

FORM
2A

Rev
04/18

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:

401641814

(SUBMITTED)

Date Received:

Oil and Gas Location Assessment

☐ New Location ☐ Refile ☒ Amend Existing Location Location#: 446104

This Oil and Gas Location Assessment is to be submitted to the COGCC for approval prior to any ground disturbance activity associated with oil and gas operations. Approval of this Oil and Gas Location Assessment will allow for the construction of the below specified Location; however, it does not supersede any land use rules applied by the local land use authority. Please see the COGCC website at <http://cogcc.state.co.us/> for all accompanying information pertinent this Oil and Gas Location Assessment.

Location ID:

446104

Expiration Date:

☐ This location assessment is included as part of a permit application.

CONSULTATION

- ☐ This location is included in a Comprehensive Drilling Plan. CDP # _____
- ☐ This location is in a sensitive wildlife habitat area.
- ☐ This location is in a wildlife restricted surface occupancy area.
- ☐ This location includes a Rule 306.d.(1)A.ii. variance request.

Operator

Operator Number: 10542

Name: CUB CREEK ENERGY

Address: 200 PLAZA DRIVE SUITE 100

City: HIGHLANDS RANCH State: CO Zip: 80129

Contact Information

Name: TRACY BUTZEN

Phone: (303) 515-7050

Fax: ()

email: tracy.butzen@cub-creek.com

FINANCIAL ASSURANCE

- ☒ Plugging and Abandonment Bond Surety ID (Rule 706): 20140112 ☐ Gas Facility Surety ID (Rule 711): _____
- ☐ Waste Management Surety ID (Rule 704): _____

LOCATION IDENTIFICATION

Name: MARKHAM PAD

Number: _____

County: WELD

Quarter: NWSE Section: 32 Township: 4N Range: 68W Meridian: 6 Ground Elevation: 5043

Define a single point as a location reference for the facility location. When the location is to be used as a well site then the point shall be a well location.

Footage at surface: 2325 feet FSL from North or South section line

1514 feet FEL from East or West section line

Latitude: 40.268630 Longitude: -105.023120

PDOP Reading: 5.6 Date of Measurement: 11/04/2016

Instrument Operator's Name: Casey Kohout

RELATED REMOTE LOCATIONS

(Enter as many Related Locations as necessary. Enter the Form 2A document # only if there is no established COGCC Location ID#)

This proposed Oil and Gas Location is:

LOCATION ID #

FORM 2A DOC #

FACILITIES

Indicate the number of each type of oil and gas facility planned on location

| | | | | | | | | | |
|-----------------------|----|----------------------|----|----------------------|--|------------------|---|-------------------------------|---|
| Wells | 12 | Oil Tanks* | 8 | Condensate Tanks* | | Water Tanks* | 3 | Buried Produced Water Vaults* | 1 |
| Drilling Pits | | Production Pits* | | Special Purpose Pits | | Multi-Well Pits* | | Modular Large Volume Tanks | |
| Pump Jacks | | Separators* | 12 | Injection Pumps* | | Cavity Pumps* | | Gas Compressors* | 1 |
| Gas or Diesel Motors* | | Electric Motors | | Electric Generators* | | Fuel Tanks* | | LACT Unit* | 1 |
| Dehydrator Units* | | Vapor Recovery Unit* | 3 | VOC Combustor* | | Flare* | | Pigging Station* | 1 |

OTHER FACILITIES*

Other Facility Type

Number

| | |
|------------------------------------|---|
| ECD | 6 |
| ENGINE OIL TANK | 1 |
| INCINERATOR (TEMPORARY) | 1 |
| METERS | 2 |
| VALVE SET RISER & PIG:listed above | 1 |
| VRT | 1 |

Those facilities indicated by an asterisk () shall be used to determine the distance from the Production Facility to the nearest cultural feature on the Cultural Setbacks Tab.

Per Rule 303.b.(3)C, description of all oil, gas, and/or water pipelines:

Intra-facility flowlines are generally 3" (although may be 2") fusion bonded schedule 40 steel.

