

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:

400585260

Date Received:

04/17/2014

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: _____

Submit signed original form. 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:

437999

Expiration Date:

07/05/2017

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: 20203 HIGHWAY 60

City: PLATTEVILLE State: CO Zip: 80651

Contact Information

Name: Craig Rasmuson

Phone: (970) 737-1073

Fax: ()

email: crasmuson@syrginfo.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20090043 Gas Facility Surety ID: _____

Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: SRC MARKHAM PAD Number: _____

County: WELD

Quarter: SE Section: 16 Township: 4N Range: 68W Meridian: 6 Ground Elevation: 4964

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: 2440 feet FNL from North or South section line

2032 feet FWL from East or West section line

Latitude: 40.313924 Longitude: -105.010509

PDOP Reading: 1.3 Date of Measurement: 02/24/2014

Instrument Operator's Name: Aaron A. Demo

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	<u>8</u>	Oil Tanks	<u> </u>	Condensate Tanks	<u>16</u>	Water Tanks	<u>4</u>	Buried Produced Water Vaults	<u> </u>
Drilling Pits	<u> </u>	Production Pits	<u> </u>	Special Purpose Pits	<u> </u>	Multi-Well Pits	<u> </u>	Temporary Large Volume Above Ground Tanks	<u>2</u>
Pump Jacks	<u> </u>	Separators	<u>8</u>	Injection Pumps	<u> </u>	Cavity Pumps	<u> </u>		
Gas or Diesel Motors	<u> </u>	Electric Motors	<u>1</u>	Electric Generators	<u>1</u>	Fuel Tanks	<u> </u>	Gas Compressors	<u>1</u>
Dehydrator Units	<u> </u>	Vapor Recovery Unit	<u> </u>	VOC Combustor	<u>6</u>	Flare	<u> </u>	LACT Unit	<u> </u>
								Pigging Station	<u>1</u>

OTHER FACILITIES

Other Facility Type

Number

<input type="text"/>	<input type="text"/>
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Per Rule 303.b.(3)C, description of all oil, gas, and/or water pipelines:

CONSTRUCTION

Date planned to commence construction: 06/30/2014 Size of disturbed area during construction in acres: 5.80

Estimated date that interim reclamation will begin: 11/30/2014 Size of location after interim reclamation in acres: 2.75

Estimated post-construction ground elevation: 4964

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: Land application

Cutting Disposal: OFFSITE Cuttings Disposal Method: Other

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: K B Markham Farms LLLP

Phone: 970-744-0193

Address: 2464 County Road 46

Fax: _____

Address: _____

Email: _____

City: Berthoud State: CO Zip: 80513-9127

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 04/08/2014

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

Distance to nearest:

Building: 1005 Feet
Building Unit: 1005 Feet
High Occupancy Building Unit: 5280 Feet
Designated Outside Activity Area: 5280 Feet
Public Road: 1854 Feet
Above Ground Utility: 1699 Feet
Railroad: 5280 Feet
Property Line: 71 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.

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.

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: _____

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: Nunn clay loam #42
NRCS Map Unit Name: Wiley-Colby complex #82
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: 02/24/2014
List individual species: Cropland - none at this time.

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: 5280 Feet

water well: 820 Feet

Estimated depth to ground water at Oil and Gas Location 13 Feet

Basis for depth to groundwater and sensitive area determination:

Water Well used Permit # 84772: Showing depth of 120', Static Water Level of 13', Owned by Walter & Henry Zimmerman. Downgrade surface water feature is due East to seasonal stream in the middle of section 15 over a mile 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 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: _____

GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 609

DESIGNATED SETBACK LOCATION EXCEPTIONS

Check all that apply:

- Rule 604.a.(1)A. Exception Zone (within 500' of Building Unit)
- 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

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

Signed: _____ Date: 04/17/2014 Email: paul.gottlob@iptenergyservices.com

Print Name: Paul Gottlob Title: Regulatory/Eng. 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: 7/6/2014

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

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Planning	Multi-well Pads. It is a multi-well pad located in a manner which allows for resource extraction while maintaining the highest distances possible from the offsetting residential areas.
2	Traffic control	Access roads. The access road will be constructed to accommodate local emergency vehicles. This road will be maintained for access at all times.
3	General Housekeeping	Fencing requirements. A permanent fencing plan will be reviewed by the surface owner, & the applicant.
4	General Housekeeping	Removal of surface trash. All trash, debris and material not intrinsic to the operation of the oil and gas facility shall be removed and legally disposed of as is applicable.
5	Material Handling and Spill Prevention	Leak Detection 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.
6	Material Handling and Spill Prevention	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.
7	Material Handling and Spill Prevention	Load-lines. All load-lines shall be bull-plugged or capped.
8	Material Handling and Spill Prevention	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	Noise mitigation	Lighting abatement measures shall be implemented, including the installation lighting shield devices on all of the more conspicuous lights, low density sodium lighting where practicable; and rig shrouding is not believed necessary as this is an industrial area and the only building unit within 1,000' is owned by the operator, however, at its election the operator may install temporary engineering controls consisting of perimeter sound walls shall be used on the location during drilling and completion activities to provide noise relief. Permanent equipment on location shall be muffled to reduce noise, or shall be appropriately buffered.
10	Drilling/Completion Operations	Closed Loop Drilling Systems – Pit Restrictions. Not applicable; a closed-loop system will be used for drilling.

