

FORM  
2

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:

400568103

APPLICATION FOR PERMIT TO:

☒ Drill ☐ Deepen ☐ Re-enter ☐ Recomplete and Operate

TYPE OF WELL OIL ☐ GAS ☒ COALBED ☐ OTHER CO2

Refiling ☐

Date Received:

03/17/2014

ZONE TYPE SINGLE ZONE ☒ MULTIPLE ZONES ☐ COMMINGLE ZONES ☐

Sidetrack ☐

Well Name: Sheep Mountain Unit

Well Number: 1-12-B

Name of Operator: OXY USA INC

COGCC Operator Number: 66561

Address: PO BOX 27757

City: HOUSTON

State: TX

Zip: 77227

Contact Name: Kiki Lockett

Phone: (713)2157643

Fax: (713)9854962

Email: kiki\_lockett@oxy.com

RECLAMATION FINANCIAL ASSURANCE

Plugging and Abandonment Bond Surety ID: 20060139

WELL LOCATION INFORMATION

QtrQtr: SESW Sec: 1 Twp: 28S Rng: 70W Meridian: 6

Latitude: 37.636880

Longitude: -105.171290

Footage at Surface: 391 feet FNL/FSL FSL 2160 feet FEL/FWL FWL

Field Name: SHEEP MOUNTAIN

Field Number: 77230

Ground Elevation: 8647

County: HUERFANO

GPS Data:

Date of Measurement: 12/05/2013 PDOP Reading: 2.3 Instrument Operator's Name: S. Selin

If well is ☒ Directional ☐ Horizontal (highly deviated) submit deviated drilling plan.

Footage at Top of Prod Zone: FNL/FSL FEL/FWL Bottom Hole: FNL/FSL FEL/FWL  
340 FNL 2637 FEL 2519 FNL 1230 FEL  
Sec: 12 Twp: 28S Rng: 70W Sec: 12 Twp: 28S Rng: 70W

LOCATION SURFACE & MINERALS & RIGHT TO CONSTRUCT

Surface Ownership: ☒ Fee ☐ State ☐ Federal ☐ Indian

The Surface Owner is: ☒ is the mineral owner beneath the location.

(check all that apply)

☒ 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 by this Well: Yes

The right to construct the Oil and Gas Location is granted by: oil and gas lease

Surface damage assurance if no agreement is in place:

Surface Surety ID:

## LEASE INFORMATION

Using standard QtrQtr, Sec, Twp, Rng format, describe one entire mineral lease that will be produced by this well (Describe lease beneath surface location if produced. Attach separate description page or map if necessary.)

Township 28 South - Range 70 West, 6th P.M.  
Section 12: NW/4, W/2 SW/4; Section 1: Lot 4 (45.60 acres), SW1/4NW1/4, SW1/4  
and lands in other sections.

Total Acres in Described Lease: 871 Described Mineral Lease is: ☒ Fee ☐ State ☐ Federal ☐ Indian

Federal or State Lease # \_\_\_\_\_

Distance from Completed Portion of Wellbore to Nearest Lease Line of described lease: \_\_\_\_\_ Feet

## CULTURAL DISTANCE INFORMATION

Distance to nearest:

Building: 5280 Feet  
Building Unit: 5280 Feet  
High Occupancy Building Unit: 5280 Feet  
Designated Outside Activity Area: 5280 Feet  
Public Road: 679 Feet  
Above Ground Utility: 4337 Feet  
Railroad: 5280 Feet  
Property Line: 494 Feet

### INSTRUCTIONS:

- All measurements shall be provided from center of the Proposed Well to nearest of each cultural feature as described in Rule 303.a.(5).
- 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: \_\_\_\_\_

## SPACING and UNIT INFORMATION

Distance from Completed Portion of Wellbore to Nearest Wellbore Permitted or Completed in the same formation: 1575 Feet

Distance from Completed Portion of Wellbore to Nearest Unit Boundary 1230 Feet (Enter 5280 for distance greater than 1 mile.)

