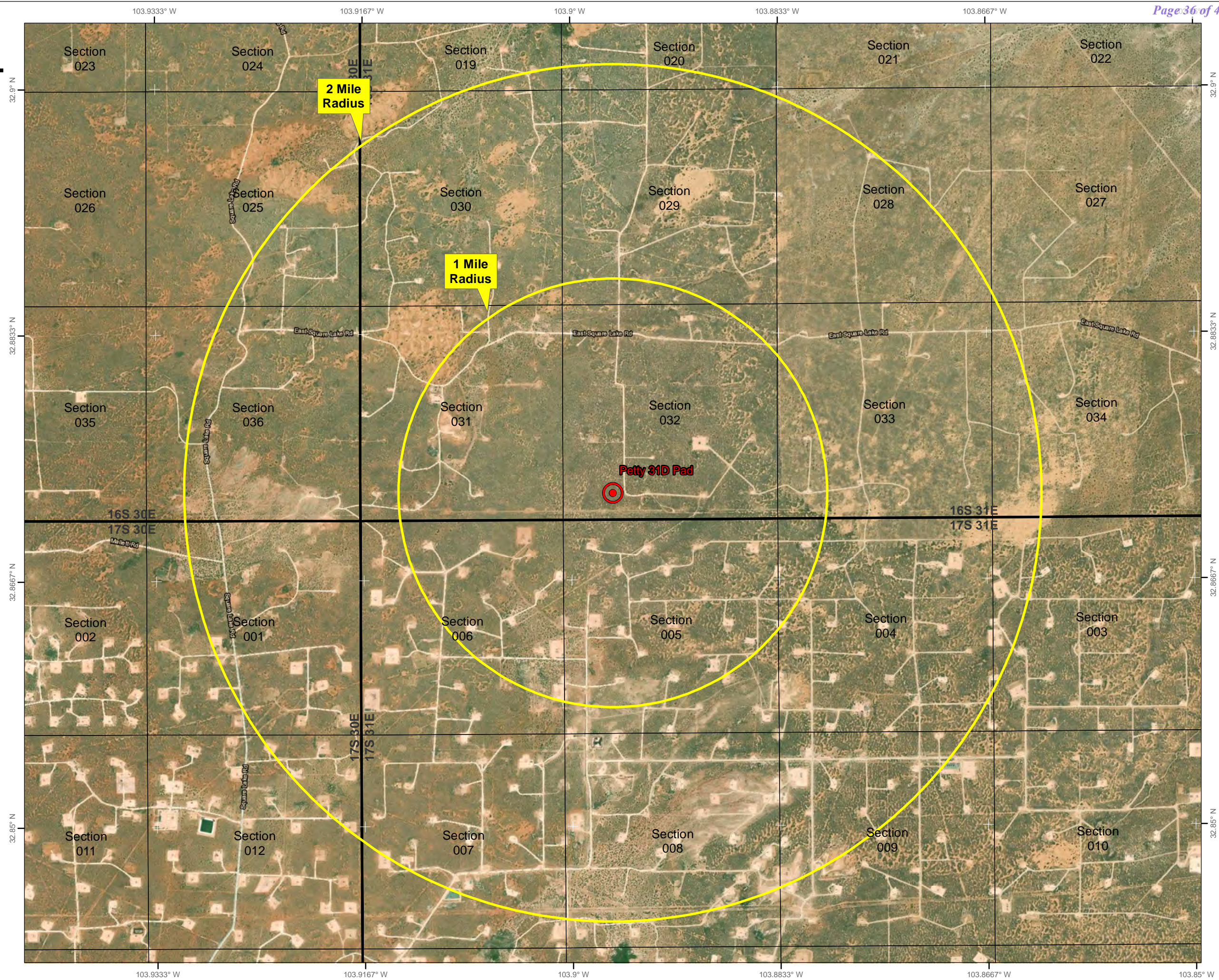
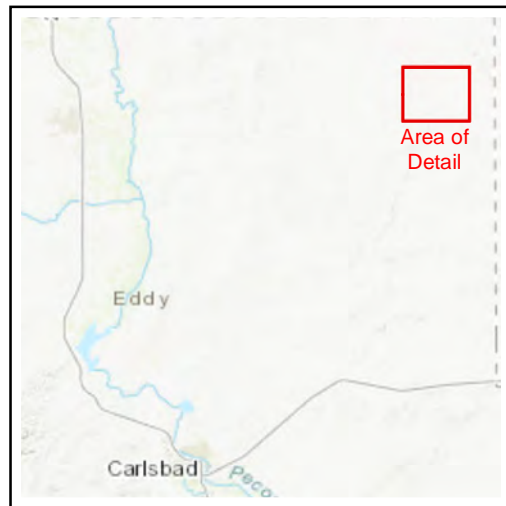
 Well Pad Location

