



**COMMUNITY AND ECONOMIC DEVELOPMENT
DEPARTMENT
STAFF REPORT**

BOCC Staff Report

November 8, 2017

CASE No.: USR2016-00006 CASE NAME: Ward Petroleum – Ivey Well Pad

Owner's Name:	Ward Petroleum Corporation
Applicant's Name:	Marshall Hall
Applicant's Address:	215 W. Oak Street, Suite 1000, Fort Collins, CO 80521
Location of Request:	Section 11, Township 1S, Range 68W
Parcel number:	0157311400006
Nature of Request:	A Use by Special Review Permit to allow twenty six (26) horizontal wells on one (1) well pad for the production of oil and natural gas
Zone District:	Agriculture - 3 (A-3)
Site Size:	Approximately 6.8 acres (31.7-acre parcel)
Proposed Uses:	Multi-well oil and gas facility
Existing Use:	One oil and gas well and associated production facility
Report Date:	November 1, 2017
Case Manager:	Christopher LaMere
Director Options:	Approval with 4 Findings of Fact, 5 Conditions Precedent, and 23 Conditions; Denial; or Referral to the Board of County Commissioners
Staff Recommendation:	Approval with 4 Findings of Fact, 5 Conditions Precedent, and 23 Conditions

SUMMARY OF PREVIOUS APPLICATIONS

This parcel is zoned A-3 and contains one producing oil and gas well with associated production facility. There is one previous application for this parcel and it is for a segment of the Boardwalk Pipeline, which is intended to transport oil, natural gas, and produced water from this site.

SUMMARY OF APPLICATION

Background

Ward Petroleum Corporation (Ward Petroleum) is based in Fort Collins, Colorado and engages in the exploration and development of oil and natural gas, primarily in the Denver-Julesburg Basin. Ward Petroleum has proposed an oil and gas well pad location in unincorporated Adams County to continue developing those minerals. The proposed project, the Ivey Pad, consists of the construction of one well pad with up to 26 wells, a production facility, and one access road.

The proposed pad location is on a 31.7-acre parcel, southwest of the intersection of Highway E-470 and York Street. Access to the site is proposed to be from East 152nd Parkway, which is located on the southern boundary of the property. Surrounding land uses are agricultural with dispersed residential communities located within the City of Thornton, with the closest home over 1,500 feet from the proposed facility.

Summary of Application

The project proposed by Ward Petroleum consists of twenty-six (26) wells on a single well pad, with one (1) access road to accommodate all traffic during construction, production, and long-term maintenance. Site preparation, including development of the access road and leveling the pad site, is anticipated to take 14-21 days. Drilling of the wells is anticipated to take 7-12 days per well, followed by the completion phase, which will take 3-6 days per well. If all wells are drilled, the total time could be up to 489 days.

The well pad size during the drilling and completion phases is proposed to be approximately 6.8 acres; this will be reduced to 3.4 acres after the completions phase has ended. The on-site production facilities include 26 wells, 26 separators, 10 VOC combustors, 10 water tanks, and 10 low-profile oil tanks. Ward Petroleum partnered with Discovery Midstream on a segment of the Boardwalk Pipeline (RCU2017-00017), which was approved by the Board of County Commissioners on Tuesday, October 17, 2017. This portion of the pipeline will be comprised of three separate pipelines that will allow for the transport of produced water, oil, and natural gas off-site. The Boardwalk Pipeline will connect the Ivey Well Pad to a Central Delivery Point Facility and ultimately transport the products north to Weld County for processing.

The mitigation measures that have been proposed by Ward Petroleum include the following:

- **Noise:** Ward Petroleum has conducted a sound study to determine potential noise impacts to nearby residents and will implement 1,060' of sound barrier walls accordingly to maintain compliance with Rule 802 of the Colorado Oil and Gas Conservation Commission (COGCC). Ward Petroleum will also provide and post 24-hour, 7 days per week contact information for any noise related complaints.
- **Odor:** Ward Petroleum will utilize an Emission Control Device to reduce odor emissions during production to comply with COGCC Rule 805 and the Colorado Department of Public Health and Environment (CDPHE) Air Quality Control Commission regulations.
- **Dust Mitigation:** In order to minimize dust, Ward Petroleum will implement speed restrictions, regular road maintenance, restrictions of construction activities during high wind days, and silica dust controls when handling sand used in hydraulic fracturing operations. The access road will be constructed with road base aggregate material and

additional management practices such as road surfacing, wind breaks and barriers may be used. A street sweeper and/or water tank will be on call to limit dust when necessary.