Federal or State Unit Name (if appl): Sheep Mountain Unit Number: 047683X

## SPACING & FORMATIONS COMMENTS

## OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
DAKOTA	DKTA			
ENTRADA	ENRD			

## DRILLING PROGRAM

Proposed Total Measured Depth: 8617 Feet

Distance to nearest permitted or existing wellbore penetrating objective formation: 1575 Feet (Including plugged wells)

Will a closed-loop drilling system be used? Yes

Is H<sub>2</sub>S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No (If Yes, attach an H<sub>2</sub>S Drilling Operations Plan)

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? No

Will oil based drilling fluids be used? Yes

BOP Equipment Type: ☒ Annular Preventor ☒ Double Ram ☒ Rotating Head ☐ None

## GROUNDWATER BASELINE SAMPLING AND MONITORING AND WATER WELL SAMPLING

Water well sampling required per Rule 609

## DRILLING WASTE MANAGEMENT PROGRAM

Drilling Fluids Disposal: ONSITE Drilling Fluids Disposal Methods: Recycle/reuse

Cuttings Disposal: OFFSITE Cuttings Disposal Method: Commercial Disposal

Other Disposal Description:

Oxy has a cuttings disposal plan.  
Drilling fluids will be reused at all four locations.

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: \_\_\_\_\_ or Document Number: \_\_\_\_\_

## CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
SURF	17+1/2	13+3/8	54.5	0	1400	1190	1400	0
1ST	12+1/4	9+5/8	36	0	5800	1250	5800	0
1ST LINER	8+3/4	7	26	5500	8617	335	8617	5500

☒ Conductor Casing is NOT planned

## 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)

## GREATER WATTENBERG AREA LOCATION EXCEPTIONS

Check all that apply:

- ☐ Rule 318A.a. Exception Location (GWA Windows).
- ☐ Rule 318A.c. Exception Location (GWA Twinning).

## RULE 502.b VARIANCE REQUEST

- ☐ Rule 502.b. Variance Request from COGCC Rule or Spacing Order Number \_\_\_\_\_

## OTHER LOCATION EXCEPTIONS

Check all that apply:

- ☐ Rule 318.c. Exception Location from Rule or Spacing Order Number \_\_\_\_\_
- ☐ Rule 603.a.(2) Exception Location (Property Line Setback).

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

Oxy is proposing to drill a new CO2 well. The new well will tie-in to the existing pipeline located 580' to the NW. The pad lies on private surface and the surface owner consultation meeting occurred on November 21, 2013 with David Woest, Land Team Leader, from Oxy's Land Department.

The CPW pre-consultation meeting occurred on October 31, 2013 with Al Trujillo and he granted an exception to the bighorn sheep and elk production area drilling restrictions.

The dry pond on the plat Location Drawing is utilized for capturing rainwater and stormwater runoff. Oxy will provide approximate housing for essential personnel in order to conduct safe, efficient drilling operations at this well site.

Reference pictures will be provided during next growing season.

If you have any questions or comments, I can be reached at 713-215-7643 or kiki\_lockett@oxy.com

This application is in a Comprehensive Drilling Plan \_\_\_\_\_ CDP #: \_\_\_\_\_

Location ID: \_\_\_\_\_

Is this application being submitted with an Oil and Gas Location Assessment application? \_\_\_\_\_ Yes


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

Signed: \_\_\_\_\_ Print Name: Kiki Lockett

Title: Regulatory Analyst Date: 3/17/2014 Email: kiki\_lockett@oxy.com

Operator must have a valid water right or permit allowing for industrial use or purchased water from a seller that has a valid water right or permit allowing for industrial use, otherwise an application for a change in type of use is required under Colorado law. Operator must also use the water in the location set forth in the water right decree or well permit, otherwise an application for a change in place of use is required under Colorado law. Section 37-92-103(5), C.R.S. (2011).