CONSTRUCTION

Date planned to commence construction: 06/26/2018

Size of disturbed area during construction in acres: 6.80

Estimated date that interim reclamation will begin: 12/26/2018

Size of location after interim reclamation in acres: 3.10

Estimated post-construction ground elevation: 5043

DRILLING PROGRAM

Will a closed loop system be used for drilling fluids: Yes

Is H₂S anticipated? No

Will salt sections be encountered during drilling: No

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

Will oil based drilling fluids be used? No

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE

Drilling Fluids Disposal Method: Commercial Disposal

Cutting Disposal: OFFSITE

Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: _____ or Document Number: _____

Centralized E&P Waste Management Facility ID, if applicable: _____

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: Markham Family Farms, LLC

Phone: _____

Address: 1283 WCR 38

Fax: _____

Address: _____

Email: _____

City: Berthoud State: CO Zip: 80513

Surface Owner: ☒ Fee ☐ State ☐ Federal ☐ Indian

Check all that apply. The Surface Owner: ☒ is the mineral owner

☒ is committed to an oil and Gas Lease

☒ has signed the Oil and Gas Lease

☐ is the applicant

The Mineral Owner beneath this Oil and Gas Location is: ☒ Fee ☐ State ☐ Federal ☐ Indian

The Minerals beneath this Oil and Gas Location will be developed from or produced to this Oil and Gas Location: Yes

The right to construct this Oil and Gas Location is granted by: oil and gas lease

Surface damage assurance if no agreement is in place: _____ Surface Surety ID: _____

Date of Rule 306 surface owner consultation 01/26/2016

CURRENT AND FUTURE LAND USE

Current Land Use (Check all that apply):

Crop Land: ☐ Irrigated ☐ Dry land ☐ Improved Pasture ☐ Hay Meadow ☐ CRP

Non-Crop Land: ☒ Rangeland ☐ Timber ☐ Recreational ☐ Other (describe): _____

Subdivided: ☐ Industrial ☐ Commercial ☐ Residential

Future Land Use (Check all that apply):

Crop Land: ☐ Irrigated ☐ Dry land ☐ Improved Pasture ☐ Hay Meadow ☐ CRP

Non-Crop Land: ☒ Rangeland ☐ Timber ☐ Recreational ☐ Other (describe): _____

Subdivided: ☐ Industrial ☐ Commercial ☐ Residential

CULTURAL DISTANCE INFORMATION

Provide the distance to the nearest cultural feature as measured from Wells or Production Facilities onsite.

| | From WELL | From PRODUCTION FACILITY |
|-----------------------------------|-----------|--------------------------|
| Building: | 553 Feet | 429 Feet |
| Building Unit: | 668 Feet | 539 Feet |
| High Occupancy Building Unit: | 5280 Feet | 5280 Feet |
| Designated Outside Activity Area: | 5280 Feet | 5280 Feet |
| Public Road: | 1504 Feet | 1494 Feet |
| Above Ground Utility: | 2741 Feet | 2614 Feet |
| Railroad: | 5280 Feet | 5280 Feet |
| Property Line: | 151 Feet | 35 Feet |

INSTRUCTIONS:

- All measurements shall be provided from center of nearest Well or edge of nearest Production Facility to nearest of each cultural feature as described in Rule 303.b.(3)A.
- 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, High Occupancy Building Unit, and Designated Outside Activity Area - as defined in 100-Series Rules.
- For measurement purposes only, Production Facilities should only include those items with an asterisk(*) on the Facilities Tab.

DESIGNATED SETBACK LOCATION INFORMATION

Check all that apply. This location is within a:

- ☒ Buffer Zone
- ☐ Exception Zone
- ☐ Urban Mitigation Area

Pre-application Notifications (required if location is within 1,000 feet of a building unit):

Date of Rule 305.a.(1) Urban Mitigation Area Notification to Local Government: _____

Date of Rule 305.a.(2) Buffer Zone Notification to Building Unit Owners: 04/11/2016

- Buffer Zone - as described in Rule 604.a.(2), within 1,000' of a Building Unit.
- Exception Zone - as described in Rule 604.a.(1), within 500' of a Building Unit.
- Urban Mitigation Area - as defined in 100-Series Rules.
- Large UMA Facility - as defined in 100-Series Rules.

