

FORM
2

Rev
05/22

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

403265761

Date Received:

12/23/2022

APPLICATION FOR PERMIT TO

☒ Drill ☐ Deepen ☐ Re-enter ☐ Recomplete and Operate

Amend ☐

TYPE OF WELL OIL ☒ GAS ☐ COALBED ☐ OTHER: _____

Refile ☒

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☐

Well Name: Mottled South Well Number: 6-16HN
Name of Operator: MALLARD EXPLORATION LLC COGCC Operator Number: 10670
Address: 1400 16TH STREET SUITE 300
City: DENVER State: CO Zip: 80202
Contact Name: Erin Mathews Phone: (720)543 7959 Fax: ()
Email: emathews@mallardexploration.com

FINANCIAL ASSURANCE FOR PLUGGING, ABANDONMENT, AND RECLAMATION

COGCC Financial Assurance

☒ The Operator has provided or will provide Financial Assurance to the COGCC for this Well.

Surety ID Number (if applicable): 20170115

Federal Financial Assurance

☐ In checking this box, the Operator certifies that it has provided or will provide at least this amount of Financial Assurance to the federal government for this Well. (Per Rule702.a.)

Amount of Federal Financial Assurance \$ _____

WELL LOCATION INFORMATION

Surface Location

QtrQtr: SESW Sec: 31 Twp: 8N Rng: 59W Meridian: 6

Footage at Surface: 550 Feet FSL 1639 Feet FWL

Latitude: 40.613080 Longitude: -104.024769

GPS Data: GPS Quality Value: 1.8 Type of GPS Quality Value: PDOP Date of Measurement: 09/15/2017

Ground Elevation: 4969

Field Name: WILDCAT Field Number: 99999

Well Plan: is ☐ Directional ☒ Horizontal (highly deviated) ☐ Vertical

If Well plan is Directional or Horizontal attach Deviated Drilling Plan and Directional Data.

Subsurface Locations

Top of Productive Zone (TPZ)

Sec: 6 Twp: 7N Rng: 59W Footage at TPZ: 600 FNL 605 FEL
Measured Depth of TPZ: 7497 True Vertical Depth of TPZ: 6325 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)Sec: 6 Twp: 7N Rng: 59WFootage at BPZ: 600 FSL 605 FELMeasured Depth of BPZ: 11524True Vertical Depth of BPZ: 6325 FNL/FSL FEL/FWL**Bottom Hole Location (BHL)**Sec: 6 Twp: 7N Rng: 59WFootage at BHL: 600 FSL 605 FEL

FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATIONCounty: 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? ☒ Yes ☐ No☒ 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: 05/28/2021Comments: WOGLA18-0069 amended as 1041WOGLA-AMD21-0052, approved 5/28/2021**SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION**Surface Owner of the land at this Well's Oil and Gas Location: ☒ Fee ☐ State ☐ Federal ☐ IndianMineral Owner beneath this Well's Oil and Gas Location: ☒ 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):

☒ 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.)

NW, Sec 6, 7N, 59WTotal Acres in Described Lease: 166 Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

Federal or State Lease # _____

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 5280 Feet
Building Unit: 5280 Feet
Public Road: 531 Feet
Above Ground Utility: 1694 Feet
Railroad: 5280 Feet
Property Line: 550 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 | 535-980 | 640 | 7N-59W Sec 6: 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: 600 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: 745 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

DRILLING PROGRAM

Proposed Total Measured Depth: 11524 Feet

TVD at Proposed Total Measured Depth 6325 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: 143 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 | N/A | 43 | 0 | 80 | 50 | 80 | 0 |
| SURF | 13+1/2 | 9+5/8 | J55 | 36 | 0 | 1650 | 560 | 1650 | 0 |
| 1ST | 8+1/2 | 5+1/2 | HCP110 | 20 | 0 | 11524 | 1550 | 11524 | |

