

FORM 2A Rev 04/01

State of Colorado Oil and Gas Conservation Commission 1120 Lincoln Street, Suite 801, Denver, Colorado 80205 Phone: (303) 894-2100 Fax: (303) 894-2109



Table with 4 columns: DE, ET, OE, ES

Document Number: 400153914

Oil and Gas Location Assessment

[X] New Location [ ] Amend Existing Location Location#: \_\_\_\_\_

Submit original plus one copy. This form is to be submitted to the COGCC prior to any ground disturbance activity associated with oil and gas development operations.

Location ID: 423240 Expiration Date: 05/18/2014

[X] This location assessment is included as part of a permit application.

1. CONSULTATION

- [ ] This location is included in a Comprehensive Drilling Plan. CDP # \_\_\_\_\_
[X] 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.

2. Operator

Operator Number: 66571 Name: OXY USA WTP LP Address: P O BOX 27757 City: HOUSTON State: TX Zip: 77227

3. Contact Information

Name: Joan Proulx Phone: (970) 263.3641 Fax: (970) 263.3694 email: joan\_proulx@oxy.com

4. Location Identification:

Name: Cascade Creek Number: 697-04D County: GARFIELD Quarter: NWSW Section: 4 Township: 6S Range: 97W Meridian: 6 Ground Elevation: 8637
Footage at surface: 1510 feet FSL, from North or South section line, and 1131 feet FWL, from East or West section line.
Latitude: 39.548840 Longitude: -108.230140 PDOP Reading: 1.7 Date of Measurement: 04/08/2011
Instrument Operator's Name: R. Seal

5. Facilities (Indicate the number of each type of oil and gas facility planned on location):

Special Purpose Pits: [ ] Drilling Pits: [ ] Wells: [21] Production Pits: [ ] Dehydrator Units: [ ]
Condensate Tanks: [1] Water Tanks: [3] Separators: [5] Electric Motors: [ ] Multi-Well Pits: [ ]
Gas or Diesel Motors: [ ] Cavity Pumps: [ ] LACT Unit: [ ] Pump Jacks: [ ] Pigging Station: [1]
Electric Generators: [ ] Gas Pipeline: [1] Oil Pipeline: [ ] Water Pipeline: [2] Flare: [ ]
Gas Compressors: [ ] VOC Combustor: [1] Oil Tanks: [ ] Fuel Tanks: [ ]
Other: \_\_\_\_\_

6. Construction:

Date planned to commence construction: 09/01/2011 Size of disturbed area during construction in acres: 6.50  
Estimated date that interim reclamation will begin: 04/01/2013 Size of location after interim reclamation in acres: 2.30  
Estimated post-construction ground elevation: 8629 Will a closed loop system be used for drilling fluids: Yes   
Will salt sections be encountered during drilling: Yes  No  Is H2S anticipated? Yes  No   
Will salt (>15,000 ppm TDS Cl) or oil based muds be used: Yes  No   
Mud disposal: Offsite  Onsite  Method: Land Farming  Land Spreading  Disposal Facility   
Other: \_\_\_\_\_

7. Surface Owner:

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Address: \_\_\_\_\_ Fax: \_\_\_\_\_  
Address: \_\_\_\_\_ Email: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ Date of Rule 306 surface owner consultation: \_\_\_\_\_  
Surface Owner:  Fee  State  Federal  Indian  
Mineral Owner:  Fee  State  Federal  Indian  
The surface owner is:  the mineral owner  committed to an oil and gas lease  
 is the executer of the oil and gas lease  the applicant  
The right to construct the location is granted by:  oil and gas lease  Surface Use Agreement  Right of Way  
 applicant is owner  
Surface damage assurance if no agreement is in place:  \$2000  \$5000  Blanket Surety ID \_\_\_\_\_

8. Reclamation Financial Assurance:

Well Surety ID: 20060137  Gas Facility Surety ID: \_\_\_\_\_  Waste Mgnt. Surety ID: \_\_\_\_\_

9. Cultural:

Is the location in a high density area (Rule 603.b.): Yes  No   
Distance, in feet, to nearest building: 6693, public road: 25344, above ground utilit: 61248  
, railroad: 61248, property line: 4273

10. 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

11. 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

12. Soils:

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.

**IMPORTANT: SOME DATA FIELDS HAVE BEEN MODIFIED.**

The required information can be obtained from the NRCS web site at <http://soildatamart.nrcs.usda.gov/> 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 55. Parachute-Irigul complex. 5 to 30 percent slopes.

