

State of Colorado
Oil and Gas Conservation Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

Document Number:

401716543

Date Received:

07/26/2018

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:

457825

Expiration Date:

10/07/2021☒ 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: 10707

Name: MEADOW DEEP LLC

Address: 17671 IRVINE BLVD SUITE 217

City: TUSTIN State: CA Zip: 92780

Contact Information

Name: Mike Deutsch

Phone: (505) 4668120

Fax: (505) 4669682

email: mike@permitswest.com

FINANCIAL ASSURANCE

- ☒ Plugging and Abandonment Bond Surety ID (Rule 706): 20180098 ☐ Gas Facility Surety ID (Rule 711): _____
- ☐ Waste Management Surety ID (Rule 704): _____

LOCATION IDENTIFICATION

Name: Cottonwood Number: 1

County: BACA

QuarterQuarter: NENW Section: 28 Township: 34S Range: 46W Meridian: 6 Ground Elevation: 4353

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: 660 feet FNL from North or South section line

1980 feet FWL from East or West section line

Latitude: 37.059948 Longitude: -102.608547

PDOP Reading: 6.0 Date of Measurement: 10/23/2017

Instrument Operator's Name: Gary L. Terry

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>1</u>	Oil Tanks*	<u>1</u>	Condensate Tanks*	<u> </u>	Water Tanks*	<u>1</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>	Modular Large Volume Tanks	<u> </u>
Pump Jacks	<u>1</u>	Separators*	<u>1</u>	Injection Pumps*	<u> </u>	Cavity Pumps*	<u> </u>	Gas Compressors*	<u> </u>
Gas or Diesel Motors*	<u>1</u>	Electric Motors	<u> </u>	Electric Generators*	<u> </u>	Fuel Tanks*	<u> </u>	LACT Unit*	<u> </u>
Dehydrator Units*	<u>1</u>	Vapor Recovery Unit*	<u> </u>	VOC Combustor*	<u> </u>	Flare*	<u>1</u>	Pigging Station*	<u> </u>

OTHER FACILITIES*

Other Facility Type

Number

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:

No gas pipeline will be required at this time as produced gas will be used to power lease operations.

CONSTRUCTION

Date planned to commence construction: 10/06/2018 Size of disturbed area during construction in acres: 2.33
Estimated date that interim reclamation will begin: 12/06/2018 Size of location after interim reclamation in acres: 1.40
Estimated post-construction ground elevation: 4352

DRILLING PROGRAM

Will a closed loop system be used for drilling fluids: Yes
Is H₂S anticipated? No
Will salt sections be encountered during drilling: Yes
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: Commercial Disposal
Cutting Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Haul to Seward County Landfill in Liberal, KS. KDHE Special Waste Disposal Authorization PERMIT Number 18-0338.

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: U.S. Forest Service

Phone: 7195531400

Address: 2840 Kachina Dr.

Fax: _____

Address: _____

Email: shilohmbenton@fs.fed.us

City: Pueblo State: CO Zip: 81008

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: Surface Use Agreement

Surface damage assurance if no agreement is in place: _____ Surface Surety ID: _____

Date of Rule 306 surface owner consultation _____

CURRENT AND FUTURE LAND USE

Current Land Use (Check all that apply):

Crop Land: ☐ Irrigated ☐ Dry land ☐ Improved Pasture ☐ Hay Meadow ☐ CRP
Non-Crop Land: ☒ Rangeland ☐ Timber ☐ Recreational ☐ Other (describe): _____
Subdivided: ☐ Industrial ☐ Commercial ☐ Residential

Future Land Use (Check all that apply):

Crop Land: ☐ Irrigated ☐ Dry land ☐ Improved Pasture ☐ Hay Meadow ☐ CRP
Non-Crop Land: ☒ Rangeland ☐ Timber ☐ Recreational ☐ Other (describe): _____
Subdivided: ☐ Industrial ☐ Commercial ☐ Residential

CULTURAL DISTANCE INFORMATION

Provide the distance to the nearest cultural feature as measured from Wells or Production Facilities onsite.