FOR MULTI-WELL PADS AND PRODUCTION FACILITIES WITHIN DESIGNATED SETBACK LOCATIONS ONLY:

- ☒ Check this box if this Oil and Gas Location has or will have Production Facilities that serve multiple wells (on or offsite) and the Production Facilities are proposed to be located less than 1,000 feet from a Building Unit. *(Pursuant to Rule 604.c.(2)E.i., the operator must evaluate alternative locations for the Production Facilities that are farther from the Building Unit, and determine whether those alternative locations were technically feasible and economically practicable for the same proposed development.)*
- ☒ By checking this box, I certify that no alternative placements for the Production Facilities, farther from the nearest Building Unit, were available based on the analysis conducted pursuant to Rule 604.c.(2)E.i.

In the space below, explain rationale for siting the multi-well Production Facility(ies) that supports your Rule 604.c.(2)E.i determination. Attach documentation that supports your determination to this Form 2A.

The positioning of the well pad and associated multi-well Production Facility was chosen by the Surface Owner, whose Building Unit is the closest at 539' to the South, in conjunction with IPT & the necessity of wellhead placement to successfully drill the full 12 well pad of proposed horizontal wells.
Siting Rationale remains as originally submitted.

SOIL

List all soil map units that occur within the proposed location. attach the National Resource Conservation Service (NRCS) report showing the "Map Unit Description" report listing the soil typical vertical profile. This data is to be used when segregating topsoil.

The required information can be obtained from the NRCS web site at <http://soildatamart.nrcs.usda.org/> or from the COGCC web site GIS Online map page found at <http://colorado.gov/cogcc>. Instructions are provided within the COGCC web site help section.

NRCS Map Unit Name: #65—Thedalund loam, 3 to 9 percent slopes

NRCS Map Unit Name: #82—Wiley-Colby complex, 1 to 3 percent slopes

NRCS Map Unit Name: #34—Kim loam, 5 to 9 percent slopes

PLANT COMMUNITY:

Complete this section only if any portion of the disturbed area of the location's current land use is on non-crop land.

Are noxious weeds present: Yes ☐ No ☒

Plant species from: ☒ NRCS or, ☐ field observation Date of observation: _____

List individual species: Western wheatgrass, Needleandthread, Sideoats grama, Blue grama, Bottlebrush squirreltail, Fendler threeawn, Fourwing saltbush, Sand dropseed, Green needlegrass, Little bluestem, Threadleaf sedge, Plains muhly

Check all plant communities that exist in the disturbed area.

- ☐ Disturbed Grassland (Cactus, Yucca, Cheatgrass, Rye)
- ☒ Native Grassland (Bluestem, Grama, Wheatgrass, Buffalograss, Fescue, Oatgrass, Brome)
- ☐ Shrub Land (Mahogany, Oak, Sage, Serviceberry, Chokecherry)
- ☐ Plains Riparian (Cottonwood, Willow, Aspen, Maple, Poplar, Russian Olive, Tamarisk)
- ☐ Mountain Riparian (Cottonwood, Willow, Blue Spruce)
- ☐ Forest Land (Spruce, Fir, Ponderosa Pine, Lodgepole Pine, Juniper, Pinyon, Aspen)
- ☐ Wetlands Aquatic (Bullrush, Sedge, Cattail, Arrowhead)
- ☐ Alpine (above timberline)
- ☐ Other (describe): _____

WATER RESOURCES

Is this a sensitive area: ☒ No ☐ Yes

Distance to nearest

downgradient surface water feature: 77 Feet

water well: 1600 Feet

Estimated depth to ground water at Oil and Gas Location 36 Feet

Basis for depth to groundwater and sensitive area determination:

Nearest Downgradient surface water feature: Ditch 77' N, as measured from the North edge of the location.
Measured from the Markham 1 well: Nearest Water well: Permit #158797; 1563' NE, Depth 600', Static Water Level of 80'.
The next nearest Water well: Permit # 1026; 1844' SE, Depth 34', Static Water Level of 8'. Taking these 2 water wells Static water levels difference divided by 2 = 36' for the Static Water Level for this location since it is midway between the 2 water wells.