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: 5/15/2014

Expiration Date: 05/14/2016

### API NUMBER

05 055 06316 00

## Conditions Of Approval

All representations, stipulations and conditions of approval stated in the Form 2A for this location shall constitute representations, stipulations and conditions of approval for this Form 2 Permit-to-Drill and are enforceable to the same extent as all other representations, stipulations and conditions of approval stated in this Permit-to-Drill.

<u>COA Type</u>	<u>Description</u>
	Open hole resistivity and gamma logs shall be run to describe the stratigraphy of the entire well bore and to adequately verify the setting depth of surface casing and aquifer coverage. On a multi-well pad, these open hole logs are only required on one of the first wells drilled on the pad and the Drilling Completion Report - Form 5 for every well on the pad shall identify which well was logged.
	1) Provide 48 hour notice prior to spud via electronic Form 42. 2) Do not use oil base mud until after surface casing is set and then use closed loop system. 3) Ensure cement coverage to 200' above Dakota. Verify coverage with cement bond log. 4) If dry hole set the following plugs: 40 sks cement 50' above the Entrada, 40 sks cement 50' above the Dakota, 90 sks cement from 50' below to 50' above surface casing shoe, 40 sks cement at top of surface casing, cut casing 4-ft below GL, weld on plate, 5 sks cement in rat hole and mouse hole. 5) Run and submit Directional Survey from TD to base of surface casing.

## Best Management Practices

<u>No</u>	<u>BMP/COA Type</u>	<u>Description</u>
1	Wildlife	<p>Sensitive Wildlife Habitat: Elk Production Area and Bighorn Sheep</p> <ul style="list-style-type: none"> <li>• Consult with CPW to identify locations of elk production areas and bighorn sheep production areas. Map all seasonal habitats using CPW habitat selection models as they become available.</li> <li>• After drilling and completions activities reduce visits to well-sites through remote monitoring (i.e. SCADA) and the use of multi-function contractors.</li> <li>• Schedule, as best as possible, well site visitations to portions of the day between 8:00 a.m. and 3:00 p.m. between November 1 through April 15 in Bighorn Sheep areas.</li> <li>• Schedule, as best as possible, well site visitations to portions of the day between 8:00 a.m. and 3:00 p.m. between May 15 through June 30 in elk production areas.</li> <li>• Establish company guidelines to minimize wildlife mortality from vehicle collisions on roads.</li> <li>• Implement the species appropriate Infrastructure Layout and Drilling and Production Operations Wildlife Protection Measures found in Section II D. of the CPW Wildlife BMP document as follows:               <ul style="list-style-type: none"> <li>• Section II D. DRILLING AND PRODUCTION OPERATIONS WILDLIFE PROTECTION MEASURES: The purpose of these measures is to reduce disturbance on the actual drill site and the surrounding area, to reduce direct conflict with wildlife and hunters, and to prevent wildlife access to equipment.                   <ol style="list-style-type: none"> <li>1. Use centralized hydraulic fracturing operations.</li> <li>2. Where possible, transport water through centralized pipeline systems rather than by trucking.</li> <li>3. Where possible, locate pipeline systems under existing roadways, or roadways that are planned for development.</li> <li>4. Maximize use of state-of-the-art drilling technology (e.g., high efficiency rigs, coiled-tubing unit rigs, closed-loop or pitless drilling, etc.) to minimize disturbance.</li> <li>5. Conduct well completions with drilling operations to limit the number of rig moves and traffic.</li> <li>6. Install exclusionary devices to prevent bird and other wildlife access to equipment stacks, vents and openings.</li> </ol> </li> <li>• Minimize surface disturbance and fragmentation of elk and bighorn sheep habitat through use of the smallest facility footprints possible, use of multiple well pads, clustering of roads and pipelines, and the widest possible spacing of surface facilities.</li> <li>• Remove all unnecessary infrastructure.</li> <li>• Treat waste water pits and any associated pit containing water that provides a</li> </ul> </li> </ul>

suitable medium for breeding mosquitoes with Bti (*Bacillus thuringiensis* v. *israelensis*) or take other effective action to control mosquito larvae that may spread West Nile Virus to wildlife, especially grouse.