	From WELL	From PRODUCTION FACILITY
Building:	5280 Feet	5280 Feet
Building Unit:	5280 Feet	5280 Feet
High Occupancy Building Unit:	5280 Feet	5280 Feet
Designated Outside Activity Area:	5280 Feet	5280 Feet
Public Road:	692 Feet	550 Feet
Above Ground Utility:	5280 Feet	5280 Feet
Railroad:	5280 Feet	5280 Feet
Property Line:	5280 Feet	5280 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: Tn - Tivoli sand
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: 10/16/2017

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: 2380 Feet

water well: 2475 Feet

Estimated depth to ground water at Oil and Gas Location 50 Feet

Basis for depth to groundwater and sensitive area determination:

Historic well logs
Location lies within the Southern High Plains Designated Basin

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

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 10/25/2018

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

There are no surface water features within 1000 feet of the oil and gas location.

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

Signed: _____ Date: 07/26/2018 Email: mike@permitswest.com

Print Name: Mike Deutsch Title: Permit Agent

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: 10/8/2018

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
	Although the Surface Plan (Attachment Document #401716583) indicates that a Reserve Pit is planned, this Location lies within a Sensitive Area and Pits shall not be constructed or used on or around the Location for the purpose of this Oil and Gas Location.
	Green Completions - Test separators and associated flow lines, sand traps and emission control systems shall be installed on-site to accommodate green completions techniques. When commercial quantities of salable quality gas are achieved at each well, the gas shall be immediately directed to a sales line or shut in and conserved. If a sales line is unavailable or other conditions prevent placing the gas into a sales line, the operator shall not produce the wells without an approved variance per Rule 805.b.(3)C.
CPW-Wildlife - Minimization- LESSER PRAIRIE CHICKEN	The operator agrees to limit noise emissions from new oil and gas operations to 10dBA above pre-development background levels measured at dawn (based on default pre-development background levels of 20-22 dBA) within 2.2 miles of lesser prairie chicken leks.
CPW-Wildlife - Minimization- LESSER PRAIRIE CHICKEN	The operator agrees to install raptor perch deterrents on equipment, fences, cross arms and pole tops in lesser prairie chicken habitat
CPW-Wildlife - Minimization- LESSER PRAIRIE CHICKEN	The operator agrees to make use of tanks and other facilities designed such that they do not provide perches or nest substrates for raptors, crows and ravens
CPW-Wildlife - Minimization- LESSER PRAIRIE CHICKEN	The operator agrees to conduct oil and gas operations outside the period between March 1 and July 15
CPW-Wildlife - Mitigation- LESSER PRAIRIE CHICKEN	The State of Colorado is a partner in the WAFWA Lesser Prairie Chicken Rangewide Conservation Plan. The operator agrees to enroll this site in the WAFWA Lesser Prairie Chicken Rangewide Plan Mitigation Framework.
CPW-Wildlife - Minimization- LESSER PRAIRIE CHICKEN	The operator and its contractors agree to restrict well site visitations to portions of the day between 9:00 a.m. and 4:00 p.m. during the leking, nesting and brood rearing seasons (March 15 to June 15)

Best Management Practices

No	BMP/COA Type	Description
1	CPW-Wildlife - Mitigation- LESSER PRAIRIE CHICKEN	The State of Colorado is a partner in the WAFWA Lesser Prairie Chicken Rangewide Conservation Plan. The operator agrees to enroll this site in the WAFWA Lesser Prairie Chicken Rangewide Plan Mitigation Framework.

Attachment Check List

Att Doc Num	Name
1010499	CORRESPONDENCE
1010501	NRCS MAP UNIT DESC
401716543	FORM 2A SUBMITTED
401716583	SURFACE PLAN
401716584	SURFACE AGRMT/SURETY
401725932	SURFACE AGRMT/SURETY
401731636	LOCATION PICTURES
401731637	REFERENCE AREA PICTURES
401731638	REFERENCE AREA MAP
401736335	ACCESS ROAD MAP
401736513	LOCATION DRAWING