- **Visual Mitigation:** Sound walls will be erected that will act as a visual barrier during drilling and completions operations. The tank battery shall be painted in uniform, non-contrasting, non-reflective color tones with the colors matched to but slightly darker than the surrounding landscape.
- **Weed Control and Management:** Ward Petroleum will manage weeds at the oil and gas facility and along the access road during construction operations and until final abandonment and final reclamation is completed.
- **Traffic Control:** Ward Petroleum will construct all leasehold roads to accommodate local emergency vehicle access requirements. The applicant has also submitted a traffic plan to which their vehicles and equipment are required to follow.
- **Erosion Control Measures:** Ward Petroleum will maintain a Stormwater Management Plan with site specific measures to address erosion control.
- **Waste:** Ward Petroleum agrees that all trash, refuse pipe, equipment, liquids, chemicals of other materials that are not necessary for the continued operations of the wells will be removed and disposed of no later than 30 days after completion.
- **Pipelines:** Ward Petroleum has worked with Discovery Midstream to ensure the oil and gas facility will be connected to produced water, oil, and natural gas pipelines to be transported off-site. This will result in significant reductions in truck traffic into and out of the facility.

Development Standards and Regulations Requirements

In order to obtain an Administrative Use by Special Review approval, an Oil and Gas Facility must satisfy certain criteria.

1. Memorandum of Understanding (MOU)

The form Oil and Gas MOU was signed by Ward Petroleum Corporation and executed by the Adams County Board of County Commissioners on June 30, 2015. The MOU includes all the best management practices determined necessary by the County Manager.

2. Satisfy Submittal Requirements

The applicant has satisfied the required submittal items, as outlined in the Development Standards and Regulations. These include the following:

- Conceptual Review Meeting – Ward Petroleum attended a Conceptual Review Meeting held on December 12, 2016 with the Adams County Development Review Team where their proposed site was discussed.
- Neighborhood Meeting – Ward Petroleum held a neighborhood meeting on November 15, 2016 at the Heritage Todd Creek Golf Club in Thornton, CO. Approximately 60 residents attended the meeting.
- Application Form and Fees – Ward Petroleum submitted the required Administrative Use by Special Review application form and paid the applicable permit fees. Prior to construction and operation, the operator will obtain the required Public Utilities

permits, including an access permit for the access road and oversize load permits for the drill rigs and other oversize equipment.

- Oil and Gas Operations Plan – Ward Petroleum submitted an oil and gas operations plan that included an impact area map that shows all oil and gas wells and water wells within one half mile, a drilling operation plan map that shows a site plan with drilling equipment, a production plan map that shows a site plan during the production phase, and a sign plan that shows the signs to be posted and describes their location.
- Emergency Preparedness Plan – Ward Petroleum submitted a site-specific emergency preparedness plan that has been reviewed and approved by the Adams County Office of Emergency Management.
- Engineering Documents – Ward Petroleum provided grading, erosion, and sediment control report & plan, as well as a traffic impact study, in accordance with the Development Standards and Regulations.
- Surface Owner Documentation – Ward Petroleum provided a memorandum of surface use agreement to show that the proposed oil and gas facility is authorized by the surface owner.

