

FORM
2

Rev
12/20

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:

402589424

Date Received:

05/12/2021

APPLICATION FOR PERMIT TO:

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

Amend ☐

Refill ☐

Sidetrack ☐

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

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Well Name: Crystal 6-65 22-10 Well Number: 5HN
Name of Operator: GMT EXPLORATION COMPANY LLC COGCC Operator Number: 10243
Address: 1560 BROADWAY STE 2000
City: DENVER State: CO Zip: 80202
Contact Name: Whitney Eberhardt Phone: (303)586 9286 Fax: (720)946 3028
Email: w.eberhardt@gmtexploration.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20070102

WELL LOCATION INFORMATION

Surface Location

QtrQtr: NESE Sec: 22 Twp: 6S Rng: 65W Meridian: 6

Footage at Surface: 1932 Feet FSL 838 Feet FEL
Latitude: 39.512209 Longitude: -104.645752

GPS Data: GPS Quality Value: 1.7 Type of GPS Quality Value: PDOP Date of Measurement: 04/25/2019

Ground Elevation: 6178

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: 22 Twp: 6S Rng: 65W Footage at TPZ: 2044 FNL 2408 FWL
Measured Depth of TPZ: 8870 True Vertical Depth of TPZ: 8188 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)

Sec: 10 Twp: 6S Rng: 65W Footage at BPZ: 600 FNL 2419 FWL
Measured Depth of BPZ: 20873 True Vertical Depth of BPZ: 8188 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 10 Twp: 6S Rng: 65W Footage at BHL: 550 FNL 2419 FWL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: ELBERT 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.? No

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: Waived Date of Final Disposition: _____

Comments: Oil and Gas Pad sites require a building permit site plan, which is in development. Elbert County waived its right to precede.

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 ☐ Indian

Mineral Owner beneath this Well's Oil and Gas Location: ☒ Fee ☐ State ☐ Federal ☐ Indian

Surface Owner Protection Financial Assurance (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.)

N/2, SE/4, Section 22, T6S, R65W

Total Acres in Described Lease: 480 Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

Federal or State Lease # _____

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 960 Feet
Building Unit: 2179 Feet
Public Road: 2660 Feet
Above Ground Utility: 1013 Feet
Railroad: 5280 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.

Property Line: 720 Feet

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	535-1184	1600	10&15:All;22:N/2

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: 452 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

Approved Order 535-1184

DRILLING PROGRAM

Proposed Total Measured Depth: 20923 Feet

TVD at Proposed Total Measured Depth 8188 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: 1315 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? No

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	24	16	N/A	42	0	80	100	80	0
SURF	12+1/2	9+5/8	J55LTC	36	0	2650	900	2650	0
1ST	8+1/2	5+1/2	HCP110	20	0	20923	3140	20923	

☐ 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	Dawson	46	46	507	507	0-500	Other	COGIS Sample Inquiry
Groundwater	Denver	548	548	1465	1435	0-500	Other	COGIS Sample Inquiry
Groundwater	Upper Arapahoe	1506	1474	1969	1910	0-500	Other	COGIS Sample Inquiry
Groundwater	Laramie-Fox Hills	2274	2197	2694	2592	0-500	Other	COGIS Sample Inquiry
Confining Layer	Pierre Shale	2694	2592	3510	3360			
Hydrocarbon	Sussex-Terry	3510	3360	3669	3510			Not productive in area
Hydrocarbon	Shannon-Hygiene	5898	5608	6186	5880			Not productive in area
Confining Layer	Lower Pierre Shale	6186	5880	8292	7918			
Confining Layer	Sharon Springs Shale	8292	7918	8304	7928			sloughing clay
Hydrocarbon	Niobrara	8304	7928	20923	8188			Potential Flow Formation Table: 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: Nearest wellbore in proposed unit is the Crystal 6-65 22-10 6HN per anti-collision.

Nearest permitted or existing wellbore belonging to another operator is the UPRR Welch 1-15 (API: 05-039-06386) DA Status per anti-collision report.

This well has a bottom-hole location beyond the unit boundary setback. The bottom of the completed interval will be within the unit boundary setback at 600' FNL/FSL and 2419' FWL of Section 10. The wellbore beyond the unit boundary setback will be physically isolated and will not be completed.

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

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

Location ID: 479191

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: Regulatory Analyst Date: 5/12/2021 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: 8/16/2021

Expiration Date: 08/15/2024

API NUMBER

05 039 06737 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.