Total Attach: 11 Files

General Comments

User Group	Comment	Comment Date
Permit	Final Review Completed.	10/05/2018

Permit	<p>Removed surface damage assurance and surety ID as these are not applicable.</p> <p>Per phone conversation with operator 10/5/2018, corrected distance from well to nearest public road to 692' to reflect related Form 2 and from production facility to nearest public road to 550' (distance measured from FR 2484B to NW corner of pad where an oil tank is planned to be located). Note that this forest road is not on the COGIS map but does exist on the USFS maps and is confirmed as a public road.</p>	10/05/2018
OGLA	<p>Page 2, Section 4 of the Surface Plan (Attachment Document #401716583) indicates that "Excess gas will be temporarily vented until production levels are determined and gas pipeline options can be explored." Please note that venting of saleable quality gas is not in compliance with the Colorado Oil and Gas Conservation Commission Rules.</p> <p>Removed "Excess gas will be temporarily vented until production levels are determined and gas pipeline options can be explored," from the Pipeline Section.</p>	10/03/2018
DOW	<p>CPW met with representatives of the US Forest Service, the operator, and COGCC in October of 2017 at the proposed site for the Cottonwood 1 well for Meadow Deep LLC. The location is within the mapped focal area for lesser prairie-chicken conservation in Colorado. Options for avoiding, minimizing, and mitigating impacts to lesser prairie-chicken habitat at the Comanche Grasslands were discussed at this meeting. After review of the submitted Form 2A and supporting documents CPW requested that the following BMPs be added to the permit as Conditions of Approval.</p> <ol style="list-style-type: none"> 1. The State of Colorado is a partner in the WAFWA Lesser Prairie Chicken Range-wide Conservation Plan. The operator agrees to enroll this site in the WAFWA Lesser Prairie Chicken Range-Wide Plan Mitigation Framework. 2. The operator agrees to conduct oil and gas operations outside the period between March 1 and July 15. 3. The operator and its contractors agree to restrict well site visitations to portions of the day between 9:00 a.m. and 4:00 p.m. during the lekking season (March 15 to June 15). 4. The operator agrees to make use of tanks and other facilities designed such that they do not provide perches or nest substrates for raptors, crows and ravens. 5. The operator agrees to install raptor perch deterrents on equipment, fences, cross arms and pole tops in lesser prairie chicken habitat. 6. The operator agrees to limit noise emissions from new oil and gas operations to 10 dBA above pre-development background levels measured at dawn (based on default pre-development background levels of 20-22 dBA) within 2.2 miles of lesser prairie chicken leks. <p>On September 28, 2018 CPW was informed that John Linn of the US Forest Service (surface owner), District Ranger for the Comanche National Grassland, provided verbal concurrence to COGCC to include the CPW recommended BMPs as conditions of approval.</p>	10/01/2018
OGLA	Received verbal concurrence from John Linn, District Ranger for the Comanche National Grassland, on Friday September 28, 2018 at 11:32 AM, agreeing with the Colorado Parks and Wildlife, Conditions of Approval.	10/01/2018
OGLA	<p>Soil Unit is incorrect. Changed the Soil Unit to Tn - Tivoli sand.</p> <p>Changed Sensitive Area to YES as the Location lies within the Southern High Plains Designated Basin.</p> <p>Changed distance to the nearest surface water feature to 2380 feet based on the presence of an intermittent stream located to the east of the proposed Location.</p>	09/18/2018
Permit	Passed Completeness.	08/22/2018
Permit	Returned to draft per operator request.	08/16/2018

Permit	<p>Returned to draft:</p> <p>Separate attachments are required on the form 2A for the following.</p> <p>Location Pictures. One from each cardinal direction with required labels</p> <p>Location Drawing</p> <p>Access Road Map</p> <p>Reference Area Map</p> <p>Reference Area Pictures</p> <p>NRCS Map Unit description</p> <p>Hydrology Map (or a comment in the submit tab state there are no surface water features withing 1000' buffer)</p> <p>Pipeline description is required on the facilities page.</p> <p>Water sampling rule should be selected 609 on the water resources tab.</p>	08/02/2018
CPW-Wildlife - Mitigation- LESSER PRAIRIE CHICKEN	<p>Operator proposed the following BMP:</p> <p>The State of Colorado is a partner in the WAFWA Lesser Prairie Chicken Rangewide Conservation Plan. The operator agrees to enroll this site in the WAFWA Lesser Prairie Chicken Rangewide Plan Mitigation Framework.</p> <p>CPW commented as follows:</p> <p>BMP Type: Based on the operator site plan this should be catagorized as a Wildlife-Mitigation BMP and not a Wildlife-Avoidance BMP.</p> <p>CPW modified text: The State of Colorado is a partner in the WAFWA Lesser Prairie Chicken Rangewide Conservation Plan. The operator agrees to enroll this site in the WAFWA Lesser Prairie Chicken Rangewide Plan Mitigation Framework.</p>	Stamp Upon Approval

Total: 10 comment(s)