

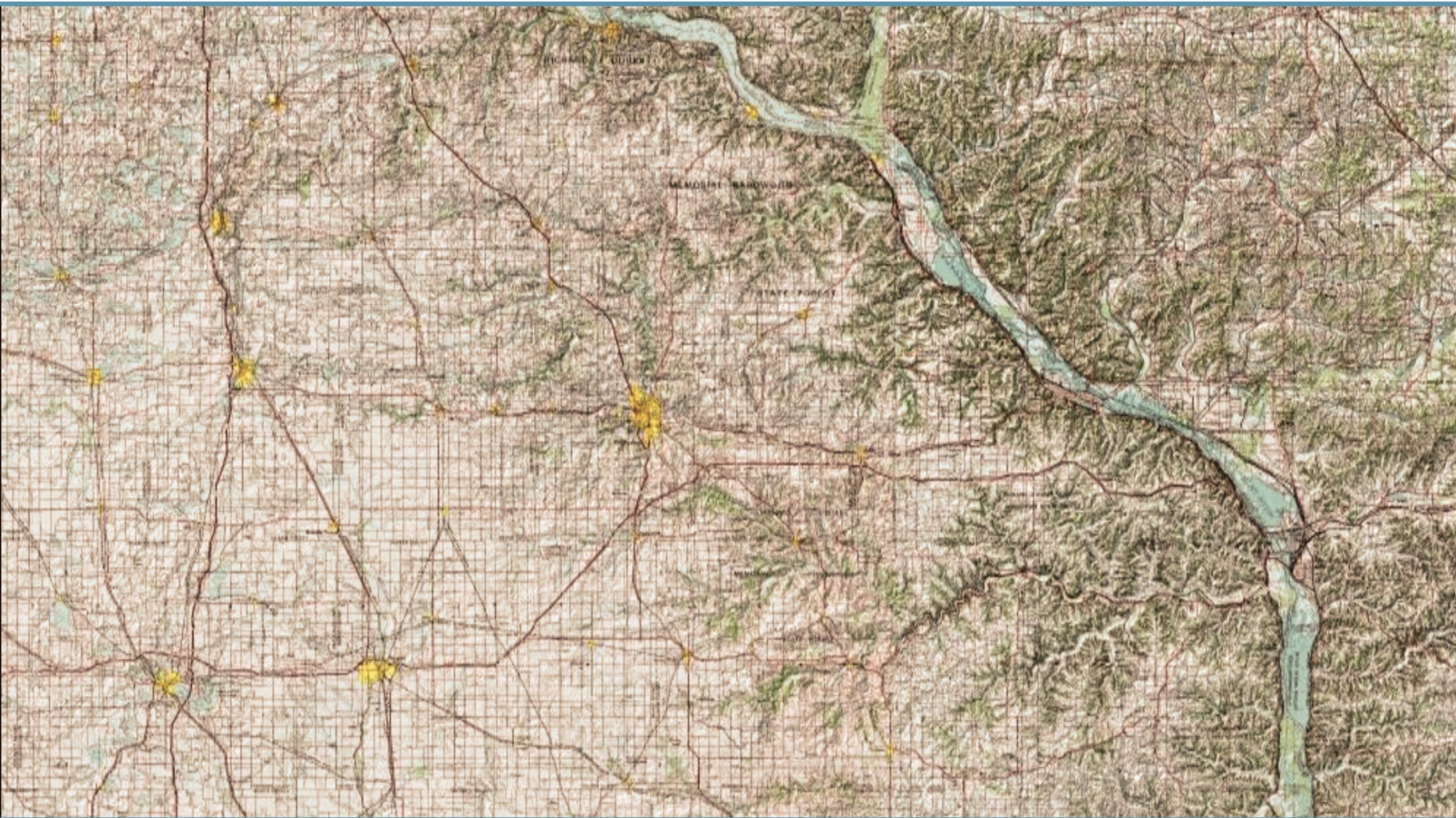
North Dakota Public Service Commission

Application for Certificate of Site Compatibility

Oasis Midstream Services, LLC

Wild Basin Gas Plant Expansion Project

May 2017



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Prepared by:

E3 Environmental, LLC

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INTRODUCTION

Oasis Midstream Services, LLC (Oasis), owns and operates the Wild Basin Gas Plant and Crude Handling Facility (Plant) which is located in Oasis' core production area, Wild Basin. The existing Plant currently has a maximum gas processing capacity of 80 million standard cubic feet per day (MMSCFD). In addition, the Crude Handling Facility is currently designed to stabilize up to 50,000 barrels per day (BPD) from gathering operations and received truck traffic with 200,000 bbls of working storage capacity. Oasis has recently modified estimates of gas reserves in its Bakken play to be approximately 200-300 MMSCFD. Future planned development in Wild Basin necessitates an increase in crude volume capacity from the current nameplate capacity to 80,000 BPD.

To satisfy current production levels, and in anticipation of future development of these resources, Oasis is proposing the Wild Basin Gas Plant and Crude Handling Facility Expansion Project (Project). The Project would add an additional 265 MMSCFD of processing capacity to the existing Plant, and the Crude Handling Facility would add an additional stabilizer and a 150,000 bbl working capacity storage tank to accommodate increased gathering throughput. This expansion of gas processing and crude oil storage capacity would support the development of the field in a manner that would satisfy the State's requirements associated with gas capture, the North Dakota Industrial Commission's (NDIC) Crude Conditioning Order #25417 (Order), and further reduction of truck traffic in the State.

Oasis submits to the North Dakota Public Service Commission (PSC) an application for a Certificate of Site Compatibility for its Wild Basin Gas Plant and Crude Handling Facility Expansion Project.

The application provides the requisite information as stipulated by:

- North Dakota Century Code, Energy Conversion and Transmission Facility Siting Act, Chapter 49-22-08 and ,
- North Dakota Administrative Code, Chapter 69-06-04
- North Dakota Administrative Code, Chapter 69-06-08

SECTION 1: DESCRIPTION

1.1 TYPE OF ENERGY CONVERSION FACILITY

Oasis' proposed Wild Basin Gas Plant and Crude Handling Facility Expansion Project (Project) will be located approximately 6-miles northeast of Watford City, North Dakota adjacent to the existing Plant. The expansion will include the addition of a permanent 200 MMSCFD processing train, up to 65 MMCFD in modular Mechanical Refrigeration Units (MRUs), Natural Gas Liquid (NGL) storage and NGL truck offload area, a fourth stabilizer for increased crude oil throughput, and an 150,000 bbl working capacity crude oil storage tank. The purpose of the modular MRUs is to allow for continued drilling activities in the Wild Basin field during the 200 MMCFD train construction.

The gas processing expansion would be located to the north of the existing Plant and within the current Plant fence line as depicted in the map included in Appendix B. The Plant processes gas collected from the Bakken play, specifically the Wild Basin production area. Oasis' drilling spacing unit (DSU) development in Wild Basin will eventually double the throughput from the current 30,000 BPD to 60,000 BPD rate. Crude truck offloading capacity is designed to remain the same at 20,000 BPD. The additional stabilizer and storage tank are designed to accommodate future growth in Wild Basin.

Simplified block flow diagrams depicting the facility's process and an overview plot plan drawing showing the layout of the proposed equipment are included in Appendix A.

1.2 GROSS DESIGN CAPACITY

The Project would result in a Gas Processing Plant designed with a gross capacity of 345 MMSCFD and a Crude Handling Facility with a gross capacity of 80,000 BPD throughput and 350,000 bbl storage. Appendix A includes Plant Design Data, which discusses the Plant nameplate capacity in more detail.

1.3 NET DESIGN CAPACITY

The net capacity of the Plant will be 331.5 MMSCFD of gas, 80,000 BPD of crude, and 33,000 standard barrels per day of NGLs. Approximately 13.5 MMSCFD of gas will be consumed on-site for utility purposes, including powering gas compressors, gas processing heaters, crude stabilization and operation of the flares.

1.4 ESTIMATED THERMAL EFFICIENCY OF THE ENERGY CONVERSION PROCESS AND THE ASSUMPTIONS UPON WHICH THE ESTIMATE IS BASED

This is not applicable to this Project.

1.5 ACRES OF OCCUPANCY

Once the expansion is complete, the Plant will occupy approximately 25 acres of the 160-acre parcel.

1.6 ANTICIPATED SCHEDULE

1.6.1 OBTAINING CERTIFICATE OF SITE COMPATIBILITY

Oasis would like to obtain a certificate of site compatibility by July 1, 2017 but no later than August 1, 2017 to avoid construction activities carrying into the winter of 2018.

1.6.2 COMPLETING LAND ACQUISITION

Land acquisition is complete; Oasis owns the entire 160-acre parcel where the current Plant and expansion activities will occur.

1.6.3 STARTING CONSTRUCTION

Construction will commence immediately following the issuance of the Certificate of Site Compatibility. Expansion of the crude handling facilities is anticipated to begin in the second quarter of 2018.

1.6.4 COMPLETING CONSTRUCTION

Plant construction will require approximately 15-months to complete. Expansion of the crude handling facilities will require approximately 8-months to complete.

1.6.5 TESTING OPERATIONS

Testing or commissioning operations will follow the completion of construction and are anticipated to last for approximately 30-days.

1.6.6 COMMENCING COMMERCIAL PRODUCTION

The Project would go into production by November of 2018.

1.6.7 BEGINNING ANY EXPANSIONS OR ADDITIONS

Oasis is not aware of additional plans to begin other expansions or additional at the Plant.

SECTION 2: STUDIES

2.1 STUDY AREA

The Study Area utilized is 1-mile in diameter and is centered upon the existing Plant property (Project Area or Site). The Project and Study Areas are depicted on the maps found in Appendix B.

2.2 SITE

The Project Area or Site is a 160-acre parcel as depicted in the maps found in Appendix B. Natural resource and cultural resource field surveys were conducted that encompassed the undeveloped portions of the Site (Survey Area).

E3 Environment, LLC (E3) on behalf of Oasis initiated consultations with the federal and state agencies identified below for the purpose of environmental resource assessment relative to the potential impacts associated with the siting and construction of the proposed Project. Please refer to Appendix C for copies of these consultations.

- U.S. Fish and Wildlife Service (USFWS);
- North Dakota Game and Fish Department (NDGFD);
- North Dakota Parks and Recreation Department (NDPRD);
- North Dakota State Historic Preservation Office (SHPO);
- North Dakota Department of Trust Lands (NDDTL);
- North Dakota State Water commission (ND SWC);
- Western Area Water Supply Authority; (WAWSA)
- McKenzie County Water Resource District (MCWRD); and
- McKenzie County Weed Control Board (MCWCB).

Consultations and field studies are summarized as follows:

2.3 ENVIRONMENTAL ANALYSIS

2.3.1 NATURAL RESOURCE INVENTORY

E3 completed a natural resource survey of the Survey Area on March 23, 2017. The survey included an inventory of the presence or absence of wetlands, waterbodies, tree/shrub, noxious weeds, protected species and critical habitat. A copy of the survey report can be found in Appendix D.

2.3.1.1 TREE/SAPLING/SHRUB INVENTORY

The Site is occupied by the existing Plant and associated aboveground appurtenances. No trees, saplings, shrubs or woody vegetation were observed within the Survey Area.

2.3.1.2 WETLAND AND WATERBODIES INVENTORY

National Wetland Inventory (NWI) mapping for the area does not indicate the presence of wetlands or waterbodies within the Site. Field inventory did not identify areas within the Survey Area with wetland indicators: presence of hydrophytic vegetation, wetland hydrology or hydric soils. As such, it was determined that no wetlands or waterbodies are present within the Survey Area. The results of the field studies including wetland and waterbodies survey can be found in its entirety in Appendix D.

2.3.1.3 WILDLIFE INVENTORY

Wildlife observed on the Site are species commonly associated with agricultural communities. No Federal or state species of concern were observed on the Site.

2.3.2 U.S. FISH AND WILDLIFE SERVICE

2.3.2.1 FEDERALLY PROTECTED SPECIES REVIEW

Under authority of the Endangered Species Act (ESA), the U.S. Fish and Wildlife Service (USFWS) and the Fisheries Service division of the National Oceanic and Atmospheric Administration have identified and maintained a list of species and critical habitats that have been afforded protection under the ESA. The ESA also provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they live.

E3 accessed the USFWS' Information for Planning and Consultation (IPaC) system on February 28, 2017 and completed their online consultation process. The following listed species were identified by IPaC as having the potential to occur within the Study Area:

- Interior least tern (*Sterna antillarum athalassos*) – Endangered
- Piping plover (*Charadrius melodus*) – Threatened
- Rufa red knot (*Calidris canutus rufa*) – Threatened
- Whooping crane (*Grus americana*) – Endangered
- Pallid sturgeon (*Scaphirhynchus albus*) – Endangered
- Dakota skipper (*Hesperia dacotae*) – Threatened
- Gray wolf (*Canis lupus*) – Endangered
- Northern long-eared bat (*Myotis septentrionalis*) - Threatened

On March 7, 2017, E3 on behalf of Oasis provided the USFWS with Project information for the purpose of providing the Agency the opportunity to comment on the Project and to identify potential impacts to resources under the Agency's purview. A response from the USFWS was received on April 25, 2017 documenting the completion of Agency review, no concerns were raised. Refer to Appendix C for a record of agency correspondence.