☐ 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 | LARAMIE | 0 | 0 | 190 | 190 | 0-500 | DWR | |
| Groundwater | LARAMIE FOX HILLS | 190 | 190 | 577 | 575 | 0-500 | DWR | |
| Confining Layer | PIERRE SHALE | 577 | 575 | 890 | 880 | | | |
| Groundwater | UPPER PIERRE | 890 | 880 | 1655 | 1580 | 0-500 | DWR | |
| Confining Layer | PIERRE SHALE | 1655 | 1580 | 3621 | 3271 | | | |
| Hydrocarbon | RICHARD SANDSTONE | 3621 | 3271 | 3752 | 3383 | | | |
| Hydrocarbon | PARKMAN SANDSTONE | 3752 | 3383 | 4139 | 3716 | | | |
| Confining Layer | PIERRE SHALE | 4139 | 3716 | 6865 | 6053 | | | |
| Confining Layer | SHARON SPRINGS SHALE | 6865 | 6053 | 6920 | 6094 | | | |
| Hydrocarbon | NIOBRARA SHALE | 6920 | 6094 | 11524 | 6325 | | | The TVD of the deepest hydrocarbon zone is the bottom of the well and not the bottom of the formation. The formation is not planned to be exited. |

OPERATOR COMMENTS AND SUBMITTAL

Comments

This Form 2 is being submitted as a refile of API # 05-123-48212.

The location is being reduced from a 16-well pad to a 7-well pad. The seven remaining wells are not being respaced. The refile Form 2 updates the same unchanged SHL/TPZ/BHL information with updated TMD/TVD, BPZ, casing grades, PFZ table data, and nearest well distances.

Remaining:

Mottled South 6-1HN (API: 05-123-48219)
Mottled South 6-4HN (API: 05-123-48216)
Mottled South 6-7HN (API: 05-123-48218)
Mottled South 6-16HN (API: 05-123-48212)
Mottled South 6-13HN (API: 05-123-48226)
Mottled South 6-10HN (API: 05-123-48224)
Mottled South 6-9HN (API: 05-123-48221)

Abandoning:

Mottled South 6-6HC (API: 05-123-48213)
Mottled South 6-2HC (API: 05-123-48214)
Mottled South 6-8HN (API: 05-123-48215)
Mottled South 6-15HC (API: 05-123-48217)
Mottled South 6-11HC (API: 05-123-48220)
Mottled South 6-5HN (API: 05-123-48222)
Mottled South 6-14HN (API: 05-123-48223)
Mottled South 6-12HN (API: 05-123-48225)
Mottled South 6-3HN (API: 05-123-48227)

There have been no new buildings constructed and no changes to the surrounding land use, Surface & Minerals, cultural distance setbacks, formations, or mineral lease descriptions. All previously submitted plats, notices, Surface Use Agreements, and letters are also still valid. Well Location Plat is in COGIS Docs as Doc #401618868.

The nearest well in unit per anti-collision is updated to the Mottled South 6-13HN @ 745'.

The nearest outside operated well per anti-collision is updated as the Chalk 31-14 (API: 05-123- 26661) DA Status @ 143'. Well is DA Status; no 408.u is required.

This application is in a Comprehensive Area Plan No CAP #: _____

Oil and Gas Development Plan Name _____ OGDID ID#: _____

Location ID: 453399

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: _____ Print Name: Justin Garrett

Title: Sr. Regulatory Analyst Date: 12/23/2022 Email: regulatory@ascentgeomatrics.c

Operator must have a valid water right or permit allowing for industrial use or purchased water from a seller that has a valid water right or permit allowing for industrial use, otherwise an application for a change in type of use is required under Colorado law. Operator must also use the water in the location set forth in the water right decree or well permit, otherwise an application for a change in place of use is required under Colorado law. Section 37-92-103(5), C.R.S. (2011).

