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: 401529896
(SUBMITTED)
Date Received:

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:

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: 10311
Name: SRC ENERGY INC
Address: 1675 BROADWAY SUITE 2600
City: DENVER State: CO Zip: 80202

Contact Information

Name: Erin Ekblad
Phone: (720) 616.4319
Fax: (720) 616.4301
email: eekblad@srcenergy.com

RECLAMATION FINANCIAL ASSURANCE

☒ Plugging and Abandonment Bond Surety ID: 20090043
☐ Gas Facility Surety ID:
☐ Waste Management Surety ID:

LOCATION IDENTIFICATION

Name: Greeley-Rothe Federal Number: 16-1 Pad
County: WELD

QuarterQuarter: SESE Section: 1 Township: 5N Range: 67W Meridian: 6 Ground Elevation: 4873

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: 943 feet FSL from North or South section line
294 feet FEL from East or West section line

Latitude: 40.424142 Longitude: -104.833502

PDOP Reading: 1.7 Date of Measurement: 03/09/2017

Instrument Operator's Name: Alan Hnizdo

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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 #
Production Facilities Location serves Well(s)		401452969

FACILITIES

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

Wells	12	Oil Tanks*	8	Condensate Tanks*		Water Tanks*	2	Buried Produced Water Vaults*	
Drilling Pits		Production Pits*		Special Purpose Pits		Multi-Well Pits*		Modular Large Volume Tanks	1
Pump Jacks		Separators*	24	Injection Pumps*		Cavity Pumps*		Gas Compressors*	2
Gas or Diesel Motors*		Electric Motors		Electric Generators*	1	Fuel Tanks*		LACT Unit*	4
Dehydrator Units*		Vapor Recovery Unit*	6	VOC Combustor*	4	Flare*		Pigging Station*	

OTHER FACILITIES*

Other Facility Type	Number
Gas Buster	3
Gas Lift Skid	1
Instrument Air Building	2
NGL Electrical Generator	2
NGL Skid	2
NGL Tanks	6
NGL Valve Trailer	2
Two Phase Separator	6

*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:

1 inch, 2 inch, 3 inch, schedule 40/80/160 bare and fusion bonded epoxy, threaded and welded. water, oil, gas.
4, 6, 8 inch schedule 40/80 bare and fusion bonded epoxy, welded, water, oil, gas.
2 inch stainless steel, schedule 40, water
3 inch polyflow composite pipe, 500 psig rated, water
6 inch, 8 inch, 10 inch schedule 40 welded, oil and combustion vapors.
Flowlines 3, 4, 6, 8" fusion bonded epoxy and welded scheduled 10/40/80/160 steel.

CONSTRUCTION

Date planned to commence construction: 03/30/2018 Size of disturbed area during construction in acres: 14.36

Estimated date that interim reclamation will begin: 01/01/2019 Size of location after interim reclamation in acres: 3.53

Estimated post-construction ground elevation: 4873

DRILLING PROGRAM

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

Is H_2S 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? Yes

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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: Greeley-Rothe LLC Phone: _____

Address: 4100 E. Mississippi Ave., Suite 500 Fax: _____

Address: _____ Email: _____

City: Glendale State: CO Zip: 80246

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 03/09/2017

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:	1172 Feet	1237 Feet
Building Unit:	1262 Feet	1219 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	282 Feet	188 Feet
Above Ground Utility:	903 Feet	807 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	294 Feet	200 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 FACILTIES 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: 37: Nelson fine sandy loam, 0 to 3 percent slopes

NRCS Map Unit Name: 47: Olney fine sandy loam, 1 to 3 percent slopes

NRCS Map Unit Name:

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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:

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):

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WATER RESOURCES

Is this a sensitive area: ☐ No ☒ Yes

Distance to nearest

downgradient surface water feature: 552 Feet

water well: 2688 Feet

Estimated depth to ground water at Oil and Gas Location 28 Feet

Basis for depth to groundwater and sensitive area determination:

The Pond is 552 feet SE.
The Stream is +/-1832' E of DA.

Nearest water well with static water well is permit# 5420, Greeley-Rothe Federal 16-1 which has 28 feet of static water, and approximately +/- 2688 feet away.

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 zone: No

If the location is within a Rule 317B Surface Water Supply Area buffer have all public water supply systems within 15 miles been notified: No

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)
- ☐

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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 reference well is the Greeley-Rothe 34C-2-L. This is a 12 well proposed pad.