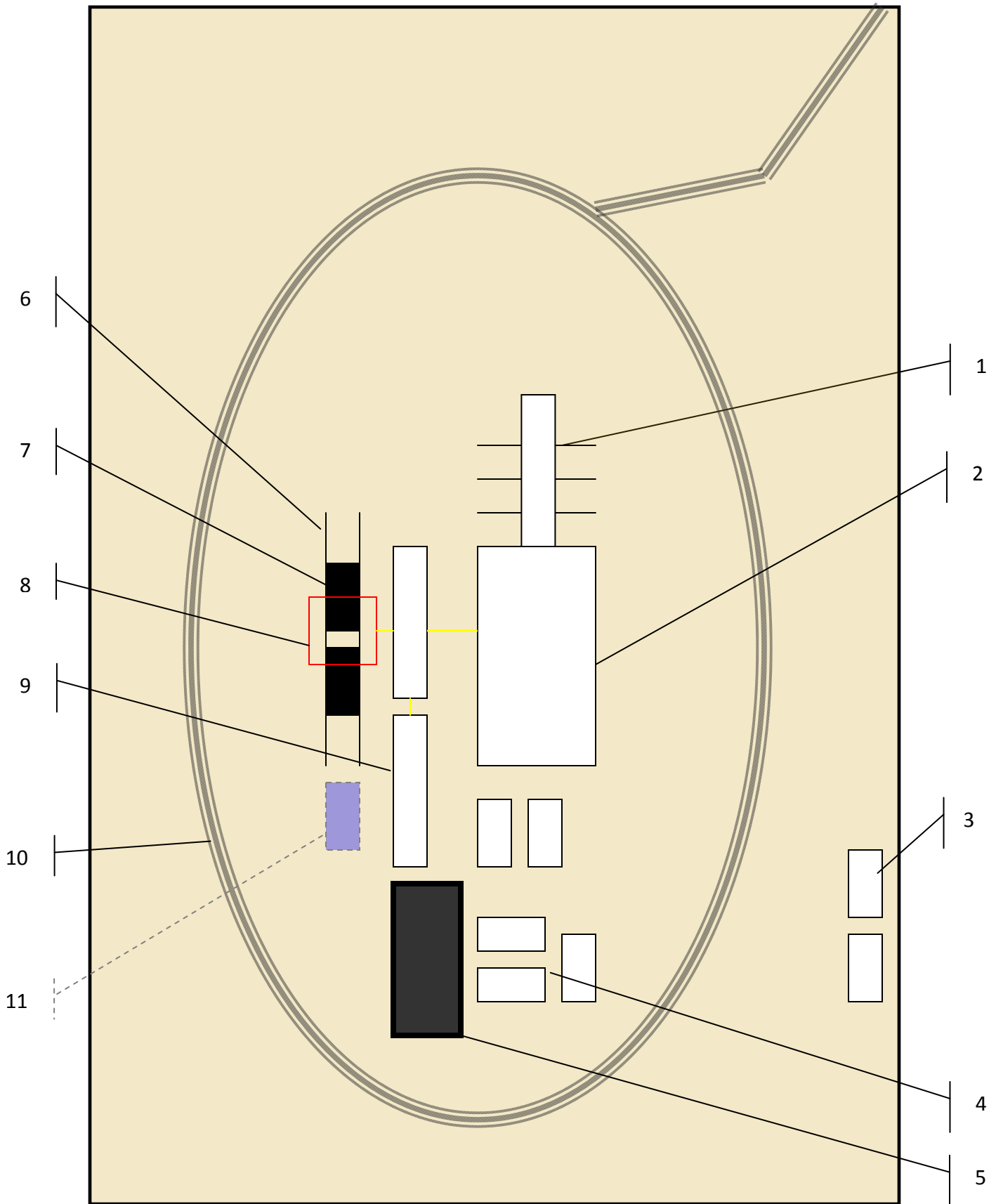


NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., April 7, 2025
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

