

FORM  
2  
Rev  
05/22

State of Colorado  
Energy & Carbon Management Commission

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



Document Number:

403820005

Date Received:

08/02/2024

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: Irwin 6-65 23-11 Well Number: 5HN  
Name of Operator: GMT EXPLORATION COMPANY LLC ECMC Operator Number: 10243  
Address: 4949 S NIAGARA ST SUITE 250  
City: DENVER State: CO Zip: 80237  
Contact Name: Maxwell Blair Phone: (303)586-9291 Fax: ( )  
Email: mblair@gmtexploration.com

FINANCIAL ASSURANCE FOR PLUGGING, ABANDONMENT, AND RECLAMATION

ECMC Financial Assurance

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

Surety ID Number (if applicable): 20070102

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: SESE Sec: 23 Twp: 6S Rng: 65W Meridian: 6

Footage at Surface: 1124 Feet FSL 451 Feet FEL

Latitude: 39.509839 Longitude: -104.625943

GPS Data: GPS Quality Value: 1.3 Type of GPS Quality Value: PDOP Date of Measurement: 04/26/2019

Ground Elevation: 6222

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: 23 Twp: 6S Rng: 65W Footage at TPZ: 2039 FNL 2379 FWL

Measured Depth of TPZ: 9160 True Vertical Depth of TPZ: 8212 FNL/FSL FEL/FWL

Base of Productive Zone (BPZ)

Sec: 11 Twp: 6S Rng: 65W Footage at BPZ: 600 FNL 2371 FWL  
Measured Depth of BPZ: 21164 True Vertical Depth of BPZ: 8212 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 11 Twp: 6S Rng: 65W Footage at BHL: 550 FNL 2370 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 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.)

Please see attached Lease Map.

Total Acres in Described Lease: 614 Described Mineral Lease is:  Fee  State  Federal  Indian  
Federal or State Lease # \_\_\_\_\_

### SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 1680 Feet  
Building Unit: 1889 Feet  
Public Road: 2559 Feet  
Above Ground Utility: 1937 Feet  
Railroad: 5280 Feet  
Property Line: 451 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           | 535-1185                | 1600                          | 11&14:All:23: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: 446 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 535-1185

**DRILLING PROGRAM**Proposed Total Measured Depth: 21214 FeetTVD at Proposed Total Measured Depth 8212 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: \_\_\_\_\_ Feet  No well belonging to another operator within 1,500 feetWill a closed-loop drilling system be used? YesIs H<sub>2</sub>S gas reasonably expected to be encountered during drilling operations at concentrations greater thanor equal to 100 ppm? No If yes, attach an H<sub>2</sub>S 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? NoWill salt sections be encountered during drilling? NoWill salt based (>15,000 ppm Cl) drilling fluids be used? NoWill oil based drilling fluids be used? YesBOP Equipment Type:  Annular Preventor  Double Ram  Rotating Head  None

Beneficial reuse or land application plan submitted? \_\_\_\_\_

Reuse Facility ID: \_\_\_\_\_ or Document Number: \_\_\_\_\_

**CASING PROGRAM**

| <u>Casing Type</u> | <u>Size of Hole</u> | <u>Size of Casing</u> | <u>Grade</u> | <u>Wt/Ft</u> | <u>Csg/Liner Top</u> | <u>Setting Depth</u> | <u>Sacks Cmt</u> | <u>Cmt Btm</u> | <u>Cmt Top</u> |
|--------------------|---------------------|-----------------------|--------------|--------------|----------------------|----------------------|------------------|----------------|----------------|
| CONDUCTOR          | 24                  | 16                    | N/A          | 42           | 0                    | 80                   | 100              | 80             | 0              |
| SURF               | 12+1/2              | 9+5/8                 | J55 LTC      | 36           | 0                    | 2644                 | 900              | 2644           | 0              |
| 1ST                | 8+1/2               | 5+1/2                 | HCP110       | 20           | 0                    | 21214                | 3180             | 21214          |                |