3. Compatibility / Land Use Impacts

The subject site is 31.7 acres and currently zoned Agricultural-3 (A-3). The purpose of the A-3 District is to provide land primarily in holdings of at least thirty-five acres for dryland or irrigated farming, pasturage, or other related food production uses; the current uses meet the purpose of the A-3 zone district. The surrounding area is a mix of A-3 and land located within the municipal limits of the City of Thornton. To the north is Highway E-470 and land used for farming and agricultural purposes. The area east of the subject parcel is within the City of Thornton Big Dry Creek Open Space, which is part of the Big Dry Creek Recreation and Floodplain Restoration Master Plan and anticipated to contain a multi-use trail in the future. To the southwest is more land located within the City of Thornton and within their Open Space Master Plan. A platted subdivision within the City of Thornton is located southeast of the subject site where residences are currently being built. Richmond Homes is developing the subdivision, Fairfield Filing 1, which was approved by Thornton in March 2016. The closest lot to the proposed well pad is approximately 1,500 feet away. There are also residential neighborhoods that are within the City of Thornton located approximately one half mile south, east, and northeast of the subject site. Agricultural uses and zoning are located to the west of the subject site and contain several active conventional oil and gas wells.

The future land use designation of the site, according to the Adams County Comprehensive Plan, is Mixed-Use Employment. This designation is intended to accommodate light manufacturing, distribution, offices, and other similar commercial and light industrial uses. The future land use designation to the north is also Mixed-Use Employment, there are lands designated Parks and Open Space to the south and east, and there is an Activity Center designation to the southwest for the future station area for the North Metro line of FasTracks. Parks and Open Space are areas designated for recreation, wildlife, and to protect land from future development. This designation follows the floodplain for Big Dry Creek and the land is currently used as open space within the City of Thornton. The Activity Center designation

is for areas with planned high intensity residential, retail and office spaces, and the Activity Center is often located near current or planned transit stations.

The proposed Ivey location will access minerals towards the south from the well pad location, utilizing up to 26 lateral well bores that extend up to three miles south from the surface location. This is important because the use of the Ivey location enables the surface impacts to be located farther away from existing development. In 2015, a previous operator that preceded Ward Petroleum's interest in these assets had proposed the use of a surface location on a 35-acre parcel in the middle of the Wadley Farms neighborhood to access these minerals. Ward acquired these assets from that operator in 2016. Through evaluating multiple surface development options for the placement of the well pad, this location was chosen because it is outside of existing neighborhoods and close to E-470 for ease of access to the highway and a pipeline corridor. This well pad is capable of extracting the same minerals that had been the target of the well pad in Wadley Farms, but with fewer direct impacts to existing neighborhoods. This change in the total number and location of well pads that will be utilized to extract the minerals in this area of the County is one of the key factors that has made this proposal compatible with existing and future land uses.

Mitigation Measures

In addition to the selection for the location of the well pad, the operator and the County have identified various mitigation measures to be applied to this site in order to make it compatible with the existing and future land uses. These mitigation measures have been developed over a number of months after careful review of the application, consideration of the public comments and agency comments, and after review of the applicant's responses to referral comments from staff, the public, and agencies. Several of these mitigation measures are detailed below and the entire set of mitigation measures is outlined in the staff's recommended conditions of approval.

During the development of the oil and gas facility, including well pad construction and the drilling and completion of the wells, there will be impacts to the surrounding area. Specific impacts include noise, lights, traffic, and dust. To make this facility compatible with the surrounding uses, the operator has conducted several studies to evaluate these impacts and developed the following means to mitigate their effects on neighboring residence.

An Ambient Sound Study was conducted on October 26, 2016 and provided average noise levels for hourly and 15 minute intervals. As a result of the study, the operator was provided two noise mitigation models for each phase of the project that would allow the COGCC requirements to be met or exceeded. All mitigation models require the use of acoustical walls up to 32 feet in height. Details of the Sound Study and mitigation plan can be found in exhibit 5.3 (Ambient Sound Study).

Visual impacts from oil and gas well pads can be divided into two phases, the construction and development of the well pad and the long-term impacts of the pad and production equipment. To address potential impacts of light travelling off-site from the oil and gas facility during the construction phase, the applicant has conducted a Photometric Study (Exhibit 5.4) to determine the mitigation measures needed. The study analyzed typical

drilling rig lighting arrangements and the proximity of the sound walls, which will also aid in light mitigation. Additional mitigation actions include directing lights downward and inward to the pad, wrapping the mast of the derrick to prevent light trespass, and utilizing LED lights only on one side of the rig mast.

