

Base of Productive Zone (BPZ)

Sec: 8 Twp: 1N Rng: 64W Footage at BPZ: 460 FNL 1443 FWL
Measured Depth of BPZ: 17311 True Vertical Depth of BPZ: 7150 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 8 Twp: 1N Rng: 64W Footage at BHL: 370 FNL 1443 FWL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: WELD Municipality: N/A

Is the Surface Location of this Well in an area designated as one of State interest and subject to the requirements of § 24-65.1-108 C.R.S.? Yes

Per § 34-60-106(1)(f)(I)(A) C.R.S., the following questions pertain to the Relevant Local Government approval of the siting of the proposed Oil and Gas Location.

SB 19-181 provides that when "applying for a permit to drill," operators must include proof that they sought a local government siting permit and the disposition of that permit application, or that the local government does not have siting regulations. § 34-60-106(1)(f)(I) (A) C.R.S.

Does the Relevant Local Government regulate the siting of Oil and Gas Locations, with respect to this Location? [X] Yes [] No

[X] If yes, in checking this box, I hereby certify that an application has been filed with the local government with jurisdiction to approve the siting of the proposed oil and gas location.

The disposition of the application filed with the Relevant Local Government is: Approved Date of Final Disposition: 06/09/2017

Comments: WOLGA17-0031. This location is built

SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION

Surface Owner of the land at this Well's Oil and Gas Location: [X] Fee [] State [] Federal [] Indian

Mineral Owner beneath this Well's Oil and Gas Location: [X] Fee [] State [] Federal [] Indian

Surface Owner Protection Bond (if applicable): Surety ID Number (if applicable):

MINERALS DEVELOPED BY WELL

The ownership of all the minerals that will be developed by this Well is (check all that apply):

- [X] Fee [] State [] Federal [] Indian [] N/A

LEASE INFORMATION

Using standard QtrQtr, Section, Township, Range format describe one entire mineral lease as follows:

* If this Well is within a unit, describe a lease that will be developed by the Well. * If this Well is not subject to a unit, describe the lease that will be produced by the Well. (Attach a Lease Map or Lease Description or Lease if necessary.)

T1N R64W: Sec. 8 ALL

Total Acres in Described Lease: 640 Described Mineral Lease is: [X] Fee [] State [] Federal [] Indian

Federal or State Lease #

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 3212 Feet
Building Unit: 3212 Feet
Public Road: 2371 Feet
Above Ground Utility: 2441 Feet
Railroad: 5280 Feet
Property Line: 185 Feet

INSTRUCTIONS:

- Specify all distances per Rule 308.b.(1).
- Enter 5280 for distance greater than 1 mile.
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.
- Building Unit – as defined in 100 Series Rules.

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
NIOBRARA	NBRR	407-3457	1280	T1NR64W: Sec. 8 &17:ALL

Federal or State Unit Name (if appl): _____

Unit Number: _____

SUBSURFACE MINERAL SETBACKS

Enter 5280 for distance greater than 1 mile.

Is this Well within a unit? Yes

If YES:

Enter the minimum distance from the Completed Zone of this Well to the Unit Boundary: 460 Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well within the same unit permitted or completed in the same formation: 560 Feet

If NO:

Enter the minimum distance from the Completed Zone of this Well to the Lease Line of the described lease: _____ Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well producing from the same lease and permitted or completed in the same formation: _____ Feet

Exception Location

If this Well requires the approval of a Rule 401.c Exception Location, enter the Rule or spacing order number and attach the Exception Location Request and Waivers. _____

SPACING & FORMATIONS COMMENTS

T1N R64W: Sec. 8 & 17 ALL

DRILLING PROGRAM

Proposed Total Measured Depth: 17401 Feet

TVD at Proposed Total Measured Depth 7150 Feet

Distance from the proposed wellbore to nearest existing or proposed wellbore belonging to another operator, including plugged wells:

Enter distance if less than or equal to 1,500 feet: 369 Feet No well belonging to another operator within 1,500 feet

Will a closed-loop drilling system be used? Yes

Is H₂S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No If yes, attach an H₂S Drilling Plan unless a plan was already submitted with the Form 2A per Rule 304.c.(10).

