

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:

401188762

Date Received:

03/09/2017

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:

450030

Expiration Date:

04/17/2020

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: 10311
 Name: SYNERGY RESOURCES CORPORATION
 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@syrginfo.com

RECLAMATION FINANCIAL ASSURANCE

- Plugging and Abandonment Bond Surety ID: 20090043 Gas Facility Surety ID: _____
- Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: Leffler Number: 8-21 Pad
 County: WELD
 Quarter: SENE Section: 21 Township: 6N Range: 66W Meridian: 6 Ground Elevation: 4749

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: 1801 feet FNL from North or South section line
275 feet FEL from East or West section line

Latitude: 40.476206 Longitude: -104.774350

PDOP Reading: 1.8 Date of Measurement: 11/29/2016

Instrument Operator's Name: Rob Wilson

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: Donn Leffler

Phone: _____

Address: 14492 HWY 392

Fax: _____

Address: _____

Email: _____

City: Greeley State: CO Zip: 80631

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 08/16/2016

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:	817 Feet	610 Feet
Building Unit:	817 Feet	610 Feet
High Occupancy Building Unit:	3414 Feet	3122 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	261 Feet	63 Feet
Above Ground Utility:	297 Feet	59 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	275 Feet	77 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: 02/02/2017

- 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 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 and the least disturbance to current and future agricultural operations. The location of the multi well facility provides multiple opportunities for the future development including: agriculture, residential development, and commercial development. In addition, the Great Western permits approved to the North are near Synergy 's proposed multi well facility.

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: Map Unit Symbol 32: Kim Loam 1 to 3 percent slopes

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

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: _____

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: 377 Feet

water well: 614 Feet

Estimated depth to ground water at Oil and Gas Location 5 Feet

Basis for depth to groundwater and sensitive area determination:

Irrigation Pond is within 377 feet SE
Water Well Permit 10925 S-F is within 614 feet SE with Static Water at 5 Feet.
Additionally another Irrigation Pond is within 647 feet West of proposed pad.
Additionally a Water Well Permit 957 R is also within 708 feet.

There was a water well to the west that is closer to the Pad per COGCC website, but on the Colorado Division Water Resources website it says Permit 638 is not an actual permit on the disclaimer. It says the permit was canceled 10/17/1958 last filed history.

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: 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 _____

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 This is a 12 well pad. Reference well for this location is Leffler 26N-23B-L.

Synergy 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 9 (a).

For the MLVT, we will plan on 100 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.
 Synergy will comply with all MLVT policies and requirements for this pad.
 SRC Energy has spent a lot of time working on the layout of this entire facility, including the MLVT. During this process, we had several meetings or conversations with Mr. Leffler who is the owner of both the surface and the building unit in question. During these meetings and conversations with Mr. Leffler it was made clear to SRC Energy that he wanted all equipment including the MLVT as far out of his agricultural areas as possible. SRC Energy performed analysis on placing the MLVT in different areas of the pad. Placing it on the southeast portion would use more surface disturbance directly against the landowner's request, would provide SRC Energy an inadequate amount of space for operations, and would logistically hinder operations due to the MLVT being the furthest point from the access point and therefore this option was rejected. SRC Energy also considered placing the MLVT to the west or southwest but three CIG pipelines running north and south just west of the proposed disturbance area prevents that. Please know that SRC Energy gave this issue a lot of thought and settled on the proposed MLVT location for valid reasons ensuring that the placement conformed with COGCC rules.

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

Signed: _____ Date: 03/09/2017 Email: eekblad@syrginfo.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: Matthew Lee Director of COGCC Date: 4/18/2017

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>
	Operator shall post a copy of the approved Form 2A onsite during all construction, drilling, and completion activities.

Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Planning	Planning : 604.c(2)M. Fencing: A meeting with the surface owner will determine a fencing plan. And after this discussion with surface owner, Synergy and the surface owner agreed that Synergy would not be adding fencing but that Synergy would be installing temporary sound walls at this location.