The location of the Production Facility depicted in the Location Drawing has been placed at the request of the Surface Owner. In addition, the location for siting the multi-well Production Facility as described provides easy access, consolidated surface impact (bundle with existing KPK facility) and the least disturbance to current and future agricultural operations. The facility is also situated outside of the floodplain and positioned to tie into an oil sale line and gas sales line.

We did notice outside edge of disturbance area, on 10/2/2017 to BU's. However based on drawing no BU's within 1000 feet on cultural sheet. The location drawing notes 2 BU's within 1000 feet of edge of disturbance of the pad, but not within 1000 feet of well or production equipment.

SRC will comply with all MLVT policies and requirements for this pad. For the MLVT, we will plan on 90 days on location.

42,000 bbl capacity
12' high x 160' diameter
Manufacturer is unknown at this time. Potential: PCI Manufacturing, Pinnacle, Southern Frac, or Big Holdings.
SRC will comply with all MLVT policies and requirements for this pad.

SRC anticipates pipeline to this location and all future locations to eliminate trucks on road. Our access permit to location is our notification to Weld County, the city of Greeley, or additional municipality if necessary for approved traffic routes, and traffic control.

All Traffic Plans are approved per our access permit, part of the access permitting process.

The Surface Use Agreement has waivers for Rule 318A.a. & 318A.c. See page 5, Section 8 (a).

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

Signed: _____ Date: _____ Email: eekblad@srcenergy.com

Print Name: Erin Ekblad Title: Manager Regulatory Affair

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
1	Planning	604.c(2)M. Fencing: A meeting with the surface owner will determine a fencing plan. And after discussion with the surface owner, SRC will place permanent fencing around the entire facility at the Greeley-Rothe location .

2	Planning	804. Visual Impacts: All long term facility structures will be painted a color that enables the facilities to blend in with the natural background color of the landscape, as seen from a viewing distance and location typically used by the public. Maintain appearance with garbage clean-up; a trash bin will be located on site to accumulate waste by the personnel drilling the wells. Site will have unused equipment, trash and junk removed immediately.
3	Planning	604.c.(2)N. Control of fire hazards: All material that is considered a fire hazard shall be a minimum of 25' from the wellhead tanks or separators. Electrical equipment shall comply with API IRP 500 and will comply with the current national electrical code. 606A.d. Flammable liquids shall not be stored within fifty (50) feet of the wellbore, except for the fuel in the tanks of operating equipment or supply for injection pumps. Where terrain and location configuration do not permit maintaining this distance, equivalent safety measures should be taken.
4	Traffic control	Traffic Control: 604.c.(2)S. Access Roads: The access road will be constructed to accommodate local emergency vehicles. This road will be maintained for access at all times. Traffic will be routed to minimize local interruption. Dust control measures will also be utilized., which we will use Magnesium Chloride to control dust.
5	Traffic control	RULE 604.c.(2)D: If required by the local government, a traffic plan shall be coordinated with the local jurisdiction prior to commencement of move in and rig up. Any subsequent modification to the traffic plan must be coordinated with the local jurisdiction. Our access permit to location is our notification to Weld County, the city of Greeley, or additional municipality if necessary for approved traffic toutes, and traffic control. All Traffic Plans are approved per our access permit, part of the access permitting process.
6	General Housekeeping	604.c.(2)P. Trash Removal: All trash, debris and material not intrinsic to the operation of the oil and gas facility shall be removed and legally disposed of as applicable.
7	Material Handling and Spill Prevention	604.c.(2)F. Leak Detention Plan: Pumper will visit the location daily and visually inspect all tanks and fittings for leaks. Additionally, monthly documented SPCCP inspections are conducted pursuant to 40 CFR 112.
8	Material Handling and Spill Prevention	604.c.(2)R Tank Specifications: Tanks will be designed, constructed and maintained in accordance with NFPA Code 30. The tanks are visually inspected once a day for issues, and recorded inspections are conducted once a month.
9	Construction	604.c.(3)B. Berm Construction. Tank berms shall be constructed of steel rings with a synthetic or engineered liner and designed to contain 150% of the capacity of the largest tank. All berms will be visually checked periodically to ensure proper working condition. Secondary containment devices shall be sufficiently impervious to contain any spilled or released material. Tertiary containment, such as an earthen berm, will be installed around production facilities.
10	Construction	803 Light sources during all phases of operations will be directed downwards and away from occupied structures where possible. Once the drilling and completion rigs leave the site, lighting usually exists on the entrance/exit doors to the LACT units and Instrument Air skids, all for safety. The light fixtures need to be specified as "shine down" with appropriate shields.
11	Construction	604.c.(2).Q. All guy line anchors left buried for future use shall be identified by a marker of bright color not less than four (4) feet in height and not greater than one (1) foot east of the guy line anchor.
12	Construction	604.c.(2).E. This will be a multi-well pad.
13	Noise mitigation	604.c.(2)A. Sound walls and/or hay bales will be used where necessary to surround the well site during drilling operations. And after discussions with the surface owner and the USR, SRC will place permanent fencing around the entire facility at the Greeley-Rothe location and place temporary sound walls along the east and south side of the well pad.