Visual mitigation for post-construction and drilling will be addressed with the use of landscaping. The applicant has submitted a landscaping plan that includes a variety of vegetative species with variant sizes and densities to both screen the facility and provide aesthetically appealing line-of-sight. Six-foot wood fencing will be utilized around the site, in conjunction with landscaping, to make the site more compatible with the surrounding land uses. Approximately two acres of the disturbed area will be reclaimed following the pad construction with the use of native grass. Trees and shrubs used along the perimeter will be established with the use of a drip irrigation system connected to a water tank that will be placed on-site until the trees are properly established. The applicant will be required to maintain the landscape in accordance to Adams County Development Standards and Regulations 4-16-11 *Landscape Maintenance Standards*, which includes long-term viability requirements.

Dust, which is most commonly associated with traffic along the access road, will be mitigated with a combination of speed restrictions, regular road maintenance, and use of road base aggregate which provides a more stable surface than disturbed soils alone. Additional controls include the use of water trucks to moisten the disturbed surfaces during periods of high winds. Off-site mitigation will include the use of a street sweeper to minimize sediment deposits on asphalt surfaced roads.

Traffic routing and associated impacts are a concern of neighboring community members. To address this, Ward Petroleum has conducted traffic impact studies and participated in the design and development of the Boardwalk Pipeline to transfer produced water, oil, and natural gas off-site. When assessing the potential impacts from truck traffic, one must consider the impacts in two phases. First is the development phase of the well pad, when trucks, drilling rigs, and the greatest number of employees are on-site. This is followed by the second phase, production, which primarily involves trucks hauling product off-site and employees monitoring the facility. Traffic impacts can greatly influence the compatibility of a site with surrounding neighborhood, current land uses, and planned future land uses.

During the development phase of the well pad, approximately 39,500 truck trips would occur over 111 days (about 3.5 months), if all 26 wells were drilled and completed at once. This includes 500 truck trips for construction of the well pad, 4,300 truck trips for drilling the 26 wells, and 34,700 truck trips for the completion of the wells. During the flowback and production phase of the well pad, 18,000 truck trips are anticipated over one year, if all wells are developed at once and a pipeline is used. In contrast, without a pipeline, approximately 70,300 truck trips would occur over that that same one year period. Due to the long-term truck traffic impacts that could be associated with this development, the use of a pipeline is being required for the transportation of products. In addition, the recommended conditions of approval also include a requirement for the use of above ground water lines. According to the Traffic Impact Study (Exhibit 5.5), the applicant's use of a pipeline for produced oil and

natural gas will reduce the number of trucks in and out of the site by nearly 50% during the development phase and the first year of production. By taking approximately 55,000 trucks off of 152nd Parkway and the neighboring roads, Ward has significantly reduced their anticipated impacts to the surrounding area. The reduction of truck traffic and associated impacts will be realized throughout the life of the well pad, resulting in a better overall compatibility with the surrounding area.

Specifying truck traffic routes can greatly reduce impacts of development on surrounding neighborhoods, requiring the trucks to use highways and other major thoroughfares rather than local roads through subdivisions. Ward Petroleum developed primary and secondary traffic routes that will dictate their truck traffic. The primary traffic route has trucks accessing the site from E-470 to York Street where they will exit and travel south to 152nd Parkway, then enter the facility via the access road. Vehicles not permitted to use E-470, will utilize the secondary traffic route with trucks exiting from Interstate-25 onto 168th Avenue, 168th Avenue to Washington Street, Washington Street to 152nd Parkway, then entering the facility from the access on 152nd Parkway. Through neighborhood meetings and public comments, the applicant modified their traffic plan to access state highways as soon as possible and avoid local roads and school bus routes. In addition, after numerous resident comments and concerns from the City of Thornton regarding a sub-standard bridge on York Street, the applicant revised the traffic plan so that truck traffic will no longer travel over the bridge.