Is the location in a riparian area: ☒ No ☐ Yes

Was an Army Corps of Engineers Section 404 permit filed ☒ No ☐ Yes If yes attach permit.

Is the location within a Rule 317B Surface Water Supply Area buffer No zone:

If the location is within a Rule 317B Surface Water Supply Area buffer have all public water supply systems within 15 miles been notified: _____

Is the Location within a Floodplain? ☒ No ☐ Yes Floodplain Data Sources Reviewed (check all that apply)

☒ Federal (FEMA)

☒ State

☒ County

☐ Local

☐ Other

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 318A

WILDLIFE

☐ This location is included in a Wildlife Mitigation Plan

☐ This location was subject to a pre-consultation meeting with CPW held on _____

Operator Proposed Wildlife BMPs

No BMP

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

☐ Rule 604.a.(1)A. Exception Zone (within 500' of a Building Unit) and is in an Urban Mitigation Area

☐ Rule 604.b.(1)A. Exception Location (existing or approved Oil & Gas Location now within a Designated Setback as a result of Rule 604.a.)

☐ Rule 604.b.(1)B. Exception Location (existing or approved Oil & Gas Location is within a Designated Setback due to Building Unit construction after Location approval)

☐ Rule 604.b.(2) Exception Location (SUA or site-specific development plan executed on or before August 1, 2013)

☐ Rule 604.b.(3) Exception Location (Building Units constructed after August 1, 2013 within setback per an SUA or site-specific development plan)

RULE 502.b VARIANCE REQUEST

☐ Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number _____

ALL exceptions and variances require attached Request Letter(s). Refer to applicable rule for additional required attachments (e.g. waivers, certifications, SUAs).

OPERATOR COMMENTS AND SUBMITTAL

| | |
|----------|---|
| Comments | <p>Location ID data is for the Markham 1 well with the as built. All 12 wells have been drilled and completed. All BMP's remain as originally submitted and no additions included.</p> <p>This location is already built, the dates entered for the "planned to commence construction and estimated date of interim reclamation" are required to be future dates by this form, thus the future dates entered on the Construction, Drilling & Waste tab.</p> <p>This Amended 2A is being submitted to account for additional area not within the original permitted disturbance:</p> <ol style="list-style-type: none">1. Update the actual size of the disturbed area during construction and interim reclamation size.2. Update the Cultural distances from the Production Facility - none of the Cultural distances have changed as the only equipment that was installed outside the originally permitted pad are in the NW to W side and are further away from the cultural items. |
|----------|---|

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

Signed: _____ Date: _____ Email: paul.gottlob@iptenergyservices.com

Print Name: PAUL GOTTLÖB Title: Regulatory & Engin. Tech. _____

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

COGCC Approved: _____ Director of COGCC Date: _____

Conditions Of Approval

All representations, stipulations and conditions of approval stated in this Form 2A for this location shall constitute representations, stipulations and conditions of approval for any and all subsequent operations on the location unless this Form 2A is modified by Sundry Notice, Form 4 or an Amended Form 2A.

COA Type

Description

| | |
|--|--|
| | |
|--|--|

Best Management Practices

No BMP/COA Type

Description

| | |
|--|--|
| | |
|--|--|

Attachment Check List

Att Doc Num

Name

| | |
|-----------|-------------------------|
| 401651512 | OTHER |
| 401651531 | FACILITY LAYOUT DRAWING |

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

| | | |
|--|--|---------------------|
| | | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)

Public Comments

No public comments were received on this application during the comment period.