E3 has reviewed the available data describing the life history, critical habitat, and conservation measures associated with each species as well as completed field studies to evaluate the potential effects of the Project on these resources, the results of these efforts are as follows. Appendix D contains the Natural Resource Survey Report.

Interior least tern: The interior populations of the Least tern have historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to congregate in colonies, utilizing sandbar habitat common to larger rivers. The Missouri River is located approximately 13-miles north of the Project. The Least tern is found in North Dakota during the late spring and summer breeding season (mid-May through late August, with the peak of the nesting season occurring from mid-June to mid-July). Desktop analysis supported with field studies have concluded that no suitable habitat is present within the Project Area; therefore, impacts to the Least tern are not anticipated.

Piping plover: The Piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, and river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25 percent of the area. Breeding season in North Dakota occurs mid-April through August. Desktop analysis supported with field studies have concluded that no suitable habitat is present within the Project Area; therefore, impacts to the Piping plover or its designated critical habitat are not anticipated.

Rufa red knot: The Rufa red knot migrates between breeding grounds in Canada and wintering grounds in South America. Migratory behavior and habitat requirements of this species are poorly understood particularly for those populations occupying the midcontinent flyways. Inland stopovers include the Mississippi Valley, Great Lakes and Great Plains. Desktop analysis supported with field studies have concluded that no suitable habitat is present within the Project Area; therefore impacts to the Rufa red knot are not anticipated.

Whooping crane: The whooping crane is a large bodied marsh species that breeds primarily in Canada and winters in the Gulf of Mexico. This species has been closely studied and monitored in recent years due to its small population. North Dakota provides migratory habitat for the species, providing roosting and feeding opportunities during migration. This species prefers larger wetland complexes for roosting habitat, typically using adjacent uplands for foraging opportunities. The Project is located within the fenced perimeter of an existing facility, a prominent feature within the existing landscape, which would serve as a deterrent to migrating cranes arriving in the vicinity of the Project. As such, impacts to the whooping crane are not anticipated.

Pallid sturgeon: The pallid sturgeon's preferred habitat includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats and requiring extensive microhabitat diversity. In North Dakota, reaches of the Missouri River have been cited as providing suitable habitat for the pallid sturgeon. The Missouri River is located approximately 13-miles to the north and does not cross the Project Area, as such, impacts to the pallid sturgeon are not anticipated.

Dakota skipper: Dakota skippers require untilled, high-quality prairie. Habitat preferred by the skipper is wet-mesic prairie with little topographic relief on near-shore glacial lake deposits and in rolling native-prairie terrain over gravelly glacial moraine deposits. The closest designated critical habitat is located approximately 18-miles to the north of the Project. Larvae feed on grasses, favoring little bluestem (*Schizachyrium scoparium*). Adults commonly feed on nectar of flowering native forbs such as harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*). This species is not known to disperse widely and has low mobility, dispersing a maximum of 0.6-mile. The proposed Project site has primarily been used as cultivated cropland and has been managed as such for several years. Desktop analysis supported by field studies show that no suitable habitat is present within the Project Area; therefore, impacts to the Dakota skipper are not anticipated.

Gray wolf: The gray wolf is a large carnivore that through conservation measures has experienced strong population recovery, particularly in the Great Lakes states of the upper Midwest. As populations rebound, individuals may break from packs to explore opportunities to establish packs in unoccupied territory. Roaming individuals can cover great distances without establishing viable breeding populations in previously unoccupied habitat(s). This species is not tolerant of human disturbance and will tend to avoid interaction with humans. The activities associated with this Project and the current Plant operation are likely serve as a deterrent to this species, impacts are not anticipated.

Northern long-eared bat: The northern long-eared bat (NLEB) roosts underneath bark, in cavities, or in crevices of both live and dead trees. Populations have also been found in cool environments such as caves and mines, and prefer to spend winter hibernating in locations with high humidity and no air currents. The Final 4(d) rule exempts incidental take of the NLEB from all activities occurring in areas that have not been affected by white-nose syndrome. The Project occurs outside of the USFWS white-nose syndrome buffer zone; as such, there are no restrictions for Project activities. Additionally there no potential habitat will be impacted by the project thus the Project will not impact this species.

2.3.2.2 U.S. FISH AND WILDLIFE SERVICE MIGRATORY BIRD TREATY CONSULTATION

USFWS is responsible for the protection of migratory birds; management of this responsibility has largely focused on protection of the birds while on their breeding grounds during the breeding season. It is generally understood that the USFWS defines the breeding season in this region as typically occurring annually from March 15 through July 15.

On March 7, 2017, Project specific consultations were initiated with the Bismarck, North Dakota office of the USFWS. A response from the agency is pending. See Appendix C for a copy of the correspondence.

2.3.2.3 U.S. FISH AND WILDLIFE SERVICE MANAGED LANDS

Conservation programs such as Waterfowl Production Areas, wetland and grassland easements represent an important tool used by the USFWS to identify and manage high quality wildlife habitat. A review of public records failed to identify any of these USFWS managed lands in the Study Area.

On March 7, 2017, Project specific consultations were initiated with the Bismarck, North Dakota office of the USFWS. A response from the agency is pending. See Appendix C for a copy of the correspondence.

2.3.3 NORTH DAKOTA GAME AND FISH DEPARTMENT

The NDGFD have oversight of the state's game and protected species. On March 7, 2017, Project specific consultations were initiated with the NDGFD. A response was received on April 3, 2017; the Agency did not believe the Project would have adverse effects on wildlife or wildlife habitat including state species of conservation priority. See Appendix C for a copy of the correspondence.

2.3.4 NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

The NDPRD maintains a database comprised of the location and recorded occurrences of plant and animal species of special concern.

On March 7, 2017, a consultation letter was sent to the NDPRD requesting a Natural Heritage Inventory review of the Site seeking to confirm the absence of state species of special concern, or state park lands within the Study Area. See Appendix C for a copy of the correspondence. A response from the agency was received on March 22, 2017 stating that there are no documented significant ecological community occurrences of plant or animal species of concern within the Project Area.

2.3.5 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

The SHPO is responsible for managing the historic and archaeological resources of the state. On March 27, 2017, a Class I Cultural Resources Literature Search of SHPO records to identify previously completed cultural resource investigations and previously recorded cultural resources within 1 mile of the Project Site. Sixteen previous inventories and six previously recorded cultural resources were documented within the Study Area. Refer to Appendix E for the complete Cultural Resource Report.

On March 28, and April 4 - 5, 2017, a Class III Cultural Resource inventory of the Site was completed. Archaeologists completed a pedestrian survey of the Site. The Site is generally described as developed agricultural land. No cultural resources were identified by the Class III survey. The Cultural Resources Report and Cultural Resources Report Addendum both recommending a finding of *No Historic Properties Affected* have been submitted to the SHPO. Concurrence for the Cultural Resources Report was received on April 11, 2017; concurrence PO for the Cultural Resources Report Addendum was received on April 28, 2017. Refer to Appendix C and E for records of this communication.

2.3.6 NORTH DAKOTA DEPARTMENT OF HEALTH

The NDDoH administers regulatory programs governing the state's interest in air quality and water discharges. Oasis is currently engaged at various stages in the permitting process with the NDDoH with respect to air emissions and water discharges.

2.3.6.1 NORTH DAKOTA DEPARTMENT OF HEALTH AIR QUALITY

The NDDoH administers the state's air quality protection programs. Oasis is applying for the required permits for construction and operation of new emission sources. Equipment such as gas-driven compressors, heaters, storage tanks, flares, and other ancillary equipment could be regulated emission sources and will be included in the permit application required by NDDoH for the construction and operation of air emission sources.

2.3.6.2 NORTH DAKOTA DEPARTMENT OF HEALTH POLLUTION DISCHARGE ELIMINATION SYSTEM

The North Dakota Pollution Discharge Elimination System (NDPDES) is regulatory program that regulates water discharges. Oasis will procure the appropriate NDPDES permits from the NDDoH for regulated discharges associated with the construction and operation of the Plant.

Construction Stormwater: Oasis will implement best management practices (BMPs) and existing stormwater management systems to manage run-off in a manner that will minimize exposure to chemicals, waste, or petroleum products as well as describing to minimize off-site transfer of sediments. If the site cannot be managed in such a way Oasis would seek coverage under NDR10-0000 *Authorization to Discharge Under the*

North Dakota Pollutant Discharge Elimination System general permit for construction sites

Construction site dewatering: Oasis will be seeking coverage under NDG07-0000 *Authorization to Discharge Under the North Dakota Pollutant Discharge Elimination* a general permit for various temporary discharges including both construction site dewatering and hydrostatic test water discharges. Site dewatering is required when groundwater infiltrated excavations (e.g., foundations and trenches) must be removed. Discharges are managed to minimize scouring and off-site transfer of sediments. Discharges are monitored and water quality samples will be collected, analyzed and reported as stipulated by the general permit.

Industrial Discharges: Oasis understands that the plant will be exempt from a requirement to obtain an industrial discharge permit of stormwater. The facility SIC code is 1321, which is exempt from stormwater permit requirements. Additionally, Oasis has developed a no-contact facility, which is also eligible for exempt status, but requires an NDDoH review of the facility and stormwater control measures.

2.3.7 NORTH DAKOTA DEPARTMENT OF TRUST LANDS

The NDDTL is responsible for managing surface acres and mineral interests held in trust for various schools and institutions. On March 7, 2017, E3 sent a Project consultation letter to the NDDTL allowing the agency the opportunity to review the Project Area and confirm the presence or absence of surface or mineral trust lands located within the Study Area or Project Site. Agency responses were received on April 10, and April 11, 2017; there are no mineral or school trust lands within the Study Area or Site; refer to Appendix C for a complete record of this communication.

2.3.8 NORTH DAKOTA STATE WATER COMMISSION

The NDSWC administers water appropriation, drainage and sovereign lands permit programs and may have relevant information regarding rural water supply systems.

On March 7, 2017, E3 on behalf of Oasis initiated consultations with the NDSWC requesting comments regarding the presence or absence of sovereign lands and/or rural water systems within the Study Area and seeking agency guidance regarding any potential required permits. The NDSWC responded in a letter dated March 29, 2017 identifying the following:

- No permits relative to the National Flood Insurance Program (NFIP) are required;
- The existing Plant is permitted (Permit No. 6913) to utilize seven acre-feet per year for industrial use, if expansion activities result in the need to utilize more water per year a permit modification/approval would be required; and

- It is highly likely that a drainage permit is required for the Plant.

Oasis received clarification from the NDSWC on April 6, 2017 stating that the NDSWC original response letter incorrectly assigned Permit No. 6913 to the existing Plant; this permit is for an ONEOK facility that is operated in the same section. The existing Plant does not require a permit for industrial use of ground or surface water.

Oasis is coordinating with McKenzie County via the Conditional Use Permit process, through this process it will be determined if a drainage permit is required for the Plant.

2.3.9 WESTERN AREA WATER SUPPLY AUTHORITY

The WAWSA has jurisdiction over a five county region, which includes Burke, Divide, McKenzie, Mountrail and Williams. WAWSA utilizes a combination of Missouri River treated at the Williston Regional Water Treatment and ground water treated by the R&T Water Supply Commerce Authority's Water Treatment Plant in Ray to supply and meet the needs of municipal, rural and industrial water users in the five county area. On March 7, 2017 E3 on behalf of Oasis initiated consultation with the WAWSA requesting comments regarding the presence of reservoirs or municipal water supplies within the Study Area. A response was received on March 16, 2017 from the WAWSA stating that they operate a 12-inch water transmission main, which is located along the western edge of the property. Project activities are not planned to affect this water line; Oasis would coordinate as necessary with WAWSA if Project activities would affect this transmission main.

2.3.10 MCKENZIE COUNTY WATER RESOURCE DISTRICT

The MCWRD is responsible for managing drains, ditches and or other water and or drainage systems regulated by the county. On March 7, 2017, E3 on behalf of Oasis initiated consultations with the MCWRD requesting comments regarding the presence or absence of MCWRD assets within the Study Area. Agency response is pending.

2.3.11 MCKENZIE COUNTY WEED CONTROL BOARD

The MCWCB maintains records for the location and species of noxious weeds within the county. On March 7, 2017, E3 on behalf of Oasis initiated consultations with the MCWCB. The MCWCB responded on March 9, 2017 requesting that a Weed Control Plan be submitted. A Weed Control Plan was prepared and submitted to the MCWCB; approval was received on April 24, 2017. Refer to Appendix C for a record of this correspondence and Weed Control Plan.

SECTION 3: NEED FOR FACILITY

3.1 ANALYSIS OF NEED BASED ON PRESENT AND PROJECTED DEMAND, INCLUDING SYSTEM STUDIES

Oasis' core production area, the Wild Basin, is a small geographical pocket located in McKenzie County, North Dakota. The NDIC reported in March of 2017 that oil and gas production had increased from December to January. Additionally the NDIC reports that drilling rig count is slowly rising and operators are shifting from running a minimum number of rigs with incremental increases throughout 2017. Oasis estimates that the reservoir of gas in its Wild Basin Bakken Play to be 200-300 MMSCFD. Additional rigs, DSU development, and Oasis' growing gathering infrastructure is expected to increase oil production in Wild Basin for Oasis and potential third party operators wishing to tie into Oasis' gathering system. The proposed Project would provide additional processing capacity, crude handling, and further reduce trucking and flaring at production facilities across the region by as much as 4-7 MMSCFD.