NRCS Map Unit Name: Map Unit Symbol 52. Northwater-Adel complex. 5 to 30 percent slopes

NRCS Map Unit Name: \_\_\_\_\_

**13. 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: Letterman's needlegrass, Slender wheatgrass, Arizona fescue, Columbia needlegrass, Mountain big sagebrush, Big bluegrass, Mountain snowberry, Saskatoon serviceberry, Yellow rabbitbrush

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): \_\_\_\_\_

**14. Water Resources:**

Rule 901.e. may require a sensitive area determination be performed. If this determination is performed the data is to be submitted with the Form 2A.

Is this a sensitive area:  No  Yes Was a Rule 901.e. Sensitive Areas Determination performed:  No  Yes

Distance (in feet) to nearest surface water: 545, water well: 5544, depth to ground water: 190

Is the location in a riparian area:  No  Yes Was an Army Corps of Engineers Section 404 permit filed  No  Yes

Is the location within a Rule 317B Surface Water Suppl Area buffer zone:

No  0-300 ft. zone  301-500 ft. zone  501-2640 ft. 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  Yes

**15. Comments:**

Oxy is both the surface and mineral owner; Rules 305 and 306 are waived . The well pad has not been constructed. A semi-closed loop system will be used. Per GarCo Vacation Ordinance dated 10-5-1987, CR 213 is now OXY's private property north of Sec 8, 7S, 97W, 6 PM. Oxy will provide appropriate housing for essential personnel in order to conduct safe, efficient drilling operations at this well site. The plats reference a "blooie pit;" this is not a pit but a flare box. Oxy will comply with Notice to Operators (NTO) Drilling wells on the Roan Plateau (June 12, 2008). The CDOW pre-consultation meeting occurred on February 11, 2011.

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

Signed: \_\_\_\_\_ Date: 04/25/2011 Email: joan\_proulx@oxy.com

Print Name: Joan Proulx Title: Regulatory Analyst

**IMPORTANT: SOME DATA FIELDS HAVE BEEN MODIFIED.**

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: \_\_\_\_\_

*David S. Nesline*

Director of COGCC

Date: 5/19/2011

**CONDITIONS OF APPROVAL, IF ANY:**

**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.**

**GENERAL SITE AND ROAN RIM NTO COAs:**

Location is in a sensitive area because of close proximity to surface water, therefore, must ensure 110 percent secondary containment for any volume of fluids contained at well site during drilling and completion operations; including, but not limited to, construction of a berm or diversion dike, diversion/collection trenches within and/or outside of berms/dikes, site grading, or other comparable measures (i.e., best management practices (BMPs) associated with stormwater management) sufficiently protective of nearby surface water. Any berm constructed at the well pad location will be stabilized, inspected at regular intervals (at least every 14 days), and maintained in good condition.

Operator must implement best management practices to contain any unintentional release of fluids, including any fluids conveyed via temporary surface pipelines.

Reserve pit (or any other pit used to contain/hold fluids) must be lined or a closed loop system must be implemented during drilling.

The nearby hillside must be monitored for any day-lighting of drilling fluids throughout the drilling of the surface casing interval.

Flowback and stimulation fluids must be sent to tanks to allow the sand to settle out before the fluids can be placed into any pipeline or pit located on the well pad. The flowback and stimulation fluid tanks must be placed on the well pad in an area with additional downgradient perimeter berming. The area where flowback fluids will be stored/reused must be constructed to be sufficiently impervious to contain any spilled or released material (per Rule 604.a.(4)). Under unforeseen upset conditions during flowback operations, operator may discharge flowback fluids directly into the pit, as needed (notice of intent to directly discharge into the pit must be sent to Dave Kubeczko; email [dave.kubeczko@state.co.us](mailto:dave.kubeczko@state.co.us)).

Berms or other containment devices shall be constructed in compliance with Rule 604.a.(4) around crude oil, condensate, and produced water storage tanks.

The moisture content of any drill cuttings in a cuttings pit, trench, or pile shall be as low as practicable to prevent accumulation of liquids greater than de minimis amounts. At the time of closure, the drill cuttings must also meet the applicable standards of table 910-1.

No portion of any pit that will be used to hold liquids shall be constructed on fill material, unless the pit and fill slope are designed and certified by a professional engineer, subject to review and approval by the director prior to construction of the pit. The construction and lining of the pit shall be supervised by a professional engineer or their agent. The entire base of the pit must be in cut.