Through consultation with the City of Thornton, the adjacent jurisdiction, several concerns were raised about traffic impacts. In addition to agreeing to connect to a pipeline, the operator will be constructing a deceleration lane on 152nd Parkway for traffic entering the well pad. The design and approval of the turn lane is through the City of Thornton and is currently under way. In addition, the secondary traffic route has trucks utilizing Washington Street north to 168th Avenue rather than York Street, which has a weight-restricted bridge.

Through consultation with Adams 12 Five Star Schools and consideration of public comments, the applicant has agreed to modify their traffic routes to keep HAZMAT vehicles that are unable to use E-470 from driving by the Silver Creek Elementary School, which is located approximately 3,200 feet to the southeast of the proposed well pad. The original application had HAZMAT trucks exiting the site, driving east on 152nd Parkway, then north on York to 168th Avenue, a route that travels by the school. The new plan has HAZMAT trucks exiting the site, driving west on 152nd Parkway, then north on Washington Street, a route that avoids the area by the school entirely. The elementary school has access from Fillmore Street, a side street off of York Street, so limiting truck traffic in that area is important. In addition, the applicant has committed to limiting truck traffic as much as possible on York Street during school bus hours, in coordination with Silver Creek Elementary School and Adams 12 Five Star Schools.

The applicant has thoughtfully considered the impacts to the surrounding properties, future land use, and local roadways. These have been mitigated through a combination of site planning decisions, traffic and access management, utilization of a pipeline for all products, and long-term compatibility is addressed through the requirement for reclamation upon

conclusion of surface operations. It is staff's recommendation that this criterion has been satisfied by the applicant's proposal, and through the recommended conditions of approval within this staff report.

4. Emergency Service Providers

The applicant provided the required 'will serve' letter from the North Metro Fire District, the emergency service provider for that area.

Referral Comments:

Adams County Development Services stated that a landscape and visual mitigation plan will be required that conforms to section 4-16 of the Adams County Development Standards and Regulations. Solid screen fencing will be required for visual mitigation from the existing and proposed residences. The visual mitigation/landscape plan must also outline a watering plan to keep the plantings alive.

Adams County Development Engineering stated that erosion and sediment control BMPs are required for compliance with federal, state, and local water quality construction requirements. A grading and drainage plan will be required if any change in grade or improvements to the site are proposed.

Adams 12 Five Star Schools has requested the applicant consider school hours and bus routes when developing traffic plans. The applicant has taken this into consideration and has selected an alternate route to minimize impacts to school operations. A deceleration lane is being installed on 152nd Parkway to minimize impacts to traffic and student bus schedules.

The City of Thornton expressed several concerns about this proposed development, including potential environmental and visual impacts to the neighboring open space and truck traffic impacts to the surrounding area. The applicant has agreed to fence the oil and gas facility and install landscaping to provide visual mitigation from the open space. Routine monitoring of the facility will be performed to ensure any environmental threats are identified and remediated. Thornton has also requested a deceleration lane into the facility off of 152nd Parkway and it is currently under review by the City of Thornton and is anticipated to be approved and constructed prior to developing the well pad. Continued cooperation with the Thornton Fire Department and North Metro Fire District was also desired, including initial and ongoing response training. Ward works closely with the Local Emergency Planning Commission and has already conducted tabletop exercises with the fire districts.

Staff Recommendation:

Based upon the application, the criteria for an Administrative Use by Special Review permit, staff recommends approval of this request with 4 findings-of-fact, 5 conditions precedent, and 23 conditions.

Findings of Fact:

1. The applicant and the County have executed a Memorandum of Understanding (MOU) that is currently in full force and effect, and the oil and gas facility is in compliance with the provisions of the MOU.
2. The applicant has satisfied the submittal requirements for an Administrative Use by Special Review application, as outlined in the Development Standards and Regulations.
3. Based upon compliance with the recommended conditions of approval, the oil and gas facility is compatible with the surrounding area and does not create site specific or material impacts to nearby land uses.
4. The applicant has provided a commitment to serve the facility from the authority having jurisdiction for providing emergency services.