- In order to prevent wildlife from accessing the temporary drilling pits, pits will be contained by a 4-foot high fence. Further, while the pit is not in use, flagging will be placed over the pit to prevent birds from entering the pit.
- Implement the species appropriate reclamation guidelines found in Section II G. of the CPW Wildlife BMP document.
- Section II G. RESTORATION, RECLAMATION AND ABANDONMENT: The purpose of these measures is to restore disturbed sites to their pre-development conditions, using native vegetation that can be used by the indigenous wildlife. Develop a reclamation plan in consultation with CPW, NRCS, and the land owner or land management agency that incorporates wildlife species-specific goals and that defines reclamation performance standards, including the following components:

1. Seed
  - a. Use only certified weed-free native seed in seed mixes, unless use of non-native plant materials is recommended by CPW.
  - b. Use locally adapted seed whenever available, especially for species which have wide geographic ranges and much genetic variation (e.g., big sagebrush (*Artemisia tridentata*), antelope bitterbrush (*Purshia tridentata*), etc.).
  - c. Where more than one ecotype of a given species is available and potentially adapted to the site, include more than one ecotype per species in the seed mix.
  - d. Use appropriately diverse reclamation seed mixes that mirror an appropriate reference area for the site being reclaimed (see also species-specific recommendations).
  - e. Conduct seeding in a manner that ensures that seedbed preparation and planting techniques are targeted toward the varied needs of grasses, forbs and shrubs (e.g., seed forbs and shrubs separately from grasses, broadcast big sagebrush but drill grasses, etc.).
  - f. Emphasize bunchgrass over sod-forming grasses in seed mixes in order to provide more effective wildlife cover and to facilitate forb and shrub establishment.
  - g. Seed immediately after recontouring and spreading topsoil. Spread topsoil and conduct seeding during optimal periods for seed germination and establishment. Use of the same contractor for re-contouring land as used for seeding is often the most effective approach.
  - h. Do not include aggressive, non-native grasses (e.g., intermediate wheatgrass, pubescent wheatgrass, crested wheatgrass, smooth brome, etc.) in reclamation seed mixes. Site specific exceptions may be considered.
  - i. Distribute quick germinating site adapted native seed or sterile non-native seed for interim reclamation on cut and fill slopes and topsoil piles.
  - j. Plan for reclamation failure and be prepared to repeat seeding as necessary to meet vegetation cover, composition, and diversity standards.
2. Vegetative Cover Standard
  - a. Choose reference areas as goals for reclamation that have high wildlife value, with attributes such a diverse and productive understory of vegetation, productive and palatable shrubs, and a high prevalence of native species.
  - b. Establish vegetation with total perennial non-invasive plant cover of at least eighty (80) percent of pre-disturbance or reference area levels.
  - c. Establish vegetation with plant diversity of non-invasive species which is at least half that of pre-disturbance or reference area levels. Quantify diversity of vegetation using a metric that considers only species with at least 3 percent relative plant cover.
  - d. Observe and maintain a performance standard for reclamation success characterized by the establishment of a self-sustaining, vigorous, diverse, locally appropriate plant community on the site, with a density sufficient to control erosion and non-native plant invasion and diversity sufficient to allow for normal plant community development.
3. Timing
  - a. Use early and effective reclamation techniques, including interim reclamation to accelerate return of disturbed areas for use by wildlife.
  - b. Remove all unnecessary infrastructure.
  - c. Close and reclaim roads not necessary for development immediately, including removing all bridges and culverts and recontouring/reclaiming all stream crossings.
  - d. Reclaim reserve pits as quickly as possible after drilling and ensure that pit contents do not contaminate soil.
  - e. Remediate hydrocarbon spills on disturbed areas prior to reclamation.