3.2 DESCRIPTION OF FEASIBLE ALTERNATIVE METHODS OF SERVING THE NEED

A thorough analysis of all reasonable alternatives was conducted. Various factors were considered by Oasis, including engineering, economic and environmental factors in multidisciplinary and iterative fashion. This process identified the following alternatives.

No Action Alternative: Regional production would continue to be constrained by gas processing and crude handling capacity, resulting in continued flaring at the well head and processing plants and the loss of natural resources as well as increased truck traffic. This alternative is not desirable.

New Plant Siting: The alternative to site a new plant was considered, however it was found to have greater indirect impact to area resources as each alternative site considered would require installation of additional infrastructure (e.g.; access roads, utilities, and delivery pipelines) and potentially increase the distance from Oasis' existing gas and oil gathering system which currently delivers product to the Plant. This alternative is not desirable.

3.3 OASIS'S MOST RECENT 10-YEAR PLAN

Oasis' most recent 10-year plan was filed November 20, 2015 (PU-15-742) and can be found in Appendix F.

SECTION 4: LOCATION

4.1 STUDY AREA

Oasis' Study Area was a 1-mile area centered upon the Project Site as depicted on the maps in Appendix B. E3 completed a resource inventory of the Study Area which included agency consultations, GIS mapping, internet based research and desktop analysis. These efforts were augmented with natural and cultural resource surveys of the Site.

4.2 IDENTIFY AND MAP CRITERIA

The information presented in this section was developed to demonstrate conformation with the Commission's siting criteria for Energy Conversion Facilities. Oasis has conducted a thorough inventory of the Study Area and evaluated the resources that occur within the Study Area and Site to assess the compatibility of the Plant with the state's siting criteria. The following sections identify and discuss the presence or absence of siting criteria within the Study Area or Site. Where siting criteria is identified, its location is shown on the maps in Appendix B.

4.3 EXCLUSION AREA INVENTORY AND ANALYSIS

Exclusion areas are geographic areas that should be excluded from consideration when siting an energy conversion facility. The following table and text identify and discuss exclusion areas identified within the Study Area or Site.

Table 1: Exclusion Areas

Exclusion Area		Project Site	Within Study Area
Federal			
	National Parks or Memorial Parks	No	No
	Historic Sites, Districts, or Landmarks	No	No
	Natural Landmarks or Monuments	No	No
	Wilderness Areas or Wildlife Areas	No	No
	Wild, Scenic or Recreational Rivers	No	No
	Wildlife Refuges or Grasslands	No	No
State			
	Parks, Forest or Forest Management Lands	No	No
	Historic Sites, Monuments, or Historical Markers	No	Yes
	Archaeological Sites	No	Yes
	Grasslands	No	No
	Wild, Scenic or Recreational Rivers	No	No

Exclusion Area		Project Site	Within Study Area
	Game Refuges or Game Management Areas	No	No
	Management Areas	No	No
	Nature Preserves	No	No
County			
	Parks	No	No
	Recreation Areas	No	No
	Municipal Parks	No	No
	Parks Administered by other Governmental Subdivisions	No	No
Other			
	Prime Farmland	No	No
	Irrigated Farmland	No	No
	Critical habitat for protected species	No	No
	Areas within one 1,200 feet of the geographic center of an ICBM launch or launch control facility.	No	No

4.3.1 FEDERAL RESOURCE REVIEW

Based upon a review of publicly available information, Oasis has concluded that there are no national parks, memorial parks, historic sites and landmarks, monuments, or wilderness areas within the Project Area or Site.

4.3.2 STATE RESOURCE REVIEW

Based upon a review of field surveys and publicly available information, Oasis has concluded that there are no state parks, monuments, historical markers, or nature preserves within the Study Area or Site.

The Class I literature review did identify one historic site and one archaeological site within the Study Area. No historic sites and archaeological sites were identified within the Site. Refer to Appendix E for additional information.

4.3.3 COUNTY RESOURCE REVIEW

Based upon a review of publicly available information Oasis has concluded that there are no county parks, recreation areas, municipal parks, or parks owned by other subdivisions of government bodies within the Study Area or Site.

4.3.4 PRIME FARMLAND

Oasis conducted a review of the U.S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey. No prime farmland was found within the Study Area or Site.

4.3.5 IRRIGATED FARMLAND

Oasis's investigation found no evidence of irrigation within the Study Area or Site.

4.3.6 PROTECTED SPECIES RESOURCE REVIEW

Oasis has conducted field surveys of the Site and reviewed published information and has concluded that there are no areas critical to the life stages of threatened or endangered animal or plant species within the Study Area or Site. Oasis has initiated consultations with agencies to confirm this conclusion. Refer to Appendix C for a record of these consultations.

4.3.7 CRITICAL HABITAT FOR PROTECTED SPECIES

Based upon consultations with agencies and surveys of the Site, Oasis has confirmed the absence of critical habitat within the Study Area and Site. Refer to Appendix C for a record of agency correspondence.

4.3.8 AREAS WITHIN 1,200 FEET OF ICBM LAUNCH OR LAUNCH CONTROL FACILITY

Upon review of tabular location data and aerial imagery compiled by the University of Wyoming, there are no areas within 1,200 feet of the geographic center of an Intercontinental Ballistic Missile (ICBM) launch or launch control facility located within the Study Area or Site.

4.4 AVOIDANCE AREA INVENTORY AND ANALYSIS

Avoidance areas are geographical areas, which may not be approved as a site for an energy conversion facility unless the applicant shows that under the circumstances there is no reasonable alternative.

Table 2: Avoidance Areas

Avoidance Area		Project Site	Within Study Area
Other			
	Other Historic Resources not meeting Exclusion Areas criteria	No	Yes
	Areas within City Limits or Military Installation Boundaries	No	No
	Areas within Known 100-Year Floodplains	No	No

Avoidance Area		Project Site	Within Study Area
	Areas of Known Geologic Instability	No	Yes
	Woodlands and Wetlands	No	Yes
	Areas of Recreational Significance not categorized as Exclusion Areas	No	No

4.4.1 OTHER HISTORICAL RESOURCES NOT MEETING EXCLUSION AREA CRITERIA

Oasis conducted a Class I literature review identified three previously recorded resources within the Study Area that have been determined to be not eligible for the National Register of Historic Places (NHRP). No historical resources not meeting the exclusion area criteria were identified within the Site.

4.4.2 AREAS WITHIN CITY LIMITS OR MILITARY INSTALLATION BOUNDARIES

Oasis has confirmed that the Study Area and Site are not located within city limits or within the boundaries of military installations.

4.4.3 AREAS WITHIN KNOWN 100-YEAR FLOODPLAINS

E3 accessed the FEMA flood map service tool on April 10, 2017 and there are no special flood hazard areas mapped within the Study Area or Site, as such no areas of the Project are within a known 100-year floodplain.

4.4.4 AREAS OF KNOWN GEOLOGIC INSTABILITY

There are no known areas of geological instability within the Site.

Sink holes are known to occur in North Dakota but are more closely related to mining activities; two abandoned mines are located within the Study Area, none are located within the Site.

The potential for landslides was also evaluated. Earth movement of this nature is closely associated with areas of great topographic relief, high gradient slopes, recent deposits that have yet to reach a stable angle of repose, or where underground water movement may create a slurry of rock and mud resulting in a subsidence. No such features were identified within the Site or Study Area.

4.4.5 WOODLANDS AND WETLANDS

Natural resource studies of the Site augmented GIS analysis were utilized to determine the presence/absence of wetland and woodland resources of the Study Area. Woodlands associated with waterways and property/section lines occur within the Study Area but

none were found on the Site. No wetlands were identified within the Site; however they do occur in the Study Area.

4.4.6 AREAS OF RECREATIONAL SIGNIFICANCE NOT CATEGORIZED AS EXCLUSION AREAS

No areas of recreational significance occur within the Study Area or Site.

4.5 FACTORS TO BE CONSIDERED IN EVALUATING APPLICATIONS AND DESIGNATION OF SITES, CORRIDORS AND ROUTES (SECTION 49-22-09, N.D.C.C.)

4.5.1 SELECTION CRITERIA

The selection criteria require a study of environmental impacts and changes in land use that may result from the siting of the proposed facility. Through this process, Oasis proposes that it has successfully avoided or minimized these effects to the maximum extent practicable, for Commission review and approval.

4.5.1.1 AGRICULTURAL IMPACT ASSESSMENT

Agricultural Production: The Project will not remove any tillable land from agricultural production, as the proposed expansion activities will occur within the existing Plant property.

Family Farms and Ranches: The property has been owned and operated by Oasis since 2014. The Site is approximately half of a mile from the nearest occupied farm residence. No impacts to family farms or ranches are anticipated.

Lands Suitable for Irrigation: The Project will not impact irrigated lands.

Surface Drainage: The existing surface drainage pattern at the Site is to the north into an unnamed tributary, which flows northwest 2.4 miles to its confluence with Tobacco Garden Creek. Surface water drains from the site northwards into a shallow ditch and flows through a culvert across 31st Street into the unnamed tributary. Oasis has studied the Site with respect to stormwater run-off management and has determined that the most effective means of controlling stormwater flows will be to implement certain engineered structural control measures to manage run-off from the plant in combination with a passive system that utilizes the natural drainage of the undeveloped portions of the Site. These open green spaces will serve as natural filtration of sediments and shall promote onsite infiltration.

Ground Water: The aquifers that underlay North Dakota are typically associated with two types of geologic formations, specifically bedrock and glacial drift. Bedrock aquifers in the area are known to occur from 3,000 to 5,000 feet below the surface while glacial drift aquifers are known to occur at depths of from a few feet to up to 500 feet below the

surface. Ground excavation associated with the Project will generally be limited to depths no greater than 8 feet; as such, it is unlikely that the Project would have significant or permanent impact on groundwater resources.

Agricultural Quality of the Cropland: No agricultural land will be acquired for the Plant. No land will be permanently removed from agricultural production. No other impact to agricultural lands is anticipated.

Impact Upon the Availability and Adequacy of Local Public Services: The potential impacts to local public services including law enforcement, fire department, health care, public schools and recreational facilities are anticipated to be temporary in duration and minimal in their overall effect to existing programs and systems.

Construction activities are anticipated to occur over a 15 to 18 month period. During this period there will be an influx of employees ranging from laborers, skilled trades, technicians, engineering and environmental professionals. The work force will typically engage 100 individuals, with periods where the workforce will increase to levels of up to 300 individuals for a period of up to 6 months.

Area resources may experience increased demand on services with the addition of construction workers temporarily residing in the area. The peak demands will likely occur in late spring through the summer of 2018. The most noticeable impact may be due to an increase in vehicle traffic associated with the plant expansion activities.

4.5.1.2 THE IMPACTS UPON

Local Institutions: Due to its proximity to the Project Site, Watford City may see the greatest impact from the Project. These impacts from facility expansion construction will be temporary, as the majority of the construction will be completed by 2018. Once expansion activities are complete, Oasis will continue to utilize their existing employees to operate the facility. Generally, the impacts will be beneficial to the local economy during construction due to the addition of revenues from outside of the community being spent on goods and services locally.

Noise-Sensitive Land Uses: The Project has been sited approximately 6 miles from Watford City in a rural setting, effectively isolating the Project from the majority of sensitive receptors. Local residents may experience additional motor vehicle volumes on area roadways, but the noise associated with vehicles will be similar to existing background levels and occur largely during normal business hours.

Rural Residences and Businesses: The Project is located approximately 6 miles from Watford City. Residents may experience additional traffic congestion and an increase in commerce in response to the influx of temporary workers purchasing goods and services. The Plant will likely benefit the local economy for both the near and long term.

Aquifers: Water demands during and after construction are anticipated to be minimal and unchanged from current Plant operation.

Human Health and Safety: Oasis promotes a safe and healthy workplace during construction and operations of all its assets. Oasis implements a corporate policy that meets or exceeds federal and state laws, rules and regulations applicable to health, safety, and the environment. Their policy is enforced and adhered to by all regular and contract employees. Oasis governs operations and construction activities with various safe work procedures designed to protect property and personnel and maintaining regulatory compliance.

Animal Health and Safety: The wildlife currently inhabiting the Project Area are common and are generally mobile. The local wildlife inhabitants will be displaced by the Project without a measurable impact to the viability of these populations. No species of special concern are anticipated to experience direct impacts due to expansion activities or operation of the Plant.

Plant Life: The expansion activities will occur entirely within then existing Plant property. No loss of natural vegetation will occur as a result of the Project. No species of special concern will be impacted by the Project.

Temporary and Permanent Housing: The region has experienced decreased demand for permanent and temporary housing, resulting from the downturn in oil and gas development. The Project will introduce temporary workers to the area, and as a result, will have a positive effect on the temporary and permanent housing economy.

Temporary and Permanent Skilled and Unskilled Labor: Construction of the Project will require a work force of approximately 100 to 300 temporary employees. The workforce will be comprised of both skilled and unskilled personnel. Skilled labor will include craft workers such as operating engineers, ironworkers, welders, electricians, carpenters and boilermakers. The unskilled workforce will be comprised of common laborers who work closely with the skilled trades.

Once the Project is complete and operational, it will utilize work force currently employed at the Plant. These personnel will be responsible for day-to-day operations, maintenance and support of local gathering assets that supply the Plant.