Operator must comply with all provisions of the June 12, 2008 Notice to Operators (NTO) (which Oxy has indicated on the Form 2A) Drilling Wells Within  $\frac{3}{4}$  Mile of the Rim of the Roan Plateau in Garfield County – Pit Design, Construction, and Monitoring Requirements.

**Attachment Check List**

Att Doc Num	Name
2033808	NRCS MAP UNIT DESC
2033819	CORRESPONDENCE
2033828	LOCATION DRAWING
2033829	REFERENCE AREA MAP
2033830	HYDROLOGY MAP
2033831	CONST. LAYOUT DRAWINGS
2033832	ACCESS ROAD MAP
400153914	FORM 2A SUBMITTED
400153924	PROPOSED BMPs
400153925	PROPOSED BMPs
400153926	ACCESS ROAD MAP
400153927	CONST. LAYOUT DRAWINGS
400153928	HYDROLOGY MAP
400153931	LOCATION DRAWING
400153932	LOCATION PICTURES
400153933	MULTI-WELL PLAN
400153936	NRCS MAP UNIT DESC
400153937	REFERENCE AREA MAP
400153939	REFERENCE AREA PICTURES
400157631	EXCEPTION LOC REQUEST

Total Attach: 20 Files

**General Comments**

<b><u>User Group</u></b>	<b><u>Comment</u></b>	<b><u>Comment Date</u></b>
OGLA	Initiated/Completed OGLA Form 2A review on 05-10-11 by Dave Kubeczko; requested clarifications and acknowledgement of fluid containment, spill/release BMPs, lined pits/closed loop, flowback to tanks only, tank berming, no pit in fill, monitor hillside, cuttings low moisture content, and Roan Rim NTO COAs from operator on 05-10-11; received clarifications and acknowledgement of COAs from operator on 05-10-11; passed by CDOW on 04-28-11 with operator submitted BMPs (with permit application) acceptable; passed OGLA Form 2A review on 05-17-11 by Dave Kubeczko; fluid containment, spill/release BMPs, lined pits/closed loop, flowback to tanks only, tank berming, no pit in fill, monitor hillside, cuttings low moisture content, and Roan Rim NTO COAs.	5/10/2011 9:26:37 AM
Permit	OXY provided a compatible copy of bmp and they were added to the BMP tab	4/29/2011 3:40:38 PM
DOW	The CDOW and Oxy preconsulted on this pad location; the consultation included BMPs for protection of Greater sage-grouse production area protections. The BMPs and COAs as submitted by the operator are appropriate for the site and species impacted.  by Michael Warren on Thursday, April 28, 2011 at 3:00 P.M.	4/28/2011 2:57:04 PM
Permit	Bmp are missing from BMP tab, will contact operator to locate a copy for input into BMP tab	4/27/2011 5:03:28 PM
Permit	Reference area pictures to be supplied during growing season.	4/26/2011 2:28:38 PM
Permit	returned to draft per operator request for missing attachment	4/25/2011 10:56:05 AM

Total: 6 comment(s)

**BMP**

<b><u>Type</u></b>	<b><u>Comment</u></b>
Wildlife	<p>Sensitive Wildlife Habitat: Greater Sage Grouse Production Area</p> <ul style="list-style-type: none"> <li>• Identify seasonal habitats and migratory patterns of sage-grouse. Map all seasonal habitats using CDOW habitat selection models as they become available.</li> <li>• No surface occupancy within 0.6 mile of any known greater sage-grouse lek.</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 9:00 a.m. and 4:00 p.m. during the lekking season (March 1 to May 15).</li> <li>• Establish company guidelines to minimize wildlife mortality from vehicle collisions on roads.</li> <li>• Phase and concentrate all development activities, so that large areas of undisturbed habitat for wildlife remain and thorough reclamation occurs immediately after development and before moving to new sites. Development should progress at a pace commensurate with reclamation success.</li> <li>• Implement the species appropriate Infrastructure Layout and Drilling and Production Operations Wildlife Protection Measures found in Section II D. of the CDOW 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. 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> </ol> </li> </ul> </li> </ul>