Recommended Conditions of Approval:

Conditions Precedent:

1. Pad construction and/or drilling shall not commence until combined State approval of Colorado Oil and Gas Conservation Commission (COGCC) Form 2 and 2A and County approval of AUSR permit. Drilling shall only occur during the COGCC Form 2 permit validity timeframe.
 - a. Per section 4-10-02-05-10 of the Adams County Development Standards and Regulations, proposed changes to the plans, including but not limited to, any changes in the source or location of water to be used by the Oil and Gas Facility, shall be submitted as amendments to the Administrative Use by Special Review application, reviewed by staff, and approved by the Director or BOCC (if the BOCC approved the original application).
2. Prior to initiation of construction, the applicant shall provide the applicable title commitment documents to Adams County for review of the easement rights necessary to construct the oil, water, and gas pipelines for the facility.
3. The applicant or the applicant's subcontractors may be required to obtain Oversize Load Permits and/or Rig-Move permits. These permits may be obtained through the Adams County One-Stop Customer Center.
4. The applicant shall initiate the permitting process with the City of Thornton for the installation of the deceleration and turn lane requested by the City of Thornton prior to the construction of the well pad site.
5. The applicant shall receive a "Notice to Proceed" from the Department of Community and Economic Development. Written proof that all of the conditions precedents have been satisfied shall be required prior to receiving this notice.

Conditions:

1. The primary traffic route for this permit shall be the site access road to East 152nd Parkway, East 152nd Parkway to York Street, York Street to E-470. The secondary traffic route shall be the site access to 152nd Parkway, 152nd Parkway to Washington Street, Washington Street to 168th Ave., 168th Ave. to Interstate 25. The transportation of hazardous materials shall be subject to federal regulations.
2. The E-470 Authority is currently exploring the possibility of seeking a Hazardous Materials (HAZMAT) designation for some or all of E-470. If E-470 is designated as a Colorado HAZMAT Route at any point within the duration of this use, the applicant shall submit a modified traffic plan to Adams County for review and approval depicting all traffic using E-470 within 60 days of the formal designation.
3. The applicant shall implement the best management practices as identified in the Ambient Sound Study provided as part of the application and provided in Exhibit 5.3 (Ambient Sound Study). These mitigation measures include 12-foot high sound walls around the equipment within the site during drilling operations; 24-foot high sound walls along the northwestern pad perimeter and 32-foot high sound walls along the northeastern, southeastern, southern, and southwestern pad perimeters during the hydraulic fracturing (completion) operations.
4. The applicant shall submit written certification that the facility is connected to a pipeline for the transfer of product off-site prior to the initiation of production.
5. The on-site storage of oil shall be limited to ten (10) low-profile 533-barrel tanks. The tank battery shall be painted in uniform, non-contrasting, non-reflective color tones with the colors matched to but slightly darker than the surrounding landscape.
6. The applicant shall be required to implement the approved landscaping and screening plan for the site. Screening of the site shall be provided through a combination of six-foot wood screen fencing and landscape materials. This plan shall be implemented by the applicant within 90 days of completion of the construction of the final well, if all twenty-six approved wells are drilled and completed at the same time. If applicant staggers well completion (i.e., completes a lesser number of wells initially with plans to complete the remaining wells at a future date), then this plan shall serve as the interim restoration plan, and it shall be implemented within 90 days of completion of the initial set of wells.
7. Maintenance of required landscaping and fencing shall be in compliance with the Adams County Development Standards and Regulations at all times.
8. As referenced in 8(c.) of the Ward Petroleum/Adams County MOU, the applicant agrees to conduct a baseline test of any registered water well requested by the owner, on a one-time basis, if such well is within a ½ mile radius of the new oil and gas facility.

