

**Adams County
Community and Economic Development Department Development
Review Comments**

Case Number: USR2018-00004

Case Name: Conner

Applicant: PetroShare

Date Initiated: 07/19/2018

Referral Comment No.	Mapped?	Reviewer Initials	County Comment	Applicant Response (date)
1	ADCO	CD	Applicant is required to provide baseline well water testing of any registered residential water wells within ½ mile of the proposed oil and gas wells or production facility. Has the applicant received any request for baseline testing? If no residential wells will be tested due to request by the owner, what wells has the applicant identified to test to be compliant with COGCC rule 609?	<p>PetroShare Corp has not received any residential requests for baseline testing. We have identified the following wells for testing and will seek access from well owners to do so:</p> <p style="margin-left: 40px;">Alvin Swink Upper Arapahoe 400' Permit # 176865</p> <p style="margin-left: 40px;">Desmond Price Upper Arapahoe 341' Permit # 258591</p> <p style="margin-left: 40px;">David Martinez Upper Arapahoe 360' Permit # 282224</p> <p style="margin-left: 40px;">City & County of Denver Upper Arapahoe 334' Permit # 119710</p>
2	ADCO	CD	Applicant intends to connect pipeline to the well pad for transporting product off site, but no information about the pipeline is included in the application. Applicant must submit easement agreements or letters of agreements from property owners through which the proposed pipeline will be routed.	All tie-in pipeline will be covered under our existing SUA with the surface owner. Any easements needed to reach PetroShare Corp's tie-in location on the pad will be obtained by the pipeline company.

3	ADCO	CD	<p>The following information about the proposed pipeline for transferring product off site needs to be included with the application.</p> <ol style="list-style-type: none"> 1) Number of pipes and product each pipe will transfer 2) Size of pipes 3) Pipe material 4) Where will the pipes start and terminate? 	<p>1 Gas Line: a combination of 4", 6" and 8" 0.188 to 0.219 wall thickness, ARO coated, steel pipeline</p> <p>1 Oil Line: 4" 0.188 wall thickness, ARO coated, steel pipeline.</p> <p>Pipe will start at the discharge of the last primary separation vessel and terminate at the sales point meter(s).</p>
4	ADCO	CD	<p>Staff has reviewed comments and is evaluating how Conditions of Approval (COAs) may be used to mitigate impacts</p>	<p>PetroShare Corp is willing to discuss COAs in an effort to mitigate impacts.</p>
5	ADCO	EC	<p>The proposed landscape plan does not conform to the requirements of Section 4-16 of the Adams County Development Standards and Regulations. A re-submittal is required.</p>	<p>An updated landscape plan has been prepared and conforms to the requirements of Section 4-16 of the Adams County Development Standards and Regulations.</p>

6	ADCO	EC	<p>A minimum of 10% lot landscape is required. In addition, buffer areas are required for lesser intensity uses and along right-of-way. A minimum of 75% living plant material is required with a maximum of 25% non-living landscape. Please put all text for County Landscape Requirements into a table format. Table can be set-up to show “required” vs. “provided”</p> <ul style="list-style-type: none"> • Please include the caliper and height of trees/shrubs proposed at installation • Type and number of shrubs • Provide overall area of landscape in square feet. • % of living vs. non-living material 	A table has been added to the landscape plan as described in the ADCO comments to include Required vs. Provided
7	ADCO	EC	Please include the setbacks of the well locations from all property lines and the nearest right-of-way, residential structures, etc.	The Cultural Items plat has been included as an attachment to address this comment.
8	ADCO	EC	Please include the language in Section 4-16-11 (Maintenance Standards) to the plan. This will ensure survival standards are outlined and approved in conjunction with the proposed irrigation system. Please include more information on the proposed irrigation plan.	This language has been updated and specifics regarding irrigation have been added.
9	ADCO	EC	All screen fencing must be located on the interior of the landscape. The proposed plan appears to have the fence located in front of the landscape along E. 136 th .	Landscaping appears in front of fencing.
9	Brighton Fire Rescue	CG	After reviewing the Emergency Response Plan the following modification needs to be made: Fire Department emergency phone number shall be listed as 303- 288- 1535	This has been updated.
10	FAA	LB	The Federal Aviation Administration (FAA) reviews planning and construction proposals through the submittal of FAA Form 7460- 1, Notice of Proposed Construction or Alteration. If any portion of the proposal is	Form 7460-1 has been filed with the FAA