Wildlife	<p>5. Conduct well completions with drilling operations to limit the number of rig moves and traffic.</p> <p>6. Install exclusionary devices to prevent bird and other wildlife access to equipment stacks, vents and openings.</p> <p>7. During pipeline installations install trench plugs, earthen ramps, or other means as necessary to ensure that open pipeline trenches do not trap wildlife, and that pipe strings to not impair wildlife movements.</p> <ul style="list-style-type: none"><li>• Minimize surface disturbance and fragmentation of greater sage-grouse 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>• Where applicable design tanks and other facilities with structures such that they do not provide perches or nest substrates for raptors, crows and ravens.</li><li>• Where needed, install raptor perch deterrents on equipment, fences, cross arms and pole tops in greater sage-grouse habitat.</li><li>• Remove all unnecessary infrastructure.</li><li>• Treat waste water pits and any associated pit containing water that provides a suitable medium for breeding mosquitoes with Bti (<i>Bacillus thuringiensis v. israelensis</i>) or take other effective action to control mosquito larvae that may spread West Nile Virus to wildlife, especially grouse.</li><li>• Implement the species appropriate reclamation guidelines found in Section II G. of the CDOW Wildlife BMP document.</li><li>• 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 CDOW, 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:<ol style="list-style-type: none"><li>1. Seed<ol style="list-style-type: none"><li>a. Use only certified weed-free native seed in seed mixes, unless use of non-native plant materials is recommended by CDOW.</li><li>b. Use locally adapted seed whenever available, especially for species which have wide geographic ranges and much genetic variation (e.g., big sagebrush (<i>Artemisia tridentata</i>), antelope bitterbrush (<i>Purshia tridentata</i>), etc.).</li><li>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.</li><li>d. Use appropriately diverse reclamation seed mixes that mirror an appropriate reference area for the site being reclaimed (see also species-specific recommendations).</li><li>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.).</li><li>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.</li><li>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.</li><li>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.</li><li>i. Distribute quick germinating site adapted native seed or sterile non-native seed for interim reclamation on cut and fill slopes and topsoil piles.</li><li>j. Plan for reclamation failure and be prepared to repeat seeding as necessary to meet vegetation cover, composition, and diversity standards.</li></ol></li><li>2. Vegetative Cover Standard<ol style="list-style-type: none"><li>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.</li><li>b. Establish vegetation with total perennial non-invasive plant cover of at least eighty (80) percent of pre-disturbance or reference area levels.</li><li>c. Establish vegetation with plant diversity of non-invasive species which is at least half</li></ol></li></ol></li></ul>
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Wildlife	<p>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.</p> <p>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.</p> <p>3. Timing</p> <p>a. Use early and effective reclamation techniques, including interim reclamation to accelerate return of disturbed areas for use by wildlife.</p> <p>b. Remove all unnecessary infrastructure.</p> <p>c. Close and reclaim roads not necessary for development immediately, including removing all bridges and culverts and recontouring/reclaiming all stream crossings.</p> <p>d. Reclaim reserve pits as quickly as possible after drilling and ensure that pit contents do not contaminate soil.</p> <p>e. Remediate hydrocarbon spills on disturbed areas prior to reclamation.</p> <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 plug</p>
Wildlife	<p>Wildlife and Domestic Animals Policy</p> <ul style="list-style-type: none"><li>• All firearms and hunting paraphernalia are strictly prohibited.</li><li>• Employees, contractors, subcontractors, or visitors will not hunt, fish, trap, trade, feed, or harass animals or keep wildlife in captivity.</li><li>• Employees, contractors, subcontractors or visitors shall not bring domestic animals to Oxy property.</li><li>• All employees, contractors, subcontractors, or visitors shall comply with Colorado Division of Wildlife, and U.S. Fish and Wildlife rules and regulations pertaining to wildlife.</li><li>• All employees and visitors shall attend Oxy's Visitor Orientation presentation which includes training for Oxy's Wildlife and Domestic Animals policy.</li><li>• Contractors and subcontractors shall read Oxy's Contractor, Health, Environment, and Safety Expectations Handbook, which contains Oxy's wildlife policies. After reading the handbook, all contractors and subcontractors shall sign, date, and return the last sheet of the handbook prior to coming on location.</li><li>• All employees, contractors, subcontractors, or visitors shall comply with the following bear specific guidelines:<ul style="list-style-type: none"><li>o Initiate a food and waste/refuse management program that uses bear-proof food storage containers and trash receptacles, including but not limited to all permanent facilities, drilling locations, temp housing facilities, completions and workover locations.</li><li>o Food and food waste located at temporary job sites shall be kept in the vehicle and only disposed of in bear-proof containers.</li><li>o Report bear conflicts immediately to Oxy HES and/or Regulatory Departments so that it may be reported to CDOW.</li></ul></li></ul>

Total: 2 comment(s)