Will there be hydraulic fracture treatment at a depth less than 2,000 feet in this well? No

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? No

Will oil based drilling fluids be used? Yes

BOP Equipment Type: Annular Preventor Double Ram Rotating Head None

Beneficial reuse or land application plan submitted? _____

Reuse Facility ID: _____ or Document Number: _____

CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Grade	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR	26	16	ASTM	65	0	80	70	80	0
SURF	13+1/2	9+5/8	J55	36	0	2139	581	2139	0
1ST	8+1/2	5+1/2	P110	20	0	17401	2181	117401	0

Conductor Casing is NOT planned

POTENTIAL FLOW AND CONFINING FORMATIONS

Zone Type	Formation /Hazard	Top M.D.	Top T.V.D.	Bottom M.D.	Bottom T.V.D.	TDS (mg/L)	Data Source	Comment
Groundwater	Arapahoe	0	0	508	508	501-1000	USGS	USGS (USGS-400237104354401 600mg/L, USGS-400202104335801 1040 mg/L)
Groundwater	Fox Hills	508	508	1146	1140	501-1000	USGS	USGS (USGS-400419104334501 770 mg/L)
Confining Layer	Pierre	1146	1140	1588	1576			
Groundwater	Upper Pierre Porosity	1588	1576	2087	2069	1001-10000	Other	CO DNR Report Project Number 2141
Confining Layer	Pierre	2087	2069	4240	4195			
Hydrocarbon	Parkman	4240	4195	4428	4381			non-productive horizon
Confining Layer	Pierre	4428	4381	4546	4498			
Hydrocarbon	Sussex	4546	4498	4790	4739			non-productive horizon
Hydrocarbon	Shannon	4790	4739	4870	4818			non-productive horizon
Confining Layer	Pierre	4870	4818	7041	6917			
Hydrocarbon	Sharon Springs	7041	6917	7080	6945			non-productive horizon
Hydrocarbon	Niobrara	7080	6945	17401	7282			

OPERATOR COMMENTS AND SUBMITTAL

Comments

Best Management Practices

No	BMP/COA Type	Description
1	Drilling/Completion Operations	Operator will perform anti-collision evaluation of all active (producing, shut-in, of temporarily abandoned) offset wellbores that have the potential of being within 150' feet of the proposed well prior to drilling operations. Notice shall be given to all offset operators prior to drilling.
2	Drilling/Completion Operations	Upon initial rig-up and at least once every thirty (30) days during drilling operations thereafter, pressure testing of the casing string and each component of the blowout prevention equipment including flange connections shall be performed to seventy percent (70%) of working pressure or seventy percent (70%) of the internal yield of casing, whichever is less. Pressure testing shall be conducted and the documented results shall be retained by the operator for inspection by the Director for a period of one (1) year. Activation of the pipe rams for function testing shall be conducted on a daily basis when practicable.
3	Drilling/Completion Operations	Alternative Logging Program - One of the first wells drilled on the pad will be logged with Open Hole Resistivity Log and Gamma Ray Log from the kick-off point to into the surface casing. All wells on the pad will have a cement bond log with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The horizontal portion of every well will be logged with a measuredwhiledrilling gamma-ray log. The form 5, Completion Report, for each well on the pad will list all logs run and have those logs attached. The Form 5 for a well without openhole logs shall clearly state "Alternative Logging Program - No open-hole logs wererun" and shall clearly identify (by API#, well name & number) the well in which openhole logs were run.

Total: 3 comment(s)

Attachment List

Att Doc Num	Name
403414242	WELL LOCATION PLAT
403414244	DEVIATED DRILLING PLAN
403414245	OTHER
403414247	DIRECTIONAL DATA
403418470	OffsetWellEvaluations Data

Total Attach: 5 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)