			located within 20,000 feet of a public use runway (and breaks a 100:1 plane coming off the nearest point of the nearest runway); or, is more than 200 feet above ground level at any location, the FAA requires the project's proponent to file a Form 7460- 1. If the proposal does not meet any of the criteria above, it may still be necessary to file a Form 7460- 1 if the structure requires an FCC license or there is a potential for navigational equipment interference.	
11	CDPHE	Attached Letter	<p>Electrical equipment and devices</p> <p>Odors from drilling and completion activities</p> <p>Management of exploration and production waste</p> <p>Installation of pipelines</p> <p>Minimization of Flaring</p> <p>Plugging and abandonment</p>	With regards to the 6 BMPs outlined in the CDPHEs letter; PetroShare Corp agrees that these are reasonable and will be implemented as a part of our operations whenever feasible and/or required.
12	Colorado Parks & Wildlife	Attached Letter	<p>If any earth-moving will begin between March 15th and October 31st, a burrowing owl survey should be performed. Guidelines for performing a burrowing owl survey can also be obtained from your local District Wildlife Manager.</p> <p>If prairie dog colonies are present, CPW would recommend they either be captured alive and moved to another location or humanely euthanized before any earth-moving occurs. Be aware that a permit and approval from county commissioners may be required for live relocation.</p>	With regards to the letter submitted by Colorado Parks & Wildlife; PetroShare understands and agrees to conduct operations according to the guidelines laid out in the instances of a prairie dog or burrowing owl presence.

Agency Referral Comments:

Brighton Fire and Rescue: See Comment #9

FAA: See Comment #10

CDPHE: See attached letter date August

CPW: See Attached Letter

General comments:

Dedicated to protecting and improving the health and environment of the people of Colorado

Submitted via email to: cdougherty@adcogov.org

August 13, 2018

Christine Dougherty
Community and Economic Development Department 4430 South
Adams County Parkway, Suite W2000Bs Brighton, CO 80601-8218

Re: Case No. USR2018-00003 and USR2018-00004

Dear Christine Dougherty:

The Colorado Department of Public Health and Environment has the following comments on the July 30, 2018 PetroShare Wakeman and Conner well pads Request for Comment (Case No. USR2018-00003 and USR2018-00004).

The Department respectfully recommends that PetroShare employ best management practices throughout the project area and is providing comments on the following topics:

- Electrical equipment and devices
- Odors from drilling and completion activities
- Management of exploration and production waste
- Installation of pipelines
- Plugging and abandonment

Electrical equipment and devices

The Department recommends that PetroShare utilize electrical equipment and devices to the extent practicable in order to reduce emissions from diesel and natural gas powered equipment and devices.

Odors from drilling and completion activities

The Department supports PetroShare's commitment to comply the Air Quality Control Commission's, Regulation No. 2 to reduce odor emissions. The Department recommends that PetroShare implement methods and practices to reduce odors



during each phase of the exploration and production process throughout the duration of the project, including but not limited to: using chillers and chemicals to mask or neutralize hydrocarbon odors emulating from drilling mud; using a squeegee to remove drilling fluids from the drilling pipe as they exit the wellbore and; using covered containers to store the drilling mud on the well site and; minimizing the use of diesel fuels as additives in drilling mud.

Management of exploration and production waste

The Department supports PetroShare's commitment to dispose of exploration and production waste, including cuttings, in an approved disposal site. The Department recommends that PetroShare test for and properly dispose of technologically enhanced naturally occurring radioactive materials (TENORM). Additionally, PetroShare is encouraged to follow and participate in the TENORM stakeholder process currently being undertaken by the Department's Hazardous Materials and Waste Management Division. Information about this stakeholder process can be found at <https://www.colorado.gov/pacific/cdphe/tenorm-reg-dev>.

Installation of pipelines

The Department recommends that PetroShare not commence commercial production of any well until adequate pipeline takeaway capacity is available at the facility. This practice ensures that green completions will be utilized to the extent practicable during flowback operations and that the flaring of natural gas will be minimized, thus reducing emissions from well sites.

Minimization of Flaring

The project area is within the Denver Metro/North Front Range (DMNFR) ozone nonattainment area. The flaring of natural gas produces nitrogen oxides (NOx) as well as additional volatile organic compound (VOC) emissions due to incomplete combustion. Both pollutants contribute to ozone formation.

In 2008, EPA came out with a stricter ozone standard and the DMNFR was designated as a "Marginal" nonattainment area for this standard. Although Colorado's air quality is getting better, meeting the 2008 ozone standard continues to be a challenge.

The Department recommends that PetroShare limit the use of flares to the extent practicable in order to facilitate emission reduction efforts.

Plugging and abandonment

The Department recommends that PetroShare implement measures to control unnecessary and excessive venting during plugging and abandonment operations to protect public health and the environment, and to ensure that vapors and odors from well plugging operations do not constitute a nuisance or hazard to public welfare.



Conclusion

The Department appreciates the opportunity to submit these comments and as this project develops over the coming months, the Department may submit additional comments in an effort to minimize the impacts from oil and gas operations on public health and the environment.

Please contact Sean Hackett at [303-692-3662](tel:303-692-3662) with any questions.