14	Emissions mitigation	604.c.(2)C.i. 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. The flowback gas shall be sold or shall be captured and combusted with 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, and will be piped to other or permanent equipment and shall be provided with the equipment needed to maintain combustions where non-combustible gases are present. There is a sales line available, SRC plans to turns to sales as soon as possible.
15	Odor mitigation	Rule 805: Oil & gas facilities and equipment shall be operated in such a manner that odors and dust do not constitute a nuisance or hazard to public welfare.
16	Odor mitigation	For the OBM system, the base fluid is D822. The fluid is a refined product that has low VOC and BTEX counts. The BTEX counts are trace levels so this provides a much safer work environment as compared to diesel. The product has a reduction in aromatic compounds when compared to diesel so the odor emitted by the fluid is minimal. The flash point is 85°F higher than diesel which increases the overall safety of the product. During our drilling operations we average 5-6 loads of cuttings hauled off per day to a disposal facility. During the platting process of every location, special consideration is payed to the orientation of the rig with respect to surrounding residential units. When possible, the generators will be placed on the far side of location away from surrounding occupied units. Prevailing wind direction is taken into consideration when planning a location in order to mitigate odor, and noise from being a nuisance to the surrounding stakeholders. When possible, the rig is oriented in a way in which residential units are upwind from the location. Hydrocarbon odors from production facilities are minimize and eliminated by keeping all product inside pipe, separators, tanks, and combustors. Uncommon leaks are discovered by frequent FLIR camera inspections and immediately repaired. All tanks are sealed with best available industry thief hatches and gaskets. Tank vapors are captured with properly sized piping and combustors.
17	Drilling/Completion Operations	604.c.(2).K. Pit level Indicators - For the rig pits (steel tanks) we utilize the Pason PVT (Pit Volume Totalizer) system in conjunction with the EDR (Electronic Depth Recorder) systems on both rigs which incorporate digital recording of pit volumes, settable alarms for gain and loss so we are able to track the pit volumes. These items are standard on a 5K system which is what we are permitting for.
18	Drilling/Completion Operations	604.c.(2).O. Drilling and Completion-All loadlines shall be bullplugged or capped.
19	Drilling/Completion Operations	SRC will comply with all MLVT policies and requirements for this pad.
20	Drilling/Completion Operations	604.c.(2)B.i Operator will be utilizing a closed loop system.
21	Final Reclamation	604.c.(2)T. Within 90 days subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site. Identification of plugged and abandoned wells will be identified pursuant to 319.a.(5)
22	Final Reclamation	604.c.(2).U. Final Reclamation-The operator shall identify the location of the wellbore with a permanent monument as specified in Rule 319.a.(5). The operator shall also inscribe or imbed the well number and date of plugging upon the permanent monument.

Total: 22 comment(s)

Attachment Check List

Att Doc Num	Name
401532305	PRE-APPLICATION NOTIFICATION CERTIFICATION
401532322	WASTE MANAGEMENT PLAN
401532327	SURFACE AGRMT/SURETY
401532389	ACCESS ROAD MAP
401532390	OTHER
401532399	FACILITY LAYOUT DRAWING
401532401	OTHER
401532404	HYDROLOGY MAP
401532438	OTHER
401532451	OTHER
401532489	MULTI-WELL PLAN
401533190	NRCS MAP UNIT DESC
401533193	NRCS MAP UNIT DESC
401534224	LOCATION DRAWING

Total Attach: 14 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)

SUBMITTED

Public Comments

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

SUBMITTED