2	Planning	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.
4	Planning	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.
5	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 consisting of applying mag. chloride will also be utilized.
6	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 routes, and traffic control. All Traffic Plans are approved per our access permit, part of the access permitting process.
7	General Housekeeping	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.
8	Material Handling and Spill Prevention	Material Handling and Spill Prevention: 604.c.(2)F. Leak Detection Plan: Pumper will visit the location daily and visually inspect all tanks and fittings for leaks. Additionally, monthly documented SPCC inspections are conducted pursuant to 40 CFR 112.
9	Material Handling and Spill Prevention	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.
10	Construction	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	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	Construction: 604.c.(2).E. This will be a multi-well pad.
13	Noise mitigation	Noise mitigation: 604.c.(2)A. Temporary Sound Walls will be used where necessary to surround the well site during drilling operations. Per the agreement with the Surface Owner and Synergy, we will have the temporary Sound Walls on the West, South, and East sides.
14	Odor mitigation	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.

15	Odor mitigation	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.
16	Drilling/Completion Operations	Drilling/Completion Operations 604.c.(2).K. 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.
17	Drilling/Completion Operations	Synergy will comply with all MLVT policies and requirements for this pad.
18	Drilling/Completion Operations	MLVT Siting - The natural flow of water at this location is west to east and that will help reduce any potential impacts to the building unit located to the west. A sound wall is being installed between the MLVT and the building unit which can also act as a diverter of the water to the east. SRC Energy has a good relationship with the landowner allowing for quick and easy contact with each other for coordination and response in the event of a release.
19	Final Reclamation	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)
20	Final Reclamation	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: 20 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2478217	FACILITY LAYOUT DRAWING
2478218	CORRESPONDENCE
2478219	RULE 306.E. CERTIFICATION
401188762	FORM 2A SUBMITTED
401216213	SURFACE AGRMT/SURETY
401216932	ACCESS ROAD MAP
401216937	LOCATION PICTURES
401216943	MULTI-WELL PLAN
401216951	OTHER
401216952	OTHER
401216953	LOCATION PICTURES
401216955	LOCATION DRAWING
401220528	WASTE MANAGEMENT PLAN
401227992	NRCS MAP UNIT DESC
401228001	NRCS MAP UNIT DESC
401228053	PRE-APPLICATION NOTIFICATION CERTIFICATION
401228775	HYDROLOGY MAP
401228776	OTHER

Total Attach: 18 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final Review Completed.	04/14/2017
OGLA	Siting Rationale has been reviewed. OGLA task passed.	04/14/2017
OGLA	IN PROCESS - Operator confirmed the Facilities section and revised the Facility Layout Drawing, specified the dust control measure that will be utilized, provided rationale for siting the MLVT within 500 feet of a Building Unit, and provided the Rule 306.e. certification letter. OGLA review complete. Waiting on Siting Rationale review by OGLA Supervisor.	04/10/2017
OGLA	ON HOLD - Requested operator confirm the Facilities section and revise the Facility Layout Drawing if necessary, specify the dust control measure that will be utilized, provide rationale for siting the MLVT within 500 feet of a Building Unit, and provide the Rule 306.e. certification letter. Due by 5/4/17.	04/03/2017
Permit	Permitting Review Complete.	03/20/2017
LGD	This proposed location is in the Agricultural Zoned District of unincorporated Weld County. A Weld Oil Gas Location Assessment (WOGLA) was required for the well pad and associated production facilities. The noticed Building Unit owner and the City of Greeley waived notice and comment in writing. The Director of the Department of Planning Services granted Administrative Approval to WOGLA17-0002 on February 24, 2017. Copies of the WOGLA documents are available from Weld County Government. A building permit is required for production equipment (tank battery, separators, pump jacks, compressors, generators, etc.) from the Department of Planning Services. Troy Swain, Weld County Oil/Gas Liaison and LGD (970) 400-3579.	03/17/2017
Permit	Passed Completeness	03/14/2017
OGLA	Buffer Zone Completeness review passed.	03/10/2017
OGLA	Referred to OGLA Supervisor for Buffer Zone Review.	03/10/2017

Total: 9 comment(s)