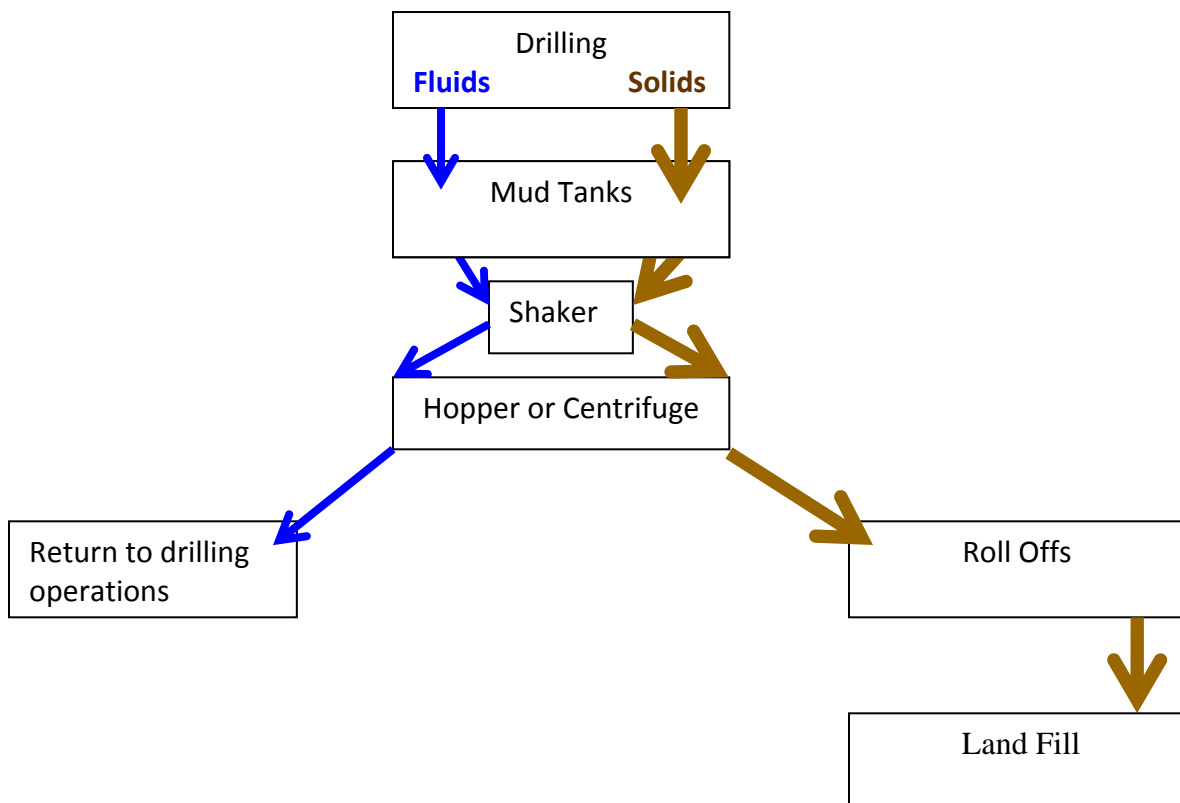


Above: Centrifugal Closed Loop System



- 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



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

General Information
Phone: (505) 629-6116

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

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

ACKNOWLEDGMENTS

Action 560711

ACKNOWLEDGMENTS

Operator: LONGFELLOW ENERGY, LP 8115 Preston Road Dallas, TX 75225	OGRID: 372210
	Action Number: 560711
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

ACKNOWLEDGMENTS

<input checked="" type="checkbox"/>	I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well.
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Sante Fe Main Office
Phone: (505) 476-3441

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**State of New Mexico
Energy, Minerals and Natural Resources
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1220 S. St Francis Dr.
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CONDITIONS

Action 560711

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Operator: LONGFELLOW ENERGY, LP 8115 Preston Road Dallas, TX 75225	OGRID: 372210
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CONDITIONS

Created By	Condition	Condition Date
permitsw	Cement is required to circulate on both surface and intermediate1 strings of casing.	3/6/2026
permitsw	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	3/6/2026
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	4/13/2026
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	4/13/2026
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.	4/13/2026
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.	4/13/2026
ward.rikala	If the method of isolation was not by circulation, a CBL must be performed; if strata isolation is not achieved, then remediation will be required before further operations.	4/13/2026