

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:

401158862

Date Received:

03/09/2017

Oil and Gas Location Assessment

New Location Refile Amend Existing Location Location#: 335245

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:

335245

Expiration Date:

05/24/2020

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: 10531

Name: VANGUARD OPERATING LLC

Address: 5847 SAN FELIPE #3000

City: HOUSTON State: TX Zip: 77057

Contact Information

Name: Jack Desmond

Phone: (720) 359-1612

Fax: ()

email: jdesmond@progressivepcs.net

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: _____

Gas Facility Surety ID: _____

Waste Management Surety ID: _____

LOCATION IDENTIFICATION

Name: GGU

Number: 13-28

County: GARFIELD

Quarter: SWSW Section: 28 Township: 6S Range: 91W Meridian: 6 Ground Elevation: 6130

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: 995 feet FSL from North or South section line

552 feet FWL from East or West section line

Latitude: 39.494509 Longitude: -107.566407

PDOP Reading: 1.8 Date of Measurement: 11/15/2016

Instrument Operator's Name: J. Kirkpatrick

DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: OFFSITE Drilling Fluids Disposal Method: Recycle/reuse

Cutting Disposal: ONSITE Cuttings Disposal Method: Beneficial reuse

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: Bureau of Land Management

Phone: 970-876-9000

Address: 2300 River Frontage Road

Fax: 970-876-9090

Address: _____

Email: BLM_CO_SI_CRVFO_Webmail@blm.gov

City: Silt State: CO Zip: 81652

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 10/19/2016

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:	2791 Feet	2742 Feet
Building Unit:	2395 Feet	2325 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:	2937 Feet	2885 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	1937 Feet	1811 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: _____

- 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.

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: 51. Olney loam, 6 to 12 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: 11/16/2016

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: 4490 Feet

water well: 3265 Feet

Estimated depth to ground water at Oil and Gas Location 18 Feet

Basis for depth to groundwater and sensitive area determination:

Sensitive area determination is based on the depth to ground water.
 Nearest downgradient water feature is a freshwater pond located to the north west of the pad on fee land.
 Nearest water well measured to receipt number 0414893 (permit number 203138).
 Depth to ground water is estimated from the static water level of well receipt number 0414893.

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:

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 pad name is changing from GIBSON GULCH UNIT-66S91W28SW to GGU 13-28.

This pad is constructed and has producing wells. The original disturbance is increasing due to the additional 5 wells.

The Federal GGU 23A-28-691 well was used as the reference point for footages, cultural distances and lat/long data listed under the Location Identification data.

Reference Area photos will be submitted as soon as possible via Form 4, Sundry Notice within the 12 month period.

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: jdesmond@progressivepcs.net

Print Name: Jack Desmond 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:  Director of COGCC Date: 5/25/2017

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.

COA Type	Description
	In addition to the notifications required by COGCC listed in the Northwest Notification Policy (Notice of Intent to Construct a New Location, Notice of Intent to Spud Surface Casing, and Notice of Intent to Commence Hydraulic Fracturing Operations) and Rule 316C. COGCC Form 42. FIELD OPERATIONS NOTICE (a. Notice of Intent to Conduct Hydraulic Fracturing Treatment and c. Notice of Construction or Major Change); operator shall notify the COGCC 48 hours prior to pipeline testing (flowlines from wellheads to separators to tanks; and/or any temporary surface lines used for hydraulic stimulation and/or flowback operations) using the Form 42 (as described in Rule 316C.m. Notice of Completion of Form 2/2A Permit Conditions). The appropriate COGCC individuals will automatically be email notified.
	Operator shall pressure test pipelines (flowlines from wellheads to separators to tanks; and any temporary surface lines used for hydraulic stimulation and/or flowback operations) in accordance with Rule 1101.e.(1) prior to putting into initial service any temporary surface or permanent surface/buried pipelines and following any reconfiguration of the pipeline network. All permanent flowlines from wellheads to separators and from the separators to the tank will also be pressure tested annually. Operator will utilize, to the extent practical, all existing access and other public roads, and/or existing pipeline right-of-ways, when placing/routing the surface pipelines. This will reduce surface disturbance and fragmentation of wildlife habitat in the area.

Best Management Practices

No	BMP/COA Type	Description
1	Planning	<ul style="list-style-type: none"> Limit the amount of land disturbed during construction of pad, access road, and facilities.
2	Traffic control	<ul style="list-style-type: none"> Site specific traffic control plans were not required by the county or BLM. Install approved MUTCD traffic control/warning devices before work begins and through the duration of drilling and completion. Reduce visits to well-sites through remote monitoring (i.e. SCADA) and the use of multifunction contractors, where practicable. Pipelines are proposed and include a gas line and two water lines. Water line infrastructure will assist to reduce traffic.
3	General Housekeeping	<ul style="list-style-type: none"> All employees are trained in spill response, good housekeeping, material management practices, and procedures for equipment and container washing annually. Trash would be contained in a trash cage and hauled away to an approved disposal after the completion of drilling operations. All facilities to be painted Shadow Gray (or appropriate/BLM recommended color) to blend into the natural vertical elements. Downcasting lights will be installed on permanent facilities.