4.5.2 CUMULATIVE EFFECTS OF THE LOCATION OF THE FACILITY IN RELATION TO EXISTING AND PLANNED FACILITIES AND OTHER INDUSTRIAL DEVELOPMENT

Oasis is not aware of any new planned facilities or industrial developments in the area. As a result, of new processing capacity, there may be development of additional take-away capacity to bring the product to market at some point in the future.

4.6 POLICY CRITERIA

The Commission may give preference to an applicant that will maximize benefits that result from the adoption of the following policies and practices, and in proper case may require the adoption of such policies and practices. The Commission may also give preference to an applicant that will maximize interstate benefits.

4.6.1 RECYCLING OF THE CONVERSION BYPRODUCTS AND EFFLUENTS

Not applicable to this type of project.

4.6.2 ENERGY CONSERVATION THROUGH LOCATION, PROCESS AND DESIGN

The siting of the Plant in close proximity to wellhead and gathering systems reduces emissions associated with shipping raw feed gas over greater distances. The Project will increase the capacity at the existing location thus there is no increase in shipping distance of the raw gas.

Both Gas/Gas and Gas/Liquid exchangers are used to minimize energy input required to cool down the gas to the required dew point. Both of these exchangers are designed with less than 10 degrees Fahrenheit approach temperatures, which help to minimize the load required on the refrigeration compression. Additionally, an economizer is used on the refrigeration portion of the plant to boost plant efficiency.

4.6.3 TRAINING AND UTILIZATION OF AVAILABLE LABOR IN THIS STATE FOR THE GENERAL AND SPECIALIZED SKILLS REQUIRED

Gas plant construction is a specialized niche construction market and the labor force needed to construct the Project will be primarily comprised of a non-local workforce. The primary contractor will be a non-local contractor, supplying specialized skilled labor. Oasis will draw upon the local labor force to supply general laborers. The workforce is anticipated to reach a peak of approximately 300 personnel of which up to 10 percent could be drawn upon locally.

4.6.4 USE OF A PRIMARY ENERGY SOURCE OR RAW MATERIAL LOCATED WITHIN THE STATE

The raw feed gas supplying the proposed Plant will be produced and processed entirely in State. The Plant products will be shipped to delivery points in State and transported out of state.

4.6.5 NONRELOCATION OF RESIDENTS

No residences shall be displaced or require relocation due to the Project.

4.6.6 THE DEDICATION OF AN AREA ADJACENT TO THE FACILITY TO LAND USES SUCH AS RECREATION, AGRICULTURE, OR WILDLIFE MANAGEMENT

Oasis does not own property adjacent to the Site suitable for recreation, agricultural, or wildlife management purposes. The current land use of properties adjacent to the Project is agricultural/range land with the ONEOK Garden Creek Gas Plant located to the southeast (see aerial photograph in Appendix B).

4.6.7 ECONOMICS OF CONSTRUCTION AND OPERATION

Oasis has designed the current Plant and expansion activities to take advantage of the Site's proximity to existing electrical supply and gathering system piping for its location. The Plant will use an existing gathering line system to deliver raw feed stock to the Plant from the gathering fields and generate new delivery points for processed natural gas, NGLs and its constituents. The Plant's location and design are clear examples of creating an economy of scale Project concept, achieving additional production capacity in the most minimally intrusive and most efficient way possible, in terms of new infrastructure development.

4.6.8 SECONDARY USES OF APPROPRIATE ASSOCIATED FACILITIES FOR RECREATION AND THE ENHANCEMENT OF WILDLIFE

Construction of the Project will result in the development of an industrial facility and a setting not typically suitable for recreational or wildlife application.

4.6.9 USE OF CITIZEN COORDINATING COMMITTEES

Oasis has established and maintains a good relationship with the local residents through its presence operating gathering systems in the area. Through these relationships, Oasis has maintained several grass roots communication channels to inform local residents regarding the developments associated with the Plant.

4.6.10 A COMMITMENT OF A PORTION OF THE TRANSMITTED PRODUCT FOR USE IN THIS STATE

The raw feed gas supplying the proposed Plant will be supplied and processed entirely in state. The products of the Plant will be transported to delivery or transfer points located both in and out of state.

4.6.11 LABOR RELATIONS

Oasis does not anticipate encountering any adverse labor relations on this Project. The labor market in the Project area is supportive of the oil and gas industry.

4.6.12 THE COORDINATION OF FACILITIES

Oasis owns and operates the Wild Basin Gas Plant and Crude Handling Facility, all Project activities will occur on property owned by Oasis and the Plant currently processes gas that is delivered via Oasis' gas gathering system.

4.6.13 MONITORING OF IMPACTS

Oasis will coordinate with its primary contractor regarding the oversight responsibilities for construction activities at the Site. Environmental responsibilities shall be coordinated in the same manner. Oasis will monitor community concerns and will respond to all reasonable concerns brought to attention by community leaders.

4.6.14 PROBLEMS RAISED BY FEDERAL AGENCIES, OTHER STATE AGENCIES, AND LOCAL ENTITIES

Oasis has initiated consultations with federal, state and local authorities who have may have an interest in the Project. The purpose of these consultations is the identification of potential resource issues related to the Project. Below is a summary of agency comments received. Oasis will address any future concerns raised by agencies.

North Dakota State Water Commission:

The NDSWC raised questions about the need for modification to an existing water use permit, through additional correspondence Oasis confirmed with the Agency that the permit in question was issued to the ONEOK Gas Plant located to the southeast of the Project; refer to Appendix C for a record of this communication.

Oasis is coordinating with the NDSWC regarding the need for a drainage permit.

Western Area Water Supply Authority:

The WAWSA provided shapefile data with the location of their water transmission line, which crosses the Project Site along the western edge. The planned Project activities will not affect the transmission line. Additionally the WAWSA provided the location of water lines operated by the MCWRB, Oasis will coordinate with the MCWRB if the Project will affect their water lines. The MCWRB has not provided a response to the Project consultation letter.

McKenzie County Weed Control Board:

The MCWCB has requested that Oasis prepare and submit a Weed Control Plan. Oasis has submitted and received approval for their Weed Control Plan. A copy of this plan can be found in Appendix C with the McKenzie County Weed Control Board correspondence.

SECTION 5: MITIGATIVE MEASURES

Oasis' commitment to minimize environmental impacts and to comply with permits and associated permit conditions/stipulations are key mitigation elements. The utilization of an existing facility through the redesign of existing equipment and the addition of key pieces of equipment all within an existing developed facility will maximize efficiencies while minimizing impacts to the environment. This combination of actions effectively mitigates the impacts of the Project.

SECTION 6: LIST OF PREPARERS

David Copeland, Regulatory Specialist

Oasis Petroleum, N.A., 1001 Fannin, Suite 1500, Houston, TX 77002

M.A. Legal Studies, Environmental Law, Texas State University – San Marcos, Texas; and B.S. Business Management, Oklahoma State University – Stillwater, OK. Mr. Copeland has 8 years of regulatory compliance experience, which includes Texas damage prevention rules for underground oil and gas facilities, DOT pipeline safety regulations, as well as Texas' own pipeline safety rules. Mr. Copeland's expertise includes technical writing for state and federal drilling permits, and conditional use permits for county ordinances in North Dakota.

William McCarthy, C.W.B.

Senior Environmental Compliance Analyst

E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

M.S. Wildlife Biology, University of Minnesota – Twin Cities; and B.S. Wildlife Biology, Michigan State University. Mr. McCarthy is an environmental compliance analyst with 20 years of environmental consulting experience working with various energy assets and regulatory agencies. As a compliance analyst, he has managed the environmental requirements for facility siting, pipeline routing, federal licensing and various federal, state and local permits. Mr. McCarthy is a certified wildlife biologist, and in this role conducts and coordinates field studies, agency consultations, mitigation and avoidance plans.

Katie Schmidt, EIT

Environmental Engineer and Senior Consultant

E3 Environmental, LLC, 871 West Jefferson Avenue, St. Paul, MN 55102

B.S. Civil Engineering with an emphasis in Environmental Engineering-Iowa State University. Ms. Schmidt is a Senior Environmental Consultant with ten years of experience working with various energy assets and regulatory agencies. As a consultant, she has managed multiple pipeline projects supporting clients through the construction permitting and siting processes, which included coordination with various federal, state and local agencies.

Jon Knudsen

Wildlife Biologist

E3 Environmental, LLC, 871 Jefferson Avenue, St. Paul, MN 55102

M.S. Biology, Idaho State University – Pocatello, ID; and B.S. Zoology, University of Wisconsin – Madison, WI. Mr. Knudsen has 10 years of environmental consulting and biological monitoring experience, which includes horizontal project management of oil, gas, wind, and mining projects in Colorado, Wyoming, Montana, and North Dakota. His expertise includes surveying sensitive species, writing technical reports, and consulting with regulatory agencies to ensure clients are in compliance with associated rules and regulations. In addition, Mr. Knudsen specializes in training energy development companies on wildlife-related issues, including the Endangered Species Act and Migratory Bird Treaty Act.

Abraham Ledezma, M.S., RPA

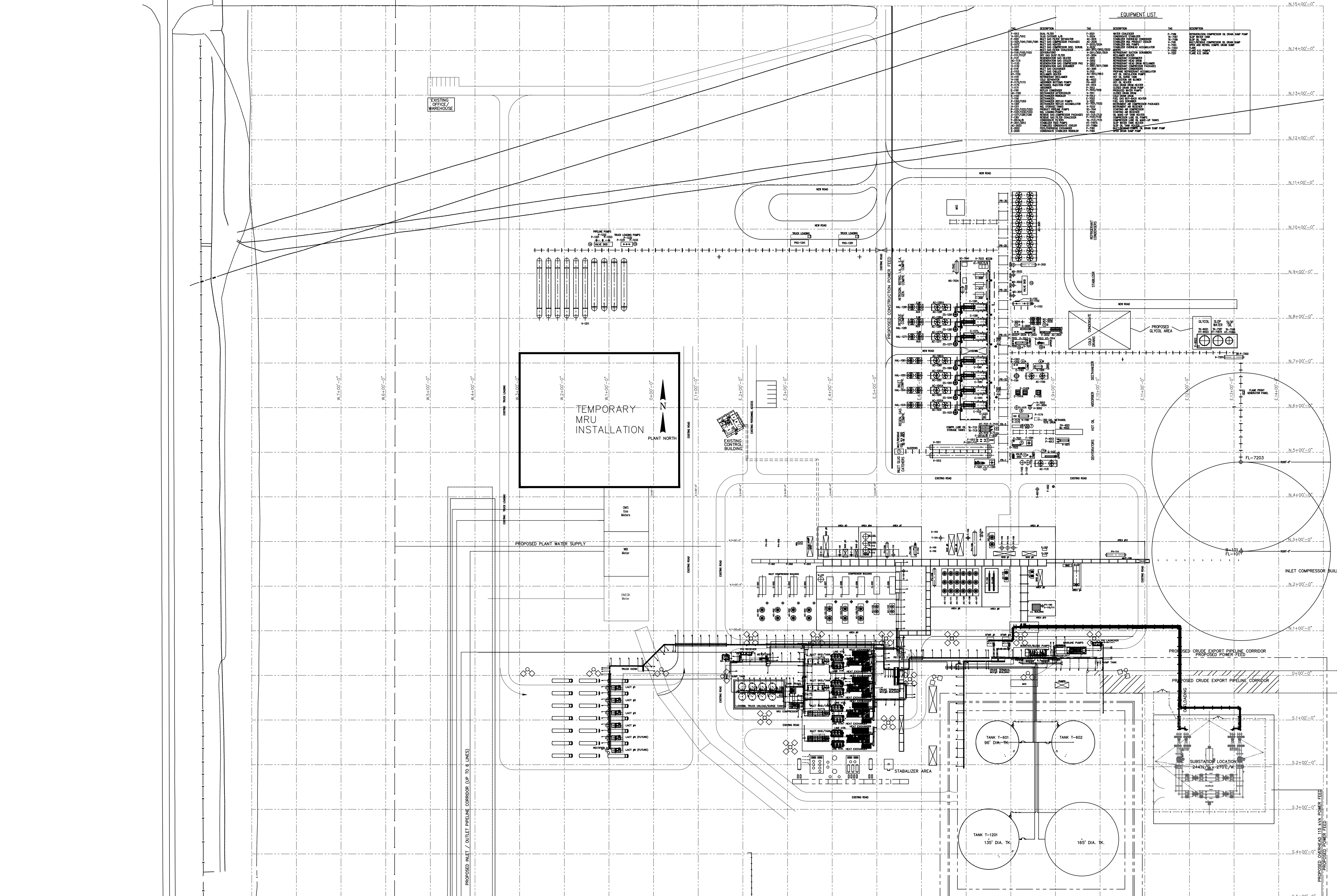
Principal Investigator

In Situ Archaeological Consulting, LLC Manuela Drive, Chaska, MN 55318

M.S. Applied Anthropology, Missouri State University; and B.A. Anthropology, Emphasis in Archaeology, Minnesota State University - Moorhead. Abraham is a Principal Investigator at In Situ with nationwide experience as an archaeologist and cultural resource specialist. Mr. Ledezma has 11 years of experience supervising and conducting cultural resource management surveys, performing test excavations, and developing background literature reviews. His experience includes reconnaissance surveys, cultural resource inventories (Class I, II, III), test excavations, archival reviews and artifact analysis. Abraham is certified by the Minnesota Office of the State Archaeologist (OSA), Indiana DNR Division of Historic Preservation & Archaeology (IN SHPO), Ohio State Historic Preservation Office (OH SHPO), and North Dakota SHPO to conduct archaeological surveys. In addition, Abraham meets the requirements for the Secretary of the Interior's Guidelines for Professional Qualifications in Archaeology.