9. The deceleration and turn lane, approved by the City of Thornton, and immediate entrance to the site shall be paved. In addition, the access road to this site shall be outfitted with a vehicle tracking pad. The construction of the turn lane and deceleration lane shall be completed prior to the commencement of production.
10. Noise levels during the construction, drilling, completions, and production life-cycles shall not exceed those outlined in COGCC Section 802.
11. Per Section 14 of the executed MOU, fresh water as referenced in the COGCC's rules and Regulations, or another source as approved by the County on a case by case basis, may be applied to roads and land surfaces for purpose of dust mitigation. Absolutely no other liquid or substance generated by the production of the operator's facility, including, but not limited to, exploration and production waste (as defined by the COGCC) or any other application of liquids that would have negative impact to natural resources, shall be permitted to be applied to roads and land surfaces.
12. Financial assurance shall meet or exceed the requirements of COGCC 700 Series Rules Financial Assurance and Oil and Gas Conservation and Environmental Response Fund.
13. A closed loop system shall be used, as depicted in the permit application.
14. Per COGCC Rule 604.c. G Overflow containment facilities shall be constructed around crude oil, condensate, and produced water storage tanks and shall enclose an area sufficient to contain and provide secondary containment for one-hundred fifty percent (150%) of the largest single tank. Berms or other secondary containment devices shall be sufficiently impervious to contain any spilled or release material.
15. Per Section 5 of the executed MOU, in an effort to reduce truck traffic, where feasible, the Operator will identify a water source lawfully available for industrial use, including oil and gas development, close to the facility location, to be utilized by Operator and its suppliers. Operator will comply with the Colorado Department of Public Health and Environment requirements and Tri-County Health Department (TCHD) regulations concerning water quality. With respect to wastewater treatment, Operator agrees to comply with TCHD's Regulations NO O-14, On-site Wastewater Treatment Systems, as adopted or modified. The Operator agrees to contact TCHD in a timely manner to arrange for the processing of appropriate application matters as required inspections.
16. This location shall utilize above-ground water pipelines for the transport of water into the site for the hydraulic fracturing operations.
17. Per COGCC Section 604.c (4) B. IV. Zero Flaring or venting of gas upon completion of flowback, excepting upset or emergency, or with prior written approval from the COGCC Director for necessary maintenance operations.
 - a. The applicant shall provide a copy of written COGCC Director approval to the CEDD Director within 24 hours of flaring operations and/or approval, whichever occurs first.

18. Upon conclusion of construction, drilling, and completion, the site shall be fenced according to the Adams County Development Standards and Regulations Section 4-10-01-03. The fence shall be solid screen wood fence, with a locked gate, as depicted in the landscape plan and shall be maintained in good condition through the life of the well pad.
 - a. The local fire district shall have access to ALL gate key(s)/combination(s) at all times for use in case of emergency.
 - b. Adams County oil & gas inspector shall have access to ALL gate key(s)/combination(s) at all times for use in case of emergency.
19. The applicant is required to receive an approved completion of reclamation from Adams County upon abandonment and reclamation of well pad and associated facilities.
20. Well pad, associated facilities, and access road shall be free of any county and state identified noxious weeds throughout the drilling, completion and production portions of operations.
21. A tabletop exercise pertaining to the Emergency Response Plan will be required. This may be requested by the County's Local Government Designee, Emergency Manager, Local Emergency Planning Commission, Sherriff's Office, site-specific Fire District, or Transportation Department.
22. All permanent lighting shall be directed downward and internally. Temporary lighting shall conform to COGCC Rule 803 and not adversely affect adjacent residential properties. Temporary lighting shall be directed downward to minimize light and the recommendations of the Photometric Study (Exhibit 5.4) shall be followed. Any complaints regarding lighting shall be communicated to the Adams County Oil & Gas Inspector in order to ensure resolution.
23. All representations and commitments of the applicant made during the AUSR process are incorporated herein as conditions of approval, including representations and commitments made during the public hearing on November 8, 2017.
24. The applicant shall amend the COGCC 2A permits to include all conditions of approval of this AUSR permit, subject to approval by the COGCC.
25. For the first two years following commencement of construction of the new well pad site, unless otherwise approved by the Director of Community & Economic Development, the operator shall facilitate quarterly neighborhood meetings to encourage collaboration and open lines of communication between company representatives and the nearby neighborhood(s). Operator shall provide written notice for each neighborhood meeting to property owners within one half mile from the Ivey well pad at least 10 days prior to the meeting.
26. The landscaping material maturity shall be reviewed and approved by Adams County in order to provide additional screening upon planting.