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved:  Director of COGCC Date: 2/16/2023

Expiration Date: 02/15/2026

API NUMBER

05 123 48212 00

Conditions Of Approval

All representations, stipulations and conditions of approval stated in the Form 2A for this location shall constitute representations, stipulations and conditions of approval for this Form 2 Permit-to-Drill and are enforceable to the same extent as all other representations, stipulations and conditions of approval stated in this Permit-to-Drill.

| <u>COA Type</u> | <u>Description</u> |
|--------------------------------|---|
| Construction | If location is not constructed by 2A expiration (10/11/2023), a refile Form 2A must be approved prior to location construction |
| Drilling/Completion Operations | 1) Submit Form 42 electronically to COGCC 48 hours prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 48 hour spud notice via Form 42 for all subsequent wells drilled on the pad. 2) Provide cement coverage from TD to a minimum of 500' above Niobrara. Verify coverage with cement bond log. |
| Drilling/Completion Operations | Bradenhead Testing Per COGCC Order 1-232, Bradenhead tests shall be performed according to the following schedule and Form 17 submitted within 10 days of each test: 1) Within 60 days of rig release, prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation. 2) If a delayed completion, 6 months after rig release and prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation. 3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance. |
| Drilling/Completion Operations | Operator acknowledges the proximity of the listed non-operated wells. Operator assures that this offset list will be remediated per the DJ Basin Horizontal Offset Policy (option 3). Operator will submit a Form 42 ("OFFSET MITIGATION COMPLETED") stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of this well. GREEN *5-12(API 05-123-22009) PAUL *6-9(API 05-123-22633) PAUL *6-2(API 05-123-22632) |
| 4 COAs | |

Best Management Practices

| <u>No</u> | <u>BMP/COA Type</u> | <u>Description</u> |
|-----------|--------------------------------|--|
| 1 | Drilling/Completion Operations | Blowout Prevention Equipment ("BOPE"): A double ram annular preventer will be used during drilling. |
| 2 | Drilling/Completion Operations | Anti-collision: Operator will perform an anti-collision evaluation of all active (producing, shut in, or temporarily abandoned) offset wellbores that have the potential of being within 150 feet of a proposed well prior to drilling operations for the proposed well. Notice shall be given to all offset operators prior to drilling. |
| 3 | Drilling/Completion Operations | Alternative Logging Program: One of the first wells drilled on the pad will be logged with open-hole resistivity log with gamma-ray log from the kick-off point 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 measured while-drilling 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 open hole logs shall state "Alternative Logging Program - No open-hole logs were run" and shall clearly identify the type of log and the well (by API#) in which open-hole logs were run. |

Total: 3 comment(s)

Attachment List

| <u>Att Doc Num</u> | <u>Name</u> |
|--------------------|----------------------------|
| 403265761 | FORM 2 SUBMITTED |
| 403270549 | DEVIATED DRILLING PLAN |
| 403270550 | DIRECTIONAL DATA |
| 403281918 | OffsetWellEvaluations Data |
| 403322944 | OFFSET WELL EVALUATION |

Total Attach: 5 Files

General Comments

| <u>User Group</u> | <u>Comment</u> | <u>Comment Date</u> |
|-------------------|--|---------------------|
| Permit | Final Review Completed. | 02/15/2023 |
| Permit | Added the refile COA with the operator's consent The wellbore does not cross lease described but the lease is within DSU Passed Permit Review | 02/14/2023 |
| OGLA | This Location and its associated materials was fully reviewed in the review of this APD in accordance with current Rules. See Sundry doc #403314188 in Location #453399 file for additional information. This APD complies with all COGCC Rules and is adequately protective of public health, safety, welfare, the environment, and wildlife resources. OGLA task passed. | 02/14/2023 |
| Permit | Requesting from the operator to add the refile COA for unbuilt locations | 02/13/2023 |
| Engineer | <ul style="list-style-type: none"> •Surface Casing Check complete •Offset well review complete 408.t - No wells 408.u - No wells •Engineering review complete •Updated the OWE per the Operator | 01/06/2023 |

Total: 5 comment(s)