Appendix A

Engineering Documents



NO.	DESCRIPTION	NO.	DESCRIPTION
1-001	WATER CONDENSER	1-700	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-002	WATER CONDENSER	1-701	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-003	WATER CONDENSER	1-702	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-004	WATER CONDENSER	1-703	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-005	WATER CONDENSER	1-704	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-006	WATER CONDENSER	1-705	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-007	WATER CONDENSER	1-706	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-008	WATER CONDENSER	1-707	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-009	WATER CONDENSER	1-708	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-010	WATER CONDENSER	1-709	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-011	WATER CONDENSER	1-710	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-012	WATER CONDENSER	1-711	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-013	WATER CONDENSER	1-712	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-014	WATER CONDENSER	1-713	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-015	WATER CONDENSER	1-714	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-016	WATER CONDENSER	1-715	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-017	WATER CONDENSER	1-716	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-018	WATER CONDENSER	1-717	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-019	WATER CONDENSER	1-718	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-020	WATER CONDENSER	1-719	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-021	WATER CONDENSER	1-720	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-022	WATER CONDENSER	1-721	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-023	WATER CONDENSER	1-722	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-024	WATER CONDENSER	1-723	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-025	WATER CONDENSER	1-724	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-026	WATER CONDENSER	1-725	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-027	WATER CONDENSER	1-726	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-028	WATER CONDENSER	1-727	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-029	WATER CONDENSER	1-728	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-030	WATER CONDENSER	1-729	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-031	WATER CONDENSER	1-730	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-032	WATER CONDENSER	1-731	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-033	WATER CONDENSER	1-732	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-034	WATER CONDENSER	1-733	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-035	WATER CONDENSER	1-734	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-036	WATER CONDENSER	1-735	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-037	WATER CONDENSER	1-736	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-038	WATER CONDENSER	1-737	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-039	WATER CONDENSER	1-738	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-040	WATER CONDENSER	1-739	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-041	WATER CONDENSER	1-740	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-042	WATER CONDENSER	1-741	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-043	WATER CONDENSER	1-742	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-044	WATER CONDENSER	1-743	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-045	WATER CONDENSER	1-744	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-046	WATER CONDENSER	1-745	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-047	WATER CONDENSER	1-746	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-048	WATER CONDENSER	1-747	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-049	WATER CONDENSER	1-748	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-050	WATER CONDENSER	1-749	RECYCLING COMPRESSOR OIL DRAIN PUMP
1-051	WATER CONDENSER	1-750	RECYCLING COMPRESSOR OIL DRAIN PUMP

NOTES:

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REV	DATE	REVISION	BY	CHKD	APPROV. BY	PROJ ENGR
P	4/18/17					



WATFORD CITY, ND 200 MMSCFD WILD BASIN II GAS PROCESSING FACILITY		McKENZIE COUNTY NORTH DAKOTA	
DES.:	SCALE: 1=100	JOB NO.:	17100
DR.:	FILE:	DWG.NO.:	PP-200
CH.:	DATE:	REV.:	P
APP.:	DATE:		

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Attachments:

Questar Energy Services Inlet Gas Sample Analysis

WBI Energy Residue Gas Pipeline Specification

PROJECT DESIGN DATA

1.1 PLANT CAPACITY

After addition of a 200 MMSCFD train and the 65 MMSCFD Mechanical Refrigeration Units (MRUs), the gross capacity of the Wild Basin Facility will be 345 MMSCFD.

The net capacity of the plant will be 331.5 MMSCFD of gas and 33,000 standard barrels per day of NGLs. Approximately 13.5 MM CFD of gas will be consumed on-site for utility purposes, including powering gas compressors, gas processing heaters, crude stabilization and operation of the flares.

1.2 PLANT INLET GAS ANALYSIS

Refer to attached Gas Sample Analysis conducted by Questar Energy Services on March 15, 2017.

1.3 RESIDUE GAS COMPOSITION

Attached you will find the specifications for the residue gas pipeline. The table below details the residue gas composition.

Wild Basin Gas Plant	
Residue Gas Composition to WBI	
Components	Mol %
Methane	74.90%
Ethane	22.37%
Propane	0.03%
i-Butane	0.00%
n-Butane	0.00%
i-Pentane	0.00%
n-Pentane	0.00%
n-Hexane	0.00%
n-Heptane	0.00%
n-Octane	0.00%
Carbon Dioxide	0.77%
Nitrogen	1.92%
H2S	0.00%
TOTAL	100.00%

1.4 NGL PRODUCT SPECIFICATIONS

Specification Point	Test Method (Latest Issue)	Specification
Composition	Gas Chromatography, Extended Analysis	
Carbon Dioxide, Maximum	OPPL Test No. 7, GPA 2177	Note 1
Methane, Maximum	OPPL Test No. 7, GPA 2177	Note 2
Aromatics, Maximum	OPPL Test No. 7A, GPA 2186	10.00 LV%
Olefins, Maximum	OPPL Test No. 7A, GPA 2186	Note 3
Vapor Pressure		
At 100°F psig, Maximum	OPPL Test No. 1, ASTM D-1267	600
Corrosiveness		
Copper Strip at 100°F	OPPL Test No. 9, ASTM D-1838	No. 1
Volatile Sulfur		
PPM by Weight, Maximum	OPPL Test No. 11, ASTM D-2784	1200 ppm
Hydrogen Sulfide	OPPL Test No. 12, ASTM D-2420	Pass
Distillation		
End Point at 14.7 psia, °F, Maximum	OPPL Test No. 8, ASTM D-216	375°F Note 4
Color		
Saybolt Number, Minimum	OPPL Test No. 16, ASTM D-156	+27 Note 4
Dryness		
Free Water	OPPL Test No. 15, Inspection	None @ 34°
Product Temperature		
Product containing 65 mole % or more Ethane, °F, Maximum		90° F
Product containing less than 65 mole % Ethane, °F, Maximum		110° F

Note 1 Carbon Dioxide Maximum is 0.35 L.V.% (8038 ppm_w) of the Ethane.

Note 2 Methane Maximum is 0.5 L.V.% of the total components excluding N₂ and CO₂ and 1.5 L.V.% of the Ethane.

Note 3 Olefin Maximum is 1.0 L.V.% (10,000 ppm_w) of the total stream, C₄ Olefin Maximum is .1 L.V.% (1,000 ppm_w) of the Normal Butane.

Note 4 Distillation and Color to be run on that portion of the mixture having a boiling point of 70°F and above at atmospheric pressure.

Attachments

Gas Sample Analysis

Company: Oasis Petroleum ND
Meter Number: WBINLT
Meter Label: WB INLET GAS
Field Name: WILD BASIN GAS PLANT

Analyst: HAUT
Sample Date: 02/22/2017 at 10:02:47
Cylinder Pressure: 0
Test Dates: 02/22/2017 - 02/22/2017
Line Pressure: 107
Flowing Temp: 36°F
State Meter ID:

Gas Analysis by Chromatograph

NAME	MOLE%	BTU	SG	GPM
nitrogen	1.8025	0	0.0174	0
methane	65.8228	666.3484	0.3646	0
co2	.8306	0	0.0126	0
ethane	19.0003	337.0262	0.1973	5.0801
h2s	.0000	0	0	0
propane	7.7721	196.0062	0.1183	2.1407
ibutane	.9229	30.0812	0.0185	0.3019
nbutane	2.5001	81.7495	0.0502	0.788
ipentane	.4231	16.967	0.0105	0.1547
npentane	.5624	22.5971	0.014	0.2038
hexanes	.2562	12.2128	0.0076	0.1053
heptanes	.0960	5.2947	0.0033	0.0443
octanes	.0110	0.689	0.0004	0.0056
nonanes	.0000	0	0	0
IDEAL TOTAL:	100	1368.9721	0.8149	8.8244

Gross BTU / Real Cu Ft @ 60°F				Gasoline Content	
Pressure:	14.73	14.65	15.025	Pressure:	14.73
Dry:	1375.2221	1367.7192	1402.8921	Propane GPM:	2.1407
Sat:	1352.7649	1345.2594	1380.4448	Butane GPM:	1.0899
Act. BTU:	1375.2221	1367.7192	1402.8921	Gasoline GPM:	0.5286
SpecGrav:	0.8183	0.8182	0.8183	26# Gasoline GPM:	0.751
Z:	0.9955	0.9955	0.9954	Total GPM:	8.8244

Sulfur Content		Dewpoints	
Mercaptans ppm:	N/A	H2O #/mmcf:	N/A
H2S ppm:	1.5	Hydrocarbon F:	N/A
		@ psig:	N/A

Comments:

GASTEC 4LB FULL PULL. H2S 1.5 PPM.

GENERAL TERMS AND CONDITIONS (Continued)

4. QUALITY

Except as otherwise provided below, all natural gas delivered to Transporter at receipt point(s) shall conform to the following specifications:

4.1 Non-gaseous constituents: The gas shall be commercially free from solid or liquid matter, dust, gums, and gum-forming constituents which might interfere with its merchantability or cause injury to or interference with the proper operation of Transporter's pipelines, meters, regulators and other appurtenances through which it flows.

4.2 Oxygen: The gas shall not at any time have an oxygen content in excess of .001 percent by volume, and the parties shall make every reasonable effort to keep the gas free from oxygen.

4.3 Carbon dioxide: The gas shall not at any time have a carbon dioxide content in excess of two percent (2%) by volume.

4.4 Liquids hydrocarbon content: The gas shall have a hydrocarbon dew-point less than -5° Fahrenheit at 800 psia, -10° Fahrenheit at 1,000 psia, or -18° Fahrenheit at 1,100 psia, or such higher dew-point approved by Transporter as, without treatment by Transporter, may be compatible with the operating conditions of Transporter's pipeline.

4.5 Hydrogen sulfide: The gas shall not contain more than one-quarter (1/4) grain of hydrogen sulfide per one hundred (100) cubic feet.

4.6 Total sulfur: The gas shall not contain more than two (2) grains of total sulfur per one hundred (100) cubic feet.

4.7 Gross heating value: The gas shall have a total or gross heating value of not less than nine hundred fifty (950) nor more than one thousand two hundred and ten (1,210) Btu's per cubic foot at a pressure of 14.73 psia.

4.8 Temperature: The gas shall not be received at a temperature of more than one hundred twenty degrees (120°) Fahrenheit.

4.9 Water vapor content: The gas shall not contain in excess of four (4) pounds of water vapor per million cubic feet.

GENERAL TERMS AND CONDITIONS (Continued)

4. QUALITY (Continued)

4.10 Mercaptan sulfur: The gas shall not contain more than one quarter (1/4) grain of mercaptan sulfur per one hundred (100) cubic feet of gas, or such higher content as, in Transporter's judgment, will not result in deliveries of gas by Transporter to Shipper(s) containing more than one quarter (1/4) grain of mercaptan sulfur per one hundred (100) cubic feet of gas.

4.11 Deleterious substances: The gas shall not contain deleterious substances or toxic or hazardous substances in concentrations that are hazardous to health, injurious to pipeline facilities or adversely affect merchantability.

4.12 Microbiological agents: The gas shall not contain, either in the gas or any liquids with the gas, any microbiological organisms, active bacteria or bacterial agent(s) capable of contributing to or causing corrosion and/or operational and/or other concerns. Microbiological organisms, bacteria or bacterial agent(s) include, but are not limited to, sulphate reducing bacteria (SRB) and acid producing bacteria (APB). Tests for bacteria or bacterial agent(s) shall be conducted on samples taken from the meter run or the appurtenant piping using American Petroleum Institute (API) test method API-RP38 or any other test method acceptable to Transporter and Point Operator which is currently available or may become available at any time.

4.13 Gas received by Transporter at receipt point(s) for gathering and/or processing purposes shall conform to the specifications established in the Service Agreement between Shipper and Transporter or if none are specified, to the specifications contained in these General Terms and Conditions.