Sincerely,

Sean Hackett
Environmental Protection Specialist
Colorado Department of Public Health and Environment





COLORADO

Parks and Wildlife

Department of Natural Resources

Northeast Regional Office
6060 Broadway
Denver, CO 80216
P 303.291.7227 | F 303.291.7114

August 14, 2018

Christine Dougherty
Adams County
Oil & Gas Liaison, Community and Economic Development Department 4430 South
Adams County Parkway, Suite W2000A
Brighton, CO 80601-8216

RE: PetroShare-Conner Well Pad (Case Number USR2018-00004)

Dear Ms. Dougherty:

Thank you for the opportunity to comment on the proposed 5.74-acre PetroShare-Conner well pad, consisting of one well pad with up to sixteen wells and one access road for the production of oil and gas near the northwest corner of Gun Club Road and 136th Avenue, Assessor's Parcel Number 0156719300004, in Adams County. The mission of Colorado Parks and Wildlife (CPW) is to perpetuate the wildlife resources of the state, to provide a quality state parks system, and to provide enjoyable and sustainable outdoor recreation opportunities that educate and inspire current and future generations to serve as active stewards of Colorado's natural resources. Our goal in responding to land use proposals such as this is to provide complete, consistent, and timely information to all entities who request comment on matters within our statutory authority.

District Wildlife Manager Serena Rocksund recently visited the project site. The project location is surrounded by limited development, agricultural lands, and some residential single-family homes. Although development of the 5.74-acre well pad is not within sensitive wildlife habitat, the site is proposed in rural agricultural lands and does hold value as wildlife habitat. The main impacts to wildlife from this development include fragmentation and loss of habitat.

Fragmentation of wildlife habitat has been shown to impede the movement of wildlife across the landscape. Open space areas are more beneficial to wildlife if they connect to other natural areas. The areas of wildlife habitat that most closely border human development show heavier impact than do areas on the interior of the open space. However, when open space areas are smaller in size, the overall impact of the fragmentation is greater (Odell and Knight, 2001). By keeping open space areas contiguous and of larger size the overall benefit to wildlife increases dramatically.

CPW would expect a variety of wildlife species to utilize this site on a regular basis, most notably, small to mid-sized mammals, song birds, and raptors. The potential also exists for large mammals such as deer and pronghorn to frequent this site. Raptors and other migratory birds are protected from take, harassment, and nest disruption at both the state and federal levels. If an active nest is discovered within the development area, CPW recommends that buffer zones

Bob D. Broscheid, Director, Colorado Parks and Wildlife • Parks and Wildlife Commission: Robert W. Bray □
Marie Haskett □ Carrie Besnette Hauser John Howard, Chair □ Marvin McDaniel □ Dale Pizel □ James
Vigil, Secretary □ Dean Wingfield □ Michelle Zimmerman, Vice-Chair □ Alex Zipp



around nest sites be implemented during any period of activity that may interfere with nesting season. This will prevent the intentional or unintentional destruction of an active nest.

For further information on this topic, a copy of the document “Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors,” is available from your local District Wildlife Manager. Following the recommendations outlined in this document will decrease the likelihood of unintentional take through disturbance.

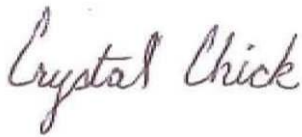
If a prairie dog colony is discovered within the project area, the potential may also exist for the presence of burrowing owls. Burrowing owls live on flat, treeless land with short vegetation, and nest underground in burrows dug by prairie dogs, badgers, and foxes. These raptors are classified as a state threatened species and are protected by both state and federal laws, including the Migratory Bird Treaty Act. These laws prohibit the killing of burrowing owls or disturbance of their nests. Therefore, if any earth-moving will begin between March 15th and October 31st, a burrowing owl survey should be performed. Guidelines for performing a burrowing owl survey can also be obtained from your local District Wildlife Manager.

If prairie dog colonies are present, CPW would recommend they either be captured alive and moved to another location or humanely euthanized before any earth-moving occurs. Be aware that a permit and approval from county commissioners may be required for live relocation.

CPW recommends consideration be made for using principles of an integrated weed management plan, which Adams County may already have in place, to control and eliminate the spread of any noxious weeds in and around the site. CPW recommends that the planting of any species listed as noxious weeds be avoided throughout the development site and surrounding area. The spread and control of noxious weeds on the sites is a concern for wildlife in the immediate and surrounding area. Weeds are defined as “a plant that interferes with management objectives for a given area of land at a given point in time” (Whitson, 1999). Invasive plants endanger the ecosystem by disturbing natural processes and jeopardizing the survival of native plants and the wildlife that depend on them. The threat is so severe in the United States that scientists now agree that the spread of invasive species is one of the greatest risks to biodiversity (Nature Conservancy, 2003).

Thank you again for the opportunity to comment on the proposed PetroShare-Conner well pad near the northwest corner of Gun Club Road and 136th Avenue, in Adams County. Please do not hesitate to contact us again about ways to continue managing the property in order to maximize wildlife value while minimizing potential conflicts. If you have any further questions, please contact District Wildlife Manager Serena Rocksund at (303) 291-7132 or serena.rocksund@state.co.us.

Sincerely,



Crystal Chick
Area 5 Wildlife Manager

Cc: M. Leslie, T. Kroening, S. Rocksund