

FORM
2A

Rev
08/13

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:

401129884

Date Received:

02/21/2017

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: _____

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:

449920

Expiration Date:

04/05/2020

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: 10625
 Name: HIGHLANDS NATURAL RESOURCES CORPORATION
 Address: 2401 EAST 2ND AVENUE SUITE 150
 City: DENVER State: CO Zip: 80206

Contact Information

Name: Jeff Annable
 Phone: (303) 928-7128
 Fax: (303) 218-5678
 email: regulatory@ascentgeomatics.com

RECLAMATION FINANCIAL ASSURANCE

- Plugging and Abandonment Bond Surety ID: 20160068 Gas Facility Surety ID: _____
- Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Highlands Number: 5-64 15-16 Pad
 County: ARAPAHOE
 Quarter: NESE Section: 15 Township: 5S Range: 64W Meridian: 6 Ground Elevation: 5936

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: 2460 feet FSL from North or South section line
440 feet FEL from East or West section line

Latitude: 39.615025 Longitude: -104.530988

PDOP Reading: 1.5 Date of Measurement: 11/17/2016

Instrument Operator's Name: Charlie Scott

SURFACE & MINERALS & RIGHT TO CONSTRUCT

Name: State of Colorado

Phone: _____

Address: 200 E Colfax Ave

Fax: _____

Address: _____

Email: _____

City: Denver State: CO Zip: 80203-1724

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 _____

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:	5280 Feet	5280 Feet
Building Unit:	5280 Feet	5280 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	5280 Feet	5280 Feet
Above Ground Utility:	5280 Feet	5280 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	440 Feet	308 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

- 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.

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: _____

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.

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 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: TrE - Truckton loamy sand, 5 to 20 percent slopes

NRCS Map Unit Name: _____

NRCS Map Unit Name: _____

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: 11/17/2016

List individual species:

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: 0 Feet

water well: 3145 Feet

Estimated depth to ground water at Oil and Gas Location 80 Feet

Basis for depth to groundwater and sensitive area determination:

Distance to nearest downgradient water feature is a seasonal stream.

The nearest water well is CDWR Permit #282746, but the nearest water well with a SWL is CDWR Permit #25333 which is 3626' NE.

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 609

WILDLIFE

- This location is included in a Wildlife Mitigation Plan
- This location was subject to a pre-consultation meeting with CPW held on _____

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 The Highlands 5-64 15-16 Pad is being permitted for sixteen (16) proposed horizontal wells, however, only four (4) APDs are being submitted at this time. Operator wants to permit this location for all future development.

This site is not within a Buffer Zone, therefore, no Facility Layout or Waste Management Plan was attached.

Operator certifies that the MLVT will be designed and implemeted consistent with the COGC Policy on the Use of Modular Large Volume Tanks in Colorado. MLVT Design Package, certified and sealed by a licensed professional engineer, is available upon request.

Manufacturer of MLVT: Rockwater Energy Solutions
 Size and Volume: 188' 60,000 bbl
 Anticipated time frame on site: 60 days

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

Signed: _____ Date: 02/21/2017 Email: regulatory@ascentgeomatrics.com

Print Name: Jeff Annable Title: Regulatory Analyst

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: Matthew Lee Director of COGCC Date: 4/6/2017

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.

<u>COA Type</u>	<u>Description</u>

Best Management Practices

No	BMP/COA Type	Description
1	Planning	<p>Emergency Response Plan: Operator will provide the County with an Emergency Response Plan (ERP) to address all potential emergencies that may be associated with an oil and gas facility. Operator shall also provide a copy of such plan to all emergency service providers that would respond to such emergencies. A "will-serve" letter must be obtained from the appropriate emergency provider(s).</p> <p>Fencing: A fencing plan will be determined with surface owner input.</p> <p>Visual Impacts: Painting of oil and gas facilities: except for such facilities that must be painted a certain color for safety reasons, operator agrees to paint all new (post-mou) production facilities with uniform, non-contrasting, non-reflective color tones and with colors matched to, but slightly darker than, surrounding landscapes.</p>
2	Storm Water/Erosion Control	<p>Stormwater controls will be used to protect the seasonal stream that is within the limits of disturbance.</p>
3	Construction	<p>Operator has an MLVT Design Package, certified and sealed by a licensed professional engineer, which is on file in their office and available upon request.</p> <ul style="list-style-type: none"> • The MLVT will be at least 75 feet from a wellhead, fired vessel, heater-treater, or a compressor with a rating of 200 horsepower or more. It will be placed at least 50 feet from a separator, well test unit, or other non-fired equipment. • All liner seams will be welded and tested in accordance with applicable ASTM International standards. • Operator will be present during initial filling of the MLVT and the contractor will supervise and inspect the MLVT for leaks during filling. • Operator will comply with the testing and re-inspection requirements and associated written standard operating procedures (SOP) listed on the design package. • Signs will be posted on the MLVT indicating that the contents are freshwater. • The MLVT will be operated with a minimum of 1 foot of freeboard at all times. • Access to the MLVT will be limited to operational personnel and authorized regulatory agency personnel. • Operator or contractor will conduct daily visual inspections of the exterior wall and surrounding area for integrity deficiencies. • Operator has developed a contingency plan/emergency response plan associated with the MLVT and it is on file at their office. • Construction: Operator acknowledges and will comply with the Colorado Oil & Gas Conservation Commission Policy on the Use of Modular Large Volume Tanks in Colorado dated June 13, 2014.
4	Drilling/Completion Operations	<p>Green Completions - Emission Control System: Test separators and associated flow lines and sand traps shall be installed on-site to accommodate green completions techniques pursuant to COGCC Rules. In the anticipated absence of a viable gas sales line, the flowback gas shall be thermally oxidized in an emissions control device (ECD), which will be installed and kept in operable condition for least the first 90-days of production pursuant to CDPHE rules. This ECD shall have an adequate capacity for 1.5 times the largest flowback within a 10 mile radius, will be flanged to route gas to other or permanent oxidizing equipment and shall be provided with the equipment needed to maintain combustions where non-combustible gases are present. Test separators and associated flow lines and sand traps shall be installed on-site to accommodate green completions techniques pursuant to COGCC Rules. All salable quality gas shall be directed to the sales line as soon as practicable or shut in and conserved.</p>
5	Drilling/Completion Operations	<p>Alternative Logging Program - Multi-Well Pad: 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 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" and shall clearly identify (by API#, well name & number) the well in which open-hole logs were run.</p>

Total: 5 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
401129884	FORM 2A SUBMITTED
401215963	ACCESS ROAD MAP
401215964	HYDROLOGY MAP
401215965	LOCATION DRAWING
401215966	LOCATION PICTURES
401215967	REFERENCE AREA MAP
401215968	REFERENCE AREA PICTURES
401215969	MULTI-WELL PLAN
401215970	NRCS MAP UNIT DESC

Total Attach: 9 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	State Land Board has been contacted to verify surface restoration bond and lease; SLB confirms there is no objection to this permit application. Final review complete. No LGD or public comment received.	04/05/2017
Permit	Passed initial permitting review.	03/27/2017
OGLA	Changed Sensitive Area to YES based on the presence of the intermittent stream within the northeastern portion of the Location. Please address how the stream will be protected. - Per Operator request, added "Stormwater controls will be used to protect the seasonal stream that is within the limits of disturbance" to the BMPs. Unchecked the State Box under Floodplains as both the COGIS map layer and DSS maps are based on the federal FEMA maps.	03/20/2017
Permit	Changed to oil-based drilling fluids per Operator request.	02/24/2017
Permit	Passed completeness.	02/22/2017

Total: 5 comment(s)