4.14 If, at any time, gas tendered by Shipper for gathering and/or transportation shall fail to conform to any of the applicable quality specifications, Transporter shall have the right, at its option, to immediately refuse to accept delivery pending correction of the deficiency by the Point Operator, continue to accept delivery and make such changes necessary to cause the gas to conform to such specifications and to charge Point Operator for costs incurred in making such conforming changes, or continue to accept delivery of said gas so long as, in Transporter's sole judgment, it can be utilized without detrimentally affecting Transporter's facilities or operations and such nonconformance does not cause Transporter to incur additional

GENERAL TERMS AND CONDITIONS (Continued)

4. QUALITY (Continued)

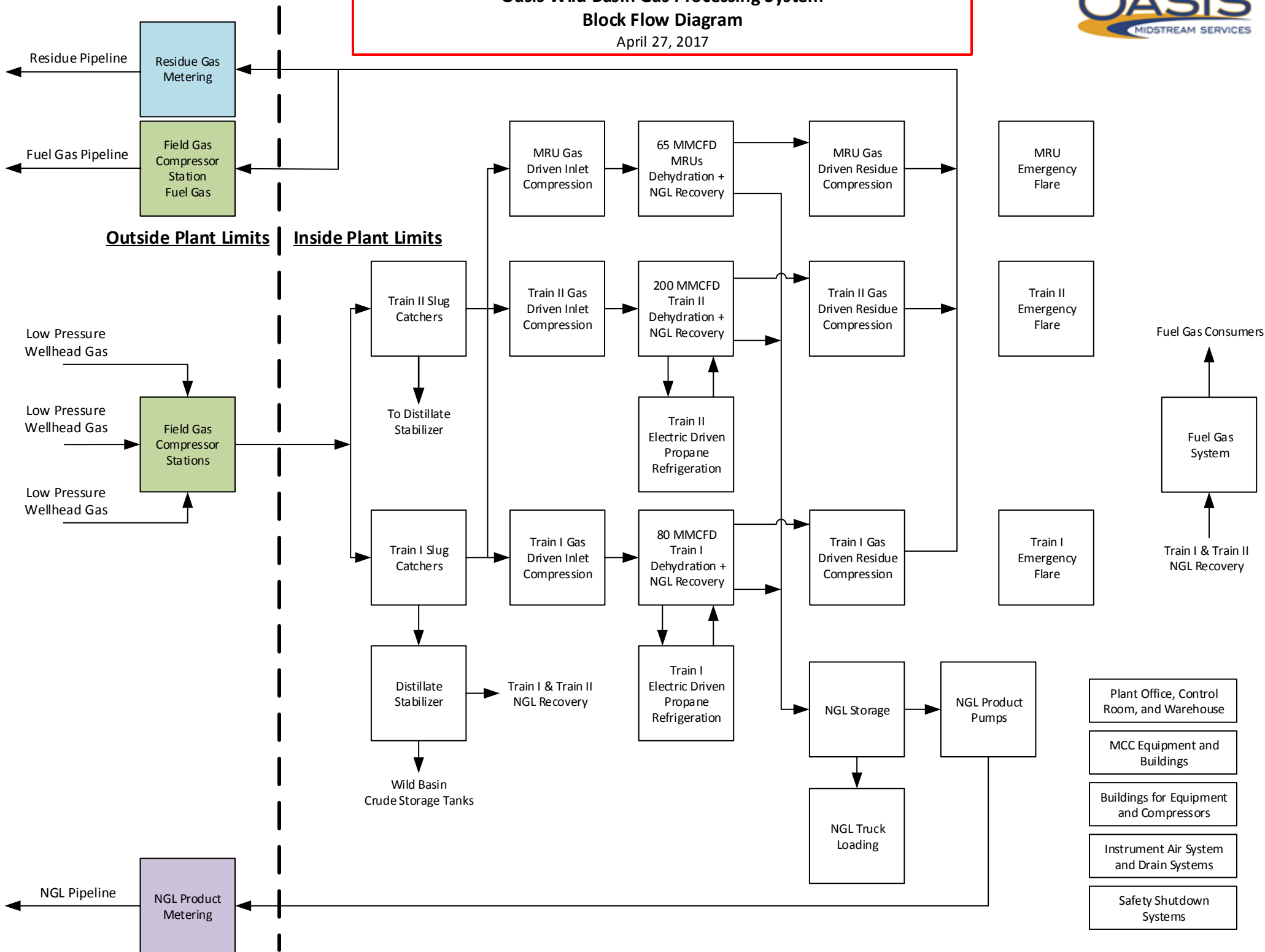
operation and maintenance expenses. Acceptance of gas that does not conform to applicable quality specifications will not prevent Transporter from refusing future receipts of non-conforming gas. Failure by Shipper to tender gas that conforms to the applicable quality specifications shall not be construed to eliminate, or limit in any manner, the rights and obligations existing under any other provisions of the Service Agreement.

4.15 Unless otherwise mutually agreed upon, the cost of any additional gas analysis and quality control equipment, including installation costs and any associated tax effects, which Transporter, in its reasonable discretion, determines is required to be installed to monitor the quality of gas received at a point(s) of receipt, shall be borne by Point Operator. Such equipment shall be owned and maintained by Transporter. Transporter's decision to require the installation of the necessary equipment to protect its system integrity at a receipt point will be exercised in a non-discriminatory manner.

Oasis Wild Basin Gas Processing System

Block Flow Diagram

April 27, 2017



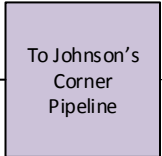
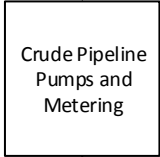
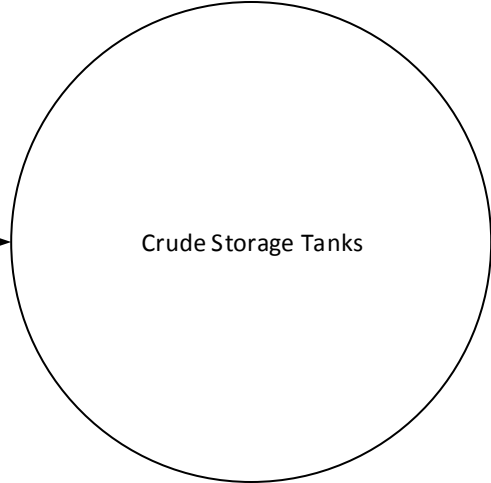
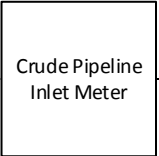
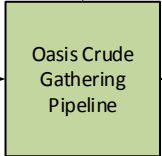
Oasis Wild Basin Crude Stabilization and Storage System
Block Flow Diagram
April 27, 2017



Outside Plant Limits

Inside Plant Limits

Oasis Wild Basin CTBs
Oasis Wild Basin CTBs
Oasis Wild Basin CTBs



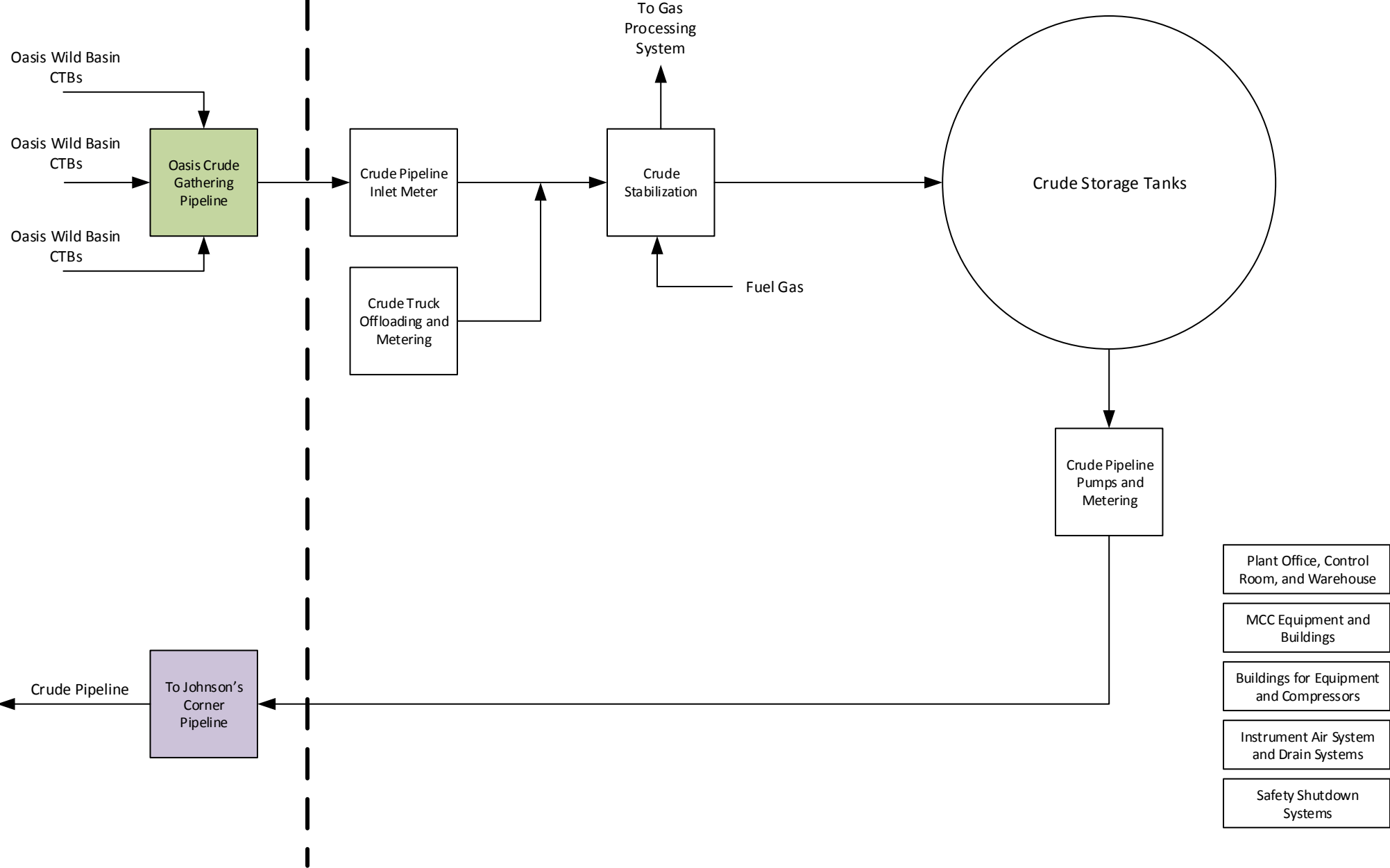
Plant Office, Control Room, and Warehouse

MCC Equipment and Buildings

Buildings for Equipment and Compressors

Instrument Air System and Drain Systems

Safety Shutdown Systems

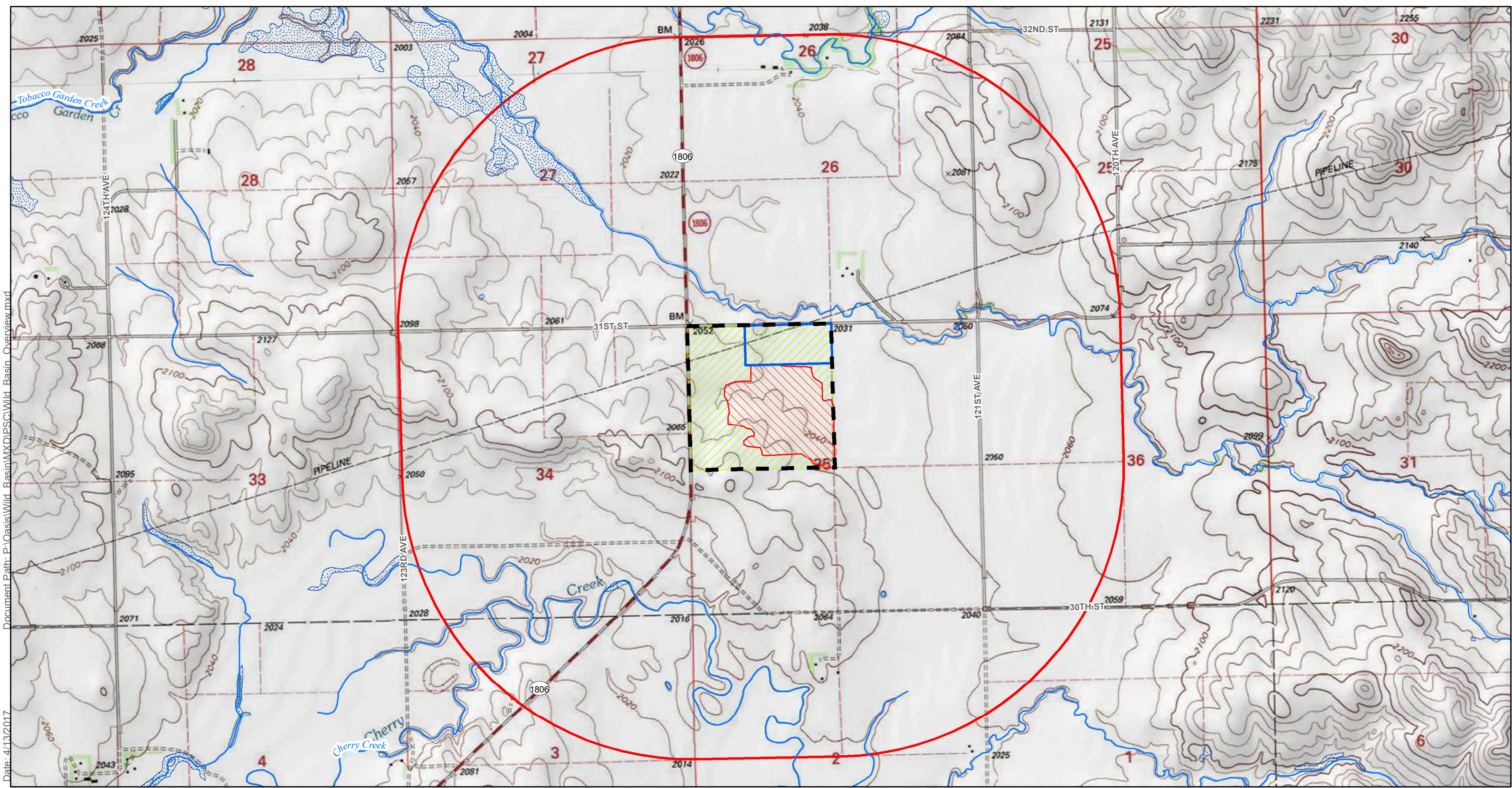


Appendix B

Project Maps

Document Path: P:\Oasis\Wild_Basin\MXD\PSC\Wild_Basin_Overview.mxd
Date: 4/13/2017