4	Wildlife	<ul style="list-style-type: none"> • Reduce visits to well-sites through remote monitoring (i.e. SCADA) and the use of multifunction contractors, where practicable. Install exclusionary device to prevent bird and other wildlife access to equipment stacks, vents and openings. • Establish policies to protect wildlife (e.g. no firearms, no dogs on location, no feeding of wildlife, etc.) • Promptly report spills that could affect wildlife to the Water Quality Control Division of CDPHE and CDOW • Avoid location staging, refueling, and storage areas within 300 feet, of any reservoir, lake, wetland, or natural perennial or seasonal flowing stream or river. <p>INFRASTRUCTURE LAYOUT WILDLIFE PROTECTION MEASURES</p> <ul style="list-style-type: none"> • Implementing fugitive dust control measures • Limit parking to disturbed areas as much as possible <p>DRILLING AND PRODUCTION OPERATION WILDLIFE PROTECTION MEASURES</p> <ul style="list-style-type: none"> • Reduce visits to well-sites through remote monitoring (i.e. SCADA) and the use of multifunction contractors, where practicable. • Exclusionary device to prevent birds and other wildlife access to equipment stacks, vents and openings. • Establish company guidelines to minimize wildlife mortality from vehicle collision on roads. <p>INVASIVE/NON-NATIVE VEGETATION CONTROL</p> <ul style="list-style-type: none"> • Educate employees and contractors about noxious and invasive weed issues. <p>RESTORATION, RECLAMATION AND ABANDONMENT</p> <ul style="list-style-type: none"> • Avoid aggressive non-native grasses and shrubs in mule deer and elk habitat restorations. • Revegetate with seed mixtures that are of the surface owner's preference that are compatible with both livestock and wildlife or BLM approved seed mixes.
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5	Storm Water/Erosion Control	<ul style="list-style-type: none"> • Limit the amount of land disturbed during construction of pad, access road, and facilities. The well pad and access road were designed to minimize erosion. Routine inspections and controls are to be implemented, as necessary. Conduct internal storm water inspections per applicable stormwater regulations. Any excessive precipitation accumulation within containment should be removed as appropriate and disposed of properly. • Utilize diking and other forms of secondary containment around tanks, drums, chemicals, liquids, pits, impoundments, or well pads. • Use drip pans, sumps, or liners where appropriate. • Limit the amount of land disturbed during construction of pad, access road, and facilities • Employ spill response plan (SPCC) for all required facilities. • Properly dispose of any wastes fluids and other materials. <p>MATERIAL HANDLING, ACTIVITIES, PRACTICES AND STORM WATER DIVERSION</p> <ul style="list-style-type: none"> • Secondary containment of tanks, drums, and storage areas is mandatory to prohibit discharges to surface waters. A minimum of 150% capacity required of largest storage tank within a containment area • Material handling, spill prevention procedures and practices will be followed to help prohibit discharges to surface waters. • Proper loading and transportation procedures to be followed for all materials to and from locations <p>EROSION CONTROL</p> <ul style="list-style-type: none"> • Pad and access road to be designed to minimize erosion. • Pad and access road to implement appropriate erosion control devices where necessary to minimize erosion. • Routine inspections of sites and controls to be implemented with additions, repairs, and optimization to occur, as necessary, to minimize erosion. <p>SELF INSPECTION, MAINTENANCE, AND HOUSEKEEPING</p> <ul style="list-style-type: none"> • All employees are trained in spill response, good housekeeping, material management practices, and procedures for equipment and container washing annually. • Conduct internal storm water inspections per applicable stormwater regulations. • Conduct routine informal inspections of all tanks and storage facilities at least weekly • All containment areas are to be inspected weekly or following a heavy rain event. • Any excessive stormwater accumulation within containment should be removed as appropriate and disposed of properly • All structural berms, dikes, and secondary containments will be inspected periodically to ensure they are operating correctly. <p>SPILL RESPONSE</p> <ul style="list-style-type: none"> • Spill response procedures as per the field SPCC Plan. <p>LOCATION PROCEDURES</p> <ul style="list-style-type: none"> • Location to be treated to eliminate weeds and bladed when necessary • CDPHE Stormwater Permit Number: COR-039752
6	Material Handling and Spill Prevention	<ul style="list-style-type: none"> • Vanguard maintains a spill response plan (SPCC) for all facilities. Routine informal inspections of all tanks and storage facilities occur daily as part of the production operations. Tank batteries will be placed within engineered, steel secondary containments with an impervious liner system. These secondary containment systems will be sized to account for 150% of the volume of the tank. The use drip pans, sumps, liners or other BMPs will be utilized where appropriate. Vanguard will implement best management practices to contain any unintentional releases and all E&P waste or other materials will be properly disposed of. <ul style="list-style-type: none"> • Vanguard will ensure that any material that might be deemed a fire hazard will remain no less than twenty-five (25) feet from the wellhead(s), tanks and separator(s). Any electrical equipment installations inside the bermed area will comply with API RP 500 classifications and comply with the current national electrical code as adopted by the State of Colorado.
7	Dust control	<ul style="list-style-type: none"> • During construction and operation, operator will implement dust abatement measures as needed to prevent fugitive dust from vehicular traffic, equipment operations, or wind events.