27. The applicant shall plug and abandon all wells owned by Ward Petroleum within the subject spacing units to be accessed by this site.
28. The compatibility of the proposed well sites is enhanced as a result of the non-use of the 35-acre potential well site located in Wadley Farms. The operator agrees that based on the approval of the current Ivey site, it will not in the future allow the Wadley Farms property to be used for oil and gas development.
29. The applicant shall work with Adams 12 Five Star Schools to address concerns related to truck traffic. To the maximum extent possible, the truck traffic shall be planned to avoid school bus hours. The applicant shall meet monthly with Adams County 12 Five Star School district staff monthly during the first two years of the permit to address any concerns of the school district.
30. All complaints received by the applicant concerning the conditions of this permit, and the resolution of those complaints, shall be conveyed to the Adams County Local Government Designee. Impacts from the conditions of this permit shall be responded to and resolved immediately by the applicant.

CITIZEN COMMENTS

Of the 510 referral notices sent to property owners within one-half mile of subject parcel boundary, 99 comments were received. The application and Request for Comments were also posted on the Adams County website for the review of the general public. Concerns presented by the residents include environmental impacts to air, water, and soil, specifically due to the geography of the site and the proximity to the Big Dry Creek. The residents expressed concerns about potential impacts to property values. Significant concerns were raised about truck traffic impacts to the surrounding neighborhoods and this has been addressed through designated traffic routes and the requirement of a pipeline to transport produced water, oil, and natural gas.

Referral Notifications Sent	Referral Comments Received
510	99

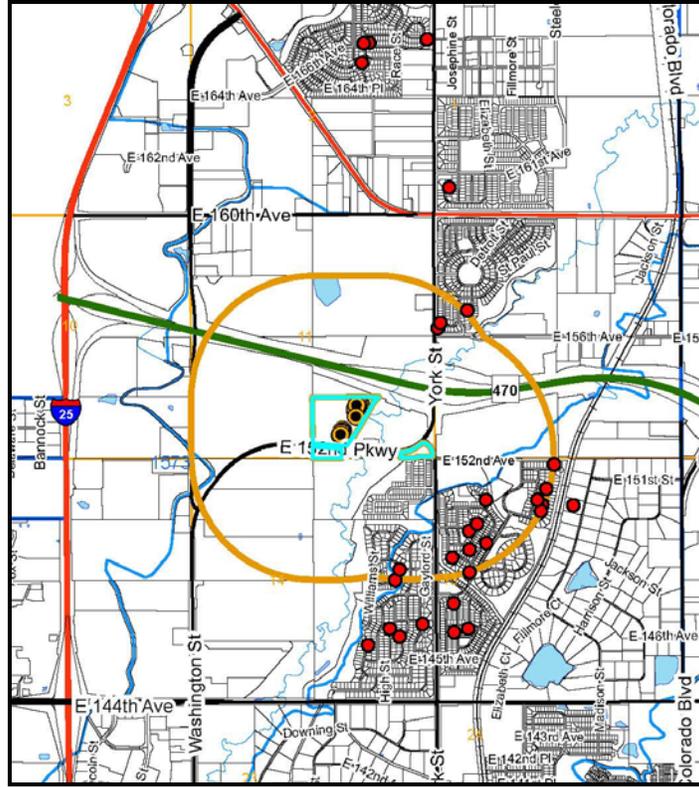


Figure 1. Map showing the 1/2 mile mailed referral radius from the parcel boundary and the received citizen comments (red = negative comment; green = positive comment).

REFERRAL AGENCY COMMENTS

Responding with Concerns:

Adams 12 Five Star

City of Thornton

Responding without Concerns:

United Power

Notified but not Responding:

Colorado Department of Public Health and Environment

Colorado Parks & Wildlife

Tri-County Health Department

Xcel Energy

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