Author: C.Ross



Wild Basin Expansion Area	NHD Flowline	Land Ownership
Wild Basin Gas Plant Footprint	NWI Wetland	Federal Land
Survey Area	NHD Waterbody	State Land
Project Parcel		Native American Land
1-mile Buffer		

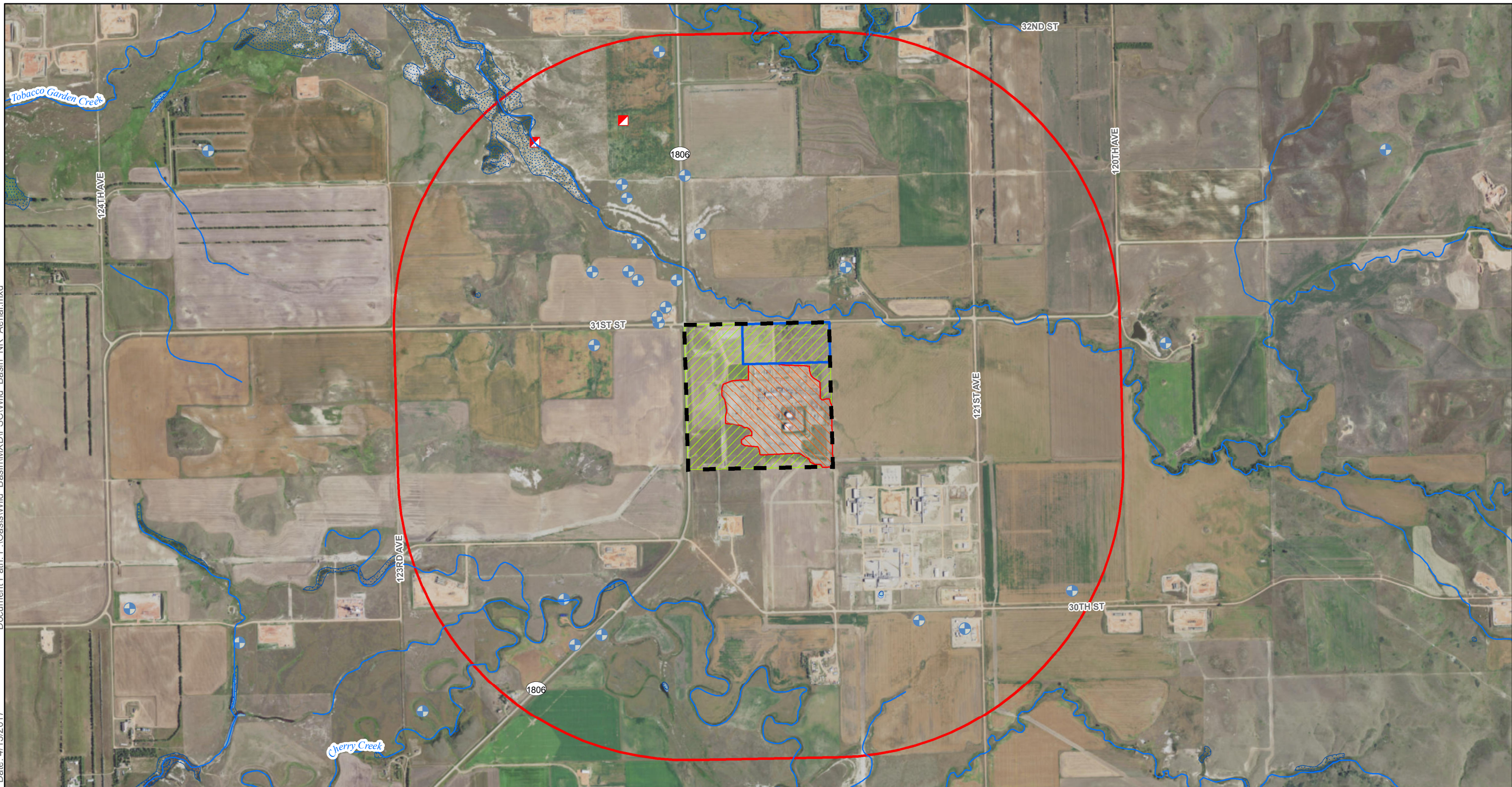
*Refer to Natural Resource Report for detailed maps and tables.

E3 ENVIRONMENTAL
Enhancing Execution with Experience

0 800 1,600 3,200 Feet
1:20,000


Map not to scale, for environmental review purposes only.

Oasis Midstream Services, LLC
Wild Basin Gas Plant Expansion Project
Overview Map
McKenzie County, North Dakota


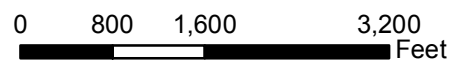


- Wild Basin Expansion Area
- 1-mile Buffer
- Water Well
- NHD Flowline
- Abandoned Mine
- Survey Area
- NWI Wetland
- Project Parcel
- NHD Waterbody

*Refer to Natural Resource Report for detailed maps and tables.



E3 ENVIRONMENTAL
Enhancing Execution with Experience

1:20,000

Map not to scale, for environmental review purposes only.

Oasis Midstream Services, LLC
 Wild Basin Gas Plant Expansion Project

Siting Criteria
 Natural Resources - Aerial Map
 McKenzie County, North Dakota

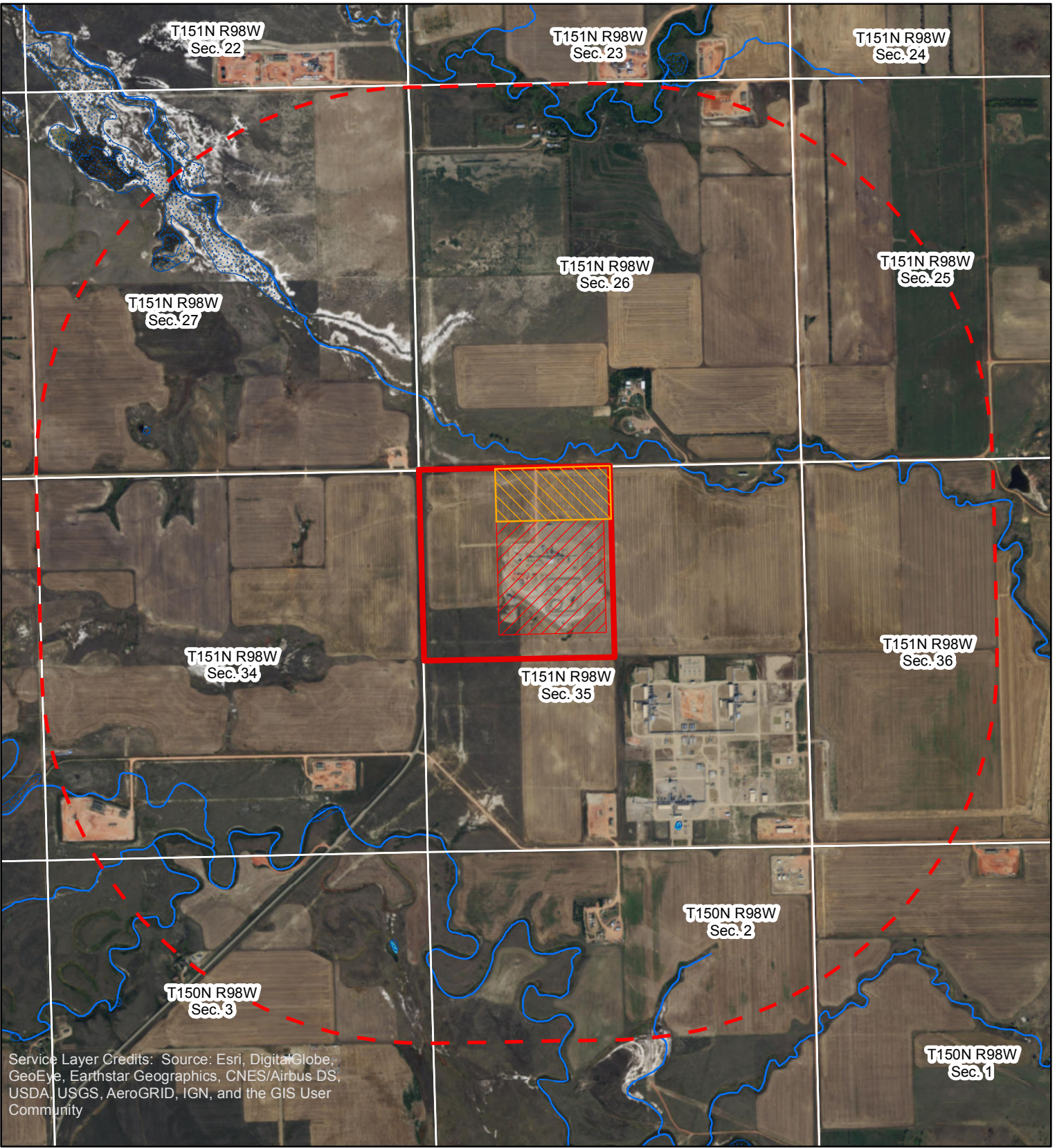
Appendix C

Agency Consultations

Consultation Maps

Maps utilized for all Agency consultations.

Document Path: P:\Oasis\Wild_Basin\MXD\Letter_WildBasin_FW_Aerial.mxd
 Date: 2/15/2017



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



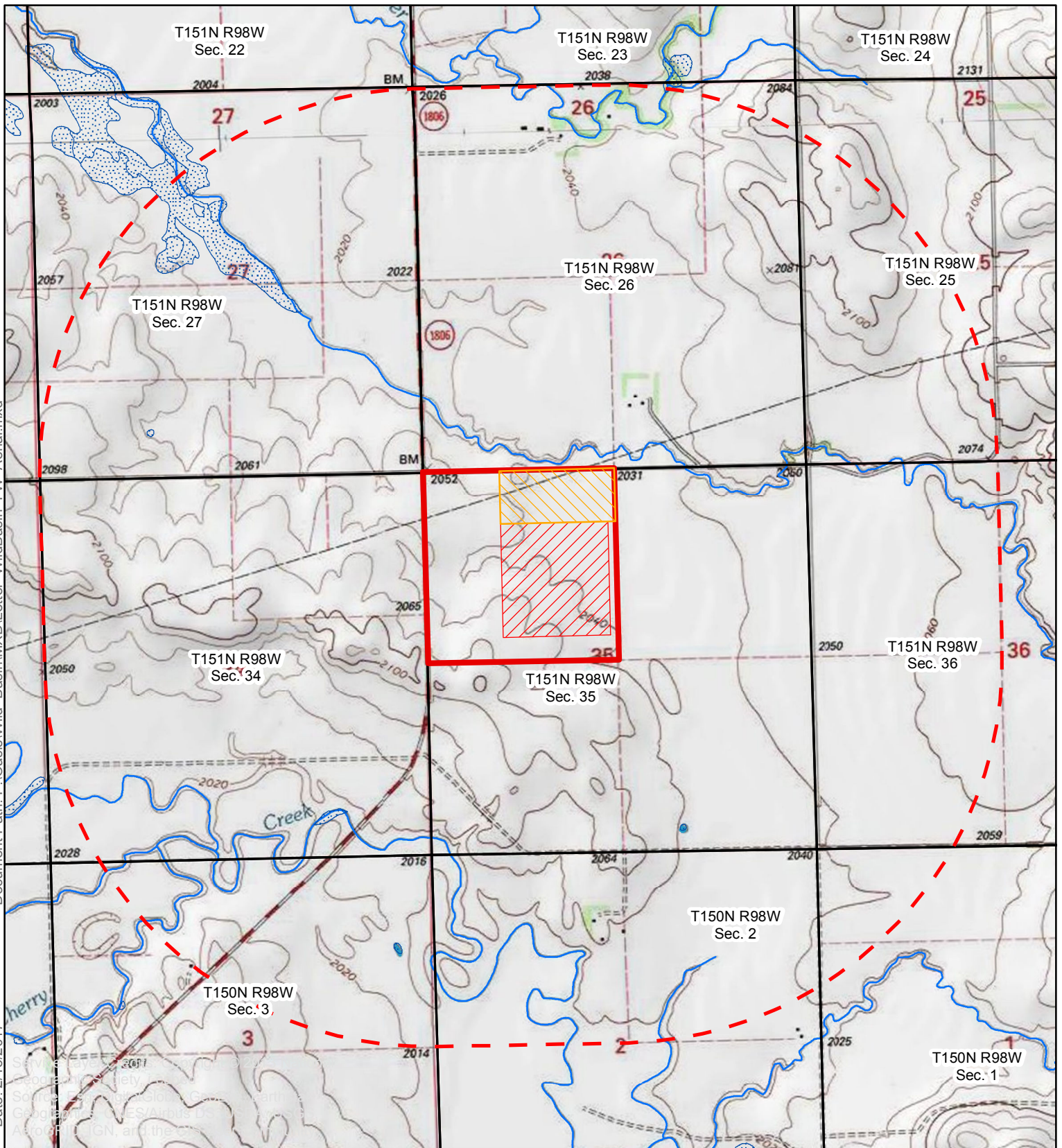
Project Area	NWI Wetland
Wild Basin Gas Plant Location	NHD Waterbody
Laydown Area	NHD Flowline
1 Mile Study Area	

0 500 1,000 2,000 Feet
1:22,000

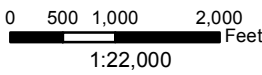
Oasis Midstream Services, LLC
 Wild Basin Gas Plant
 Aerial Map
 McKenzie County, ND

Author: JKnudsen

Document Path: P:\Oasis\Wild Basin\MXD\Letter WildBasin_FW_Aerial.mxd
Date: 2/15/2017



- Project Area
- Wild Basin Gas Plant Location
- Laydown Area
- 1 Mile Study Area
- NWI Wetland
- NHD Waterbody
- NHD Flowline



Oasis Midstream Services, LLC
Wild Basin Gas Plant
Topo Map
McKenzie County, ND

Author: JKnudsen

U.S. Fish and Wildlife Service
Consultation

From: Hendrix, Amanda
To: [Katie Schmidt](#)
Subject: Environmental Review
Date: Tuesday, April 25, 2017 2:08:01 PM
Attachments: [20170425130101.pdf](#)

Good afternoon Katie,

Attached is our stamped document indicating the completion of the environmental review. A hard copy will not be provided unless requested. Please don't hesitate to contact our office if you or your staff have any questions.