11	Drilling/Completion Operations	Green Completions – Emission Control Systems. 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 flow-back 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 flow-back 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 combustion where non-combustible gases are present.
12	Drilling/Completion Operations	Blowout preventer equipment (“BOPE”). A double ram and annular preventer will be used during drilling. At least the drilling company shall have a valid well blowout prevention certifications.
13	Drilling/Completion Operations	BOPE for well servicing operations. Adequate BOP equipment shall be used. Stabbing valves shall be installed in the event of reverse circulation and shall be prior tested with low and high pressure fluid.
14	Drilling/Completion Operations	Pit level indicators. Not applicable; a closed-loop system will be used and no pits shall be dug.
15	Drilling/Completion Operations	Drill stem tests. Not applicable; no Drill Stem tests are planned.
16	Drilling/Completion Operations	Control of fire hazards. All materials which are considered fire hazards shall be a minimum of 25’ from the wellhead tanks or separators. Electrical equipment shall comply with API RP 500 and will comply with the current national electrical code. An emergency response plan has been generated for this site.
17	Drilling/Completion Operations	Guy line anchors. All guy line anchors shall be brightly marked pursuant to Rule 604.c (2)Q.
18	Final Reclamation	Well site cleared. Within 90-day subsequent to the time of plugging and abandonment of the entire site, superfluous debris and equipment shall be removed from the site.
19	Final Reclamation	Identification of plugged and abandoned wells. P&A’d wells shall be identified pursuant to 319.a.(5).
20	Drilling/Completion Operations	Synergy will comply with June 13, 2014 Policy on the Use of Modular Large Volume Tanks.

Total: 20 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2086287	LOCATION DRAWING
2167801	EXCEPTION LOC WAIVERS
400585260	FORM 2A SUBMITTED
400585794	ACCESS ROAD MAP
400585795	MULTI-WELL PLAN
400585799	HYDROLOGY MAP
400585804	LOCATION PICTURES
400585815	EXCEPTION LOC REQUEST
400585831	HYDROLOGY MAP A, TOPO
400586960	WAIVERS
400591749	WASTE MANAGEMENT PLAN
400592423	NRCS MAP UNIT DESC
400592424	NRCS MAP UNIT DESC

Total Attach: 13 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Final Review	Permitting resolved right to construct, operator committed to compliance with MLVT policy via e-mail. Form 2A OFF HOLD.	7/6/2014 5:49:03 PM
Final Review	Final Review placed ON HOLD: Right to construct based on lease should have minerals beneath developed = YES; request BMPs for MLVT or COA to comply with MLVT Policy.	7/6/2014 1:17:46 PM
Permit	Distance to prop. line is from prod. facility, not wellheads. Exception loc. request not required. State Land Board verified lease stips met per TK. No LGD or public comments. Final Review--passed.	7/4/2014 1:12:06 PM
Permit	Mineral lease map attached to all form 2's. Exception loc waiver for property line attached as per opr. Corrected date of construction from 5/30/14 to 6/30/14 as per opr. Final review complete.	6/12/2014 10:04:08 AM
OGLA	Unchecked the 306.d.(1).A.ii variance request box and waived CDPHE task. Synergy Resources is requesting an exception location, not requesting a variance.	5/4/2014 3:32:09 PM
OGLA	Uploaded new Location Drawing and changed nearest cultural feature distances as provided by IPT.	5/23/2014 8:14:19 AM
Permit	Deleted seven "other" attachments as per opr. Corrected Surface Owner is Fee, as per opr. No SUA or Lease attached as noted in the Exception location request letter. Opr notified.	5/16/2014 10:10:50 AM
Permit	Requested permission to remove seven "Other" attachments that are pictures of verbiage covered in other tabs on the permit. Requested SUA.	5/12/2014 4:06:33 PM
Permit	Passed completeness	4/30/2014 11:16:39 AM
Permit	Return to draft per operator's request.	4/25/2014 8:23:33 AM
Permit	Returned to draft. 8 APDs are not related to this form. Minerals should be State, not Fee. Missing SUA. Minerals in the spacing units will not be produced to the location. Distance to Building is greater than distance to Building Unit. (This is incorrect on the Location Drawing too) No NRCS soil info on Soil and Plant Community tab. No NRCS attachment(s). Exception Location Request letter citing 350' setback is out of date. Needs to be removed. Exception Location Request for 318A.a is really a waiver. It does not need to be on the 2A and should be removed.	4/18/2014 2:26:01 PM

Total: 11 comment(s)