		<p>f. Reclaim sites during optimum seasons (e.g. late fall/early winter or early spring).</p> <p>g. Complete final reclamation activities so that seeding occurs during the first optimal season following plugging and abandonment of oil and gas wells.</p>
2	Interim Reclamation	<p>4. Interim reclamation</p> <p>a. Use a variety of native grasses and forbs to establish effective, interim reclamation on all disturbed areas (e.g., road shoulders and borrow areas), including disturbed areas where additional future ground disturbance is expected to occur.</p> <p>b. Oxy will make a good-faith effort to perform interim reclamation to final reclamation species composition and establishment standards.</p> <p>c. Perform "interim" reclamation on all disturbed areas not needed for active support of production operations.</p> <p>5. Riparian areas (none associated with this pad or associated access roads and pipelines)</p> <p>a. Replace all riparian vegetation removed during development at a rate of at least 3:1.</p> <p>b. Restore both form and function of impacted wetlands and riparian areas and mitigate erosion.</p> <p>6. Disposal</p> <p>a. Remove well pad and road surface materials that are incompatible with post-production land use and re-vegetation requirements.</p> <p>b. Remove and properly dispose of degraded silt fencing and erosion control materials after their utility has expired.</p> <p>c. Remove and properly dispose of pit contents where contamination of surface water, groundwater, or soil by pit contents cannot be effectively prevented.</p> <p>7. Establishing reclaimed areas</p> <p>a. Apply certified weed free mulch and crimp or tacyfy to remain in place to reclaim areas for seed preservation and moisture retention.</p> <p>b. Utilize staked soil retention blankets for erosion control and reclamation of large surface areas with 3:1 or steeper slopes. Avoid use of plastic blanket materials, known to cause mortality of snakes.</p> <p>c. Control weeds in areas surrounding reclamation areas in order to reduce weed competition.</p> <p>d. Educate employees and contractors about weed issues.</p> <ul style="list-style-type: none"> <li>• Use early and effective reclamation techniques, including an aggressive interim reclamation program, to return habitat to use by greater sage-grouse as quickly as possible.</li> <li>• Gate single-purpose roads and restrict general public access to reduce traffic disruptions to wildlife.</li> <li>• Close and immediately reclaim all roads that are redundant, not used regularly, or have been abandoned to the maximum extent possible to minimize disturbance and habitat fragmentation.</li> <li>• Avoid aggressive non-native grasses and shrubs in mule deer and elk habitat restoration.</li> <li>• Reclaim mule deer and elk habitats with native shrubs, grasses, and forbs appropriate to the ecological site disturbed.</li> <li>• Restore disturbed sagebrush sites with the appropriate sagebrush species or subspecies on disturbed sagebrush sites. Use locally collected seed for reseeding where possible.</li> </ul>

Total: 2 comment(s)

### **Attachment Check List**

<b>Att Doc Num</b>	<b>Name</b>
2519024	WELL LOCATION PLAT
2519105	DRILLING PLAN
2519106	DEVIATED DRILLING PLAN
400568103	FORM 2 SUBMITTED
400568370	ACCESS ROAD MAP
400579792	DIRECTIONAL DATA

Total Attach: 6 Files

## General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Engineer	Received new directional and drilling plans. 9-5/8" is 5800'	5/14/2014 1:02:06 PM
Engineer	Asked operator to confirm the intermediate 9-5/8" casing depth is 5800 or 3300. Directional plan 3300. different from permit 5800 from drilling plan tables 5800 except on point 8: 3300. TD 8617 or 8628. Received answer that the depth is 8617.	5/13/2014 4:56:36 PM
Permit	Final review completed; no LGD or public comment received.	5/12/2014 2:31:47 PM
Permit	Operator revised well location plat. Waiting on deviated drilling plan and directional data. Operator provided deviated drilling info.	3/25/2014 12:07:37 PM
Permit	Top of production footage and bottom hole footage incorrect. Revised by operator.	3/19/2014 7:24:32 AM
Permit	Need new deviated drilling plan showing new bottom hole and associated directional data template.	3/19/2014 7:05:22 AM
Permit	Bottom hole location is still in leased Federal minerals. Waiting on new well location plat. Operator is revising location to be outside the Federal mineral lease.	3/19/2014 6:40:05 AM

Total: 7 comment(s)