Condition of Approval

<u>COA Type</u>	<u>Description</u>
Drilling/Completion Operations	If the location has not been built by the Form 2A (Doc 402245599) expiration date of 01/11/2024, Operator must apply for an OGD and submit a Refile the Form 2A for approval prior to location construction.
Drilling/Completion Operations	COGCC COA: Operator will insure the wellbore beyond the unit boundary setback is physically isolated and is not completed. In the Operator Comments on the Form 5A the operator will (1) report the footages from the section lines of the bottom of the completed interval (2) describe how the wellbore beyond the unit boundary setback is physically isolated and (3) certify that none of the wellbore beyond the setback was completed.
Drilling/Completion Operations	Operator acknowledges the proximity of the listed wells. Operator assures that this offset list will utilize Option 4 per the DJ Basin Horizontal Offset Policy. Operator will submit a Form 42 ("OTHER – AS SPECIFIED BY PERMIT CONDITION") stating that appropriate mitigation will be completed, during the hydraulic stimulation of this well. This Form 42 shall be filed 48 hours prior to stimulation. Operator will assure that no well on the proposed pad will be hydraulically stimulated within 1500' of the listed well, 039-06153 Davidson #3 For all wells that are drilled with any portion within 1500' of 039-06153 Davidson #3. In the Form 5A comments, operator will (1) certify that this well has no treated interval within 1500' of the 039-06153 Davidson #3 , (2) provide the measured depth of the beginning and end points of any non-stimulated interval in this well that falls within 1500' of the 039-06153 Davidson #3 and (3) the distance to each offset well from these points. In other words, fully describe the excluded interval. 039-06153 Davidson 16-3
Drilling/Completion Operations	1) Submit Form 42 electronically to COGCC 2 business days prior to MIRU (spud notice) for the first well activity with a rig on the pad and provide 2 business day spud notice via Form 42 for all subsequent wells drilled on the pad. 2) Comply with Rule 408.j. and provide cement coverage from TD to a minimum of 500' above Niobrara. Verify coverage with cement bond log. 3) Oil-based drilling fluid is to be used only after all fresh water aquifers are covered.
Drilling/Completion Operations	Operator acknowledges the proximity of the listed non-operated wells: Operator agrees to: provide mitigation option 3 (per the DJ Basin Horizontal Offset Policy) to mitigate the situation, ensure all applicable documentation is submitted based on the selected mitigation option chosen, and submit a Form 42 ("OFFSET MITIGATION COMPLETED") for the remediated wells, referencing the API number of the proposed horizontal well(s) stating what appropriate mitigation occurred and that it has been completed, prior to the hydraulic stimulation of these wells. 039-06482 Bennett 10-1 039-06356 Amoco 11-4 039-06386 UPRR-Whelchel 1-15
Drilling/Completion Operations	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.
6 COAs	

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Drilling/Completion Operations	Prior to drilling operations, operator will perform an anti-collision scan of existing wells that have the potential of being within close proximity of the proposed well. This anti-collision scan will include definitive MWD or gyro surveys of the offset wells with included error of uncertainty per survey instrument, and compared against the proposed well path with its respective error of uncertainty. If current surveys do not exist for the offset wells, operator may have gyro surveys conducted to verify bottom hole location. The proposed well will only be drilled if the anti-collision scan results indicate that there is not a risk for collision, or harm to people or the environment.
2	Drilling/Completion Operations	Alternative Logging Program: One of the first wells drilled on the pad will be logged with an open-hole Resistivity Log and 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 clearly 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.
3	Drilling/Completion Operations	No drill stem test will be performed.
4	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 blow out equipment including flange connections will be performed to seventy percent (70%) of the internal yield of casing, whichever is less. Pressure testing will be conducted. The documented results will be retained by operator for inspection by the Director for a period of one (1) year. Activation of the pipe rams for function testing shall be conducted daily when practical. A BOP with a minimum pressure rating of three thousand (3,000) psi will be utilized. At a minimum, it will consist of two (2) ram preventers and one (1) annular preventer. A backup system of pressure control will be on site consisting of a minimum of one thousand (1,000) psi accumulator. All on site representatives will be certified in Well Control Operations.

Total: 4 comment(s)

Applicable Policies and Notices to Operators

Policy for Bradenhead Monitoring During Hydraulic Fracturing Treatments in the Greater Wattenberg Area.
<http://cogcc.state.co.us/documents/reg/Policies/PolicyGwaBradenheadMonitoringFinal.pdf>

Attachment List

<u>Att Doc Num</u>	<u>Name</u>
402589424	FORM 2 SUBMITTED
402594341	SURFACE AGRMT/SURETY
402597876	OffsetWellEvaluations Data
402683796	DIRECTIONAL DATA
402683802	WELL LOCATION PLAT
402683816	DEVIATED DRILLING PLAN
402781166	OFFSET WELL EVALUATION

Total Attach: 7 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
OGLA	The COGCC conducted an on-site on August 4, 2021 to verify the condition of the mapped stream. Based on the results of the on-site, the stream consists of an upland swale with no identifiable streambed or Ordinary High Water Line. Based on these results, the approved unbuilt Oil and Gas Location is in compliance with Rule 1202.c.(1)R.	08/13/2021
Permit	With operator concurrence, the Distance to Nearest Well within the unit has been corrected. Final Review complete.	08/12/2021
Permit	Requesting beyond the setback comment from operator. With operators concurrence changed "this well is subject to the requirements of 24-65.1-108 C.R.S. (1041 requirements) to NO. This well has a bottom-hole location beyond the unit boundary setback. The bottom of the completed interval will be within the unit boundary setback at 600' FNL/FSL and 2419' FWL of Section 10. The wellbore beyond the unit boundary setback will be physically isolated and will not be completed. Permitting Review Complete.	08/10/2021

Total: 3 comment(s)