8	Construction	<ul style="list-style-type: none"> All topsoil will be stripped and segregated following removal of vegetation during construction of the well pad, access roads and pipelines. Roads will be crowned, ditched, surfaced, drained with culverts and/or water dips, and constructed consistent to BLM Gold Book standards. Initial gravel application will be a minimum of 6 inches. Vanguard will provide timely year-round road maintenance and cleanup on the access roads. A regular schedule for maintenance will include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement, and dust abatement.
9	Noise mitigation	<ul style="list-style-type: none"> Mufflers on the rig will be oriented away from the nearest building unit to minimize engine noise. Plumb dump lines into tanks to muffle sound. Rubber cushions in lubricators are used to muffle sound for plunger lift.
10	Emissions mitigation	<ul style="list-style-type: none"> A combustor will be installed for control of associated condensate and produced water tank emissions with 95% control efficiency. Green completion practices to be utilized.
11	Drilling/Completion Operations	<ul style="list-style-type: none"> Lightings will be positioned to downcast during drilling/completion activities. A closed loop drilling system would be employed. Drill cuttings from the wellbore will be directed into lined and bermed surface containments. Any free liquids accumulated in the containment would be removed as soon as practicable. If the well(s) is(are) to be hydraulically stimulated, flowback and stimulation fluids must be sent to tanks, separators, or other containment/filtering equipment before the fluids can be placed into any pipeline or storage vessel located on the well pad; or into tanker trucks for offsite disposal. <p>NOTIFICATIONS</p> <ul style="list-style-type: none"> Proper notifications required by COGCC regulations or policy memos will be adhered to <p>TRENCHES/PITS/TEMPORARY FRAC TANKS</p> <ul style="list-style-type: none"> Drill cuttings from the wellbore will be directed into lined and bermed surface containments. Any free liquids accumulated in the containment would be removed as soon as practicable. Temporary frac tanks installed on location will have proper secondary containment according to SPCC regulations such as either putting a perimeter berm around location or around the frac tanks.
12	Interim Reclamation	<ul style="list-style-type: none"> Facilities are constructed to maximize reclamation success. All disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations or for subsequent drilling operations to be commenced within twelve (12) months, will be reclaimed as early and as nearly as practicable to their original condition or their final land use as designated by the surface owner. Vanguard will adhere to Rule 1003 and all requirements pertaining to interim reclamation.
13	Final Reclamation	<ul style="list-style-type: none"> The wellsite will be cleared of all non-essential equipment within ninety (90) days after all wells associated with the pad have been plugged and abandoned. Vanguard will begin final reclamation activities so that seeding occurs in the optimal growing season. Reclamation is not expected to occur until after the timing limitations end for big game. Vanguard will adhere to Rule 1004 and all requirements pertaining to final reclamation.

Total: 13 comment(s)

Attachment Check List

<u>Att Doc Num</u>	<u>Name</u>
2108151	MULTI-WELL PLAN
401158862	FORM 2A SUBMITTED
401211391	NRCS MAP UNIT DESC
401211392	REFERENCE AREA MAP
401211395	HYDROLOGY MAP
401211396	ACCESS ROAD MAP
401211397	MULTI-WELL PLAN
401211399	LOCATION PICTURES
401214388	CONST. LAYOUT DRAWINGS
401225545	LOCATION DRAWING
401229431	WASTE MANAGEMENT PLAN

Total Attach: 11 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Permit	Final review complete.	05/22/2017
OGLA	Initiated/Completed OGLA Form 2A review on 05-20-17 by Dave Kubeczko; operator submitted BMPs are sufficient; added notification and pipeline testing COAs; passed by CPW on 03-20-17 with operator submitted wildlife BMPs as well as BLM stipulations and COAs acceptable; passed OGLA Form 2A review on 05-20-17 by Dave Kubeczko; operator submitted BMPs are sufficient, notification and pipeline testing COAs.	05/20/2017
Permit	Removed plugging bond due to Fed/Fed lands and notified operator. Preliminary review complete. Ready to pass pending OGLA review and approval.	04/10/2017
LGD	Pass, KHW. As a Federal surface location, Garfield County land use change permit requirements for locations with greater than 5,000 barrels of total storage capacity (pits/tanks) do not apply.	03/24/2017
DOW	This permit application is to expand and drill additional wells on an existing FED/FED location. The BMPs supplied by the operator and the Bureau of Land Managements COAs and lease stips are adequate to avoid and minimize impacts to wildlife resulting from the proposed activity. By: Taylor Elm, 3/20/2017, 15:50	03/20/2017
Permit	Passed Completeness	03/14/2017

Total: 6 comment(s)