 Conductor Casing is NOT planned**POTENTIAL FLOW AND CONFINING FORMATIONS**

| <u>Zone Type</u> | <u>Formation /Hazard</u> | <u>Top M.D.</u> | <u>Top T.V.D.</u> | <u>Bottom M.D.</u> | <u>Bottom T.V.D.</u> | <u>TDS (mg/L)</u> | <u>Data Source</u> | <u>Comment</u>  |
|------------------|--------------------------|-----------------|-------------------|--------------------|----------------------|-------------------|--------------------|---|
| Groundwater      | Dawson                   | 109             | 109               | 520                | 520                  | 0-500             | Other              | COGIS - Sample Site Inquiry   |
| Groundwater      | Denver                   | 574             | 574               | 1453               | 1422                 | 0-500             | Other              | COGIS - Sample Site Inquiry   |
| Groundwater      | Upper Arapahoe           | 1488            | 1454              | 2000               | 1914                 | 0-500             | Other              | COGIS - Sample Site Inquiry   |
| Groundwater      | Laramie-Fox Hills        | 2333            | 2212              | 2762               | 2596                 | 0-500             | Other              | COGIS - Sample Site Inquiry   |
| Confining Layer  | Pierre Shale             | 2762            | 2596              | 3504               | 3260                 |                   |                    |   |
| Hydrocarbon      | Sussex-Terry             | 3504            | 3260              | 3671               | 3409                 |                   |                    | Not Productive in Area  |
| Hydrocarbon      | Shannon-Hygiene          | 6146            | 5622              | 6316               | 5775                 |                   |                    | Not Productive in Area  |
| Confining Layer  | Pierre Shale             | 6316            | 5775              | 8552               | 7917                 |                   |                    |   |
| Confining Layer  | Sharon Springs Shale     | 8552            | 7917              | 8594               | 7952                 |                   |                    | Sloughing Clay  |
| Hydrocarbon      | Niobrara                 | 8594            | 7952              | 21214              | 8212                 |                   |                    | 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



## CONDITIONS OF APPROVAL, IF ANY LIST

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>  |
|--------------------------------|---|
| Drilling/Completion Operations | Operator will log two (2) additional well(s) with open-hole resistivity log with gamma-ray log from the kick-off point into the surface casing for the stratigraphically deepest wells on the pad for a total of three (3) wells logged during the second rig occupation of this location   |
| Interim Reclamation            | In the event delayed operations are to occur, Operator shall comply with Notice to Operators: Interim Reclamation Procedures for Delayed Operations (dated January 5, 2017)   |
| Drilling/Completion Operations | Operator will ensure 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 | 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.<br>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.<br>3) Oil-based drilling fluid is to be used only after all fresh water aquifers are covered.  |
| 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:<br>1) Within 60 days of rig release, prior to stimulation. If any pressure greater than 200 psi, must contact COGCC engineer prior to stimulation.<br>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.<br>3) A post-production test within 60 days after first sales, as reported on the Form 10, Certificate of Clearance. |
| 5 COAs                         |   |

## Operator Best Management Practices

| <u>No</u> | <u>BMP/COA Type</u>            | <u>Description</u>  |
|-----------|--------------------------------|---|
| 1         | Drilling/Completion Operations | Logging: The Irwin 6-65 23-11 10HN (API No. 05-039-06722) well drilled on the pad was logged with an open-hole Resistivity Log and Gamma Ray Log from the kickoff 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 "No open-hole logs were run. The Irwin 6-65 23-11 10HN (API No. 05-039- 6722) is the well in which open-hole logs were run. |

Total: 1 comment(s)

## ATTACHMENT LIST

| <u>Att Doc Num</u> | <u>Name</u>      |
|--------------------|------------------|
| 403820005          | FORM 2 SUBMITTED |

Total Attach: 1 Files

## General Comments

| <u>User Group</u> | <u>Comment</u>  | <u>Comment Date</u> |
|-------------------|---|---------------------|
| Permit            | Final Review Completed.   | 01/24/2025          |
| OGLA              | This Location and its associated Form 2A materials was fully evaluated during the review of this APD in accordance with current Rules. See Sundry doc #404065775 in Location #479194 file for additional information. This APD complies with all Colorado ECMC Rules. OGLA task passed. | 01/22/2025          |
| OGLA              | OGLA Staff has requested the following additional information:<br>An updated Location Drawing with nearby HPH layers.<br>Mitigation and minimization measures that will be implemented on location.   | 11/20/2024          |
| Permit            | Received consent from the operator for the following:<br>1. Add the refile COA<br>2. Add the drilling beyond the setback COA<br>3. Add the additional open hole logging COA<br>4. Add the refile comment<br>Passed Permit Review  | 10/01/2024          |
| Permit            | Requesting the following from the operator:<br>1. Adding the refile COA for built locations<br>2. Adding the drilling beyond the setback COA<br>3. Adding the additional open hole logging COA<br>4. Adding the Refile Comment  | 09/19/2024          |

Total: 5 comment(s)