Regards,
Amanda

--

Amanda Hendrix
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
North Dakota Ecological Services
3425 Miriam Ave
Bismarck, ND 58501
701.355.8545



March 6, 2017

Mr. Scott Larson, Field Supervisor
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926



**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
Federally Listed Species, USFWS Managed Lands, and Migratory Bird
Consultation**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps.

The purpose of this request is to provide the U.S. Fish and Wildlife Service (USFWS) with notification of the proposed Project and to share Oasis' analysis of the environmental topics relevant to the North Dakota Public Service Commission's siting requirements. On February 7, 2017, E3 Environmental, LLC (E3) conducted a web-based consultation using USFWS's IPaC system. This analysis is based upon results of the project specific query of the IPaC system.

Federally Listed Species Analysis:

The results of the search of the USFWS's IPaC system on February 7, 2017 found the following:

- Least tern (*Sternula antillarum*) – endangered
- Piping plover (*Charadrius melodus*) – threatened, and designated critical habitat
- Rufa red knot (*Calidris canu*)
- Northern long-eared bat (*My*)
- Whooping crane (*Grus amer*)
- Pallid sturgeon (*Scaphirhynu*)
- Dakota skipper (*Hesperia da*) habitat
- Black-footed ferret (*Mustela*)
- Gray wolf (*Canis lupus*) – en

U.S. FISH AND WILDLIFE SERVICE
ND Ecological Services Field Office

This constitutes a report of the Department of the Interior prepared in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq). We have reviewed and have NO OBJECTION to this project.

4/18/2017
Date

North Dakota State Supervisor



March 6, 2017

Mr. Scott Larson, Field Supervisor
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
Federally Listed Species, USFWS Managed Lands, and Migratory Bird
Consultation**

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- Piping plover (*Charadrius melodus*) – threatened, and designated critical habitat
- Rufa red knot (*Calidris canutus rufa*) –threatened
- Northern long-eared bat (*Myotis septentrionalis*) – threatened
- Whooping crane (*Grus americana*) – endangered
- Pallid sturgeon (*Scaphirhynchus albus*) – endangered
- Dakota skipper (*Hesperia dacotae*) –threatened, and designated critical habitat
- Black-footed ferret (*Mustela nigripes*) – experimental population
- Gray wolf (*Canis lupus*) – endangered

Least Tern

The interior populations of the Least Tern have historically been associated with large river systems for breeding and migratory habitats. Breeding birds are known to congregate in colonies, utilizing sandbar habitat common to larger rivers. The Least Tern is found in North Dakota during the late spring and summer breeding season (mid-May through late August, with the peak of the nesting season occurring from mid-June to mid-July). Desktop analysis supported with field studies have concluded that no suitable habitat is present within the Project area; therefore, impacts to the Least Tern are not anticipated.

Piping plover

The Piping plover is associated with shorelines along small alkaline lakes, large reservoir beaches, and river islands and adjacent sand pits. Breeding birds select wide beaches with highly clumped vegetation covering less than 25 percent of the area. Breeding season in North Dakota occurs mid-April through August. The Missouri River and Lake Sakakawea, approximately 13 miles north of the site at its nearest point, are the closest designated critical habitats for the Piping plover. Desktop analysis supported with field studies have concluded that no suitable habitat is present within the Project area; therefore, impacts to the Piping plover or its designated critical habitat are not anticipated.

Rufa red knot

The Rufa red knot migrates between breeding grounds in Canada and wintering grounds in South America. A significant factor threatening the Rufa red knot is destruction and modification of its habitat due to beach erosion and shoreline protection and stabilization projects. Migratory behavior and habitat requirements of this species are poorly understood particularly for those populations occupying the midcontinent flyways. Inland stopovers include the Mississippi Valley, Great Lakes, and Great Plains. Desktop analysis supported with field studies have concluded that no suitable habitat is present within the Project area; therefore impacts to the Rufa red knot are not anticipated.

Northern long-eared bat: The northern long-eared bat (NLEB) roosts underneath bark, in cavities, or in crevices of both live and dead trees. Populations have also been found in cool environments such as caves and mines, and prefer to spend winter hibernating in locations with high humidity and no air currents. Breeding occurs in late summer or early fall in maternity colonies where females give birth around the same time, which may occur anywhere from late May to late July. The Final 4(d) rule exempts incidental take of the NLEB from all activities occurring in areas that have not been affected by white-nose syndrome. The Study Area occurs outside of the USFWS white-nose syndrome buffer zone; as such, there are no restrictions for Project activities.

Whooping crane

The whooping crane is a large bodied marsh species that breeds primarily in Canada and winters in the Gulf of Mexico. This species has been closely studied and monitored in recent years due to its small population. North Dakota provides migratory habitat for the species, providing roosting and feeding opportunities during migration. This species prefers larger wetland complexes for roosting habitat, typically using adjacent uplands for foraging opportunities.

Precautionary measures will be implemented if whooping cranes are sighted in or near the Project area. Oasis will voluntarily suspend all heavy equipment operation activities and notify the USFWS should a whooping crane be spotted within 0.5 mile of the Project area. Heavy equipment activities will resume upon the departure of the individual(s). The Project under consideration will not result in a loss of crane habitat. Construction activities would likely serve as a deterrent and once constructed the proposed facility would present a fairly prominent feature to be avoided relative to its surrounding landscape.

Least Pallid Sturgeon

The pallid sturgeon's preferred habitat includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats, and requiring extensive micro habitat diversity. The species inhabits the Missouri and Mississippi Rivers from Montana to Louisiana. In North Dakota, reaches of the Missouri River have been cited as providing suitable habitat for the pallid sturgeon. However, there is no suitable sturgeon habitat in the Project area as the Missouri River does not intersect the project corridor; as such, impacts to the pallid sturgeon are not anticipated.

Dakota skipper

Dakota skippers require untilled, high-quality prairie. Habitat preferred by the skipper is wet-mesic prairie with little topographic relief on near-shore glacial lake deposits and in rolling native-prairie terrain over gravelly glacial moraine deposits. Larvae feed on grasses, favoring little bluestem (*Schizachyrium scoparium*). Adults commonly feed on nectar of flowering native forbs such as harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower (*Echinacea angustifolia*). This species is not known to disperse widely and has low mobility, dispersing a maximum of 0.6-mile. The species is threatened by conversion of native prairie to cultivated agriculture or shrublands, over-grazing, invasive species, gravel mining, and inbreeding. The proposed Project site is primarily cultivated cropland and has been managed as such for more than 20 years. Review of aerial photos and soil survey data indicate that untilled, high-quality prairie dominated by native grasses that contain a high diversity of native forbs are not present within the Project site or within one-half mile of the site. Desktop

analysis supported that no suitable habitat is present within the Project area; therefore, impacts to the Dakota skipper are not anticipated.

Black-footed ferret

Black-footed ferrets inhabit the extensive prairie dog complexes of the Great Plains, typically composed of several smaller colonies close to one another that provide a sustainable prey base. The *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act* published by the USFWS (1989), states ferrets require black-tailed prairie dog (*Cynomys ludovicianus*) towns or complexes greater than 80 acres in size, and towns of this dimension may be important for ferret recovery efforts. This species has not been observed in the wild for more than 20 years and is not anticipated to be impacted by the proposed Project.

Gray wolf

The gray wolf is a large carnivore that through conservation measures has experienced strong population recovery, particularly in the Great Lakes states of the upper Midwest. As populations rebound, individuals may break from packs to explore opportunities to establish packs in unoccupied territory. Roaming individuals can cover great distances without establishing viable breeding populations in previously unoccupied habitat(s). This species is not tolerant of human disturbance and will tend to avoid interaction with humans. The activities associated with construction and later plant operations would likely serve as a deterrent to this species. Therefore, this Project will have no effect on the gray wolf.

USFWS Managed Lands:

Conservation programs such as Waterfowl Production Areas and wetland and grassland easements represent an important tool used by USFWS to identify and manage high quality wildlife habitat. A review of public records failed to identify any of these USFWS managed lands in the Project study area. Oasis requests that USFWS notify Oasis of any USFWS managed lands located within the proposed study area.

Migratory Bird Consultation:

USFWS administers various wildlife related mandates of national concern including the Migratory Bird Treaty Act (MBTA). Oasis understands that unlike the Endangered Species Act, the MBTA has no provisions for the allowance of a take and therefore compliance may best be achieved by avoiding or minimizing the potential to interact with migratory species during the active breeding season. Oasis also understands that in North Dakota, the breeding season is typically defined as occurring annually from February 1 through July 15.

In recognition of these facts, Oasis has proposed to initiate construction during the second quarter of 2017 and continuing these activities through fourth quarter of 2018, maintaining an active construction site for the approximately 20 month duration. The proposed project schedule would overlap with the 2017 and 2018 breeding season,

however the proposed schedule would mitigate impacts by initiating ground disturbing activities in advance of the breeding season. Furthermore, construction activities would serve as an effective deterrent for breeding birds.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

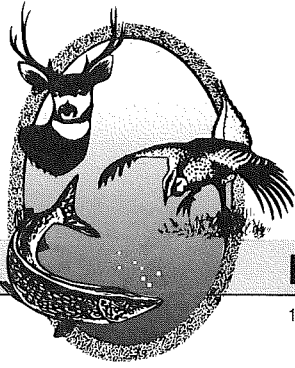
Sincerely,



Katie Schmidt, Senior Consultant

North Dakota Game and Fish Department

Consultation



"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

April 3, 2017

Katie Schmidt
Senior Consultant
E3 Environmental, LLC
871 Jefferson Avenue
St. Paul, MN 55102

Dear Ms. Schmidt:

RE: Wild Basin Gas Plant Expansion Project

Oasis Midstream Services, LLC is planning the expansion of the existing Wild Basin gas processing plant in McKenzie County, North Dakota. The North Dakota Game and Fish Department has reviewed this project for wildlife concerns.

The National Wetland Inventory indicates various wetlands, primarily associated with drainageways, within the proposed project corridor. Steps should be taken to protect any wetlands that cannot be avoided, no alterations should be made to existing drainage patterns, and above-ground appurtenances should not be placed in wetland areas.

We do not believe this project will have significant adverse effects on wildlife or wildlife habitat, including species of conservation priority, provided any unavoidable destruction or degradation of wetland acres is mitigated in kind and disturbed areas are reclaimed to pre-project conditions.

Sincerely,

A handwritten signature in black ink, appearing to read "Greg Link". The signature is written in a cursive style with a large initial "G".

Greg Link
Chief
Conservation & Communication Division

js



March 6, 2017

Mr. Greg Link, Chief
Conservation and Communication Division
North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
State Conservation Priority Species Consultation**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact, the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps.

The purpose of this correspondence is to afford the North Dakota Game and Fish Department the opportunity to assess the Project site and associated Study Area for the presence or absence of State Conservation Priority Species.

We appreciate your assistance with this request and look forward to your timely review and comments regarding this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, Senior Consultant

North Dakota Parks and Recreation Department

Consultation



Doug Burgum, Governor
Jesse Hanson, Interim, Director
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

March 22, 2017

Katie Schmitt
E3 Environmental, LLC
871 Jefferson Ave.
St. Paul, MN 55102

Re: Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project

Dear Mr. Schmitt:

The North Dakota Parks and Recreation Department has reviewed the above referenced project for the Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project in McKenzie County.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no documented significant ecological community occurrences or plant and animal species of concern in our database within project area. Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

The Department recommends that the project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats not be disturbed in the project area to help secure rare species conservation in North Dakota. Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

We appreciate your commitment to rare plant, animal and ecological community conservation, management and inter-agency cooperation to date. For additional information please contact me at (701-328-5370 or kgduttonhefner@nd.gov). Thank you for the opportunity to comment on this proposed project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kathy Duttonhefner", with a horizontal line extending to the right.

Kathy Duttonhefner, Coordinator
Natural Resources Division

R.USNDNHI*2017-020KD3.22.2017KD3.22.2017

• • • • •
Play in our backyard!



March 6, 2017

Kathy Duttenhefner
North Dakota Parks and Recreation
1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
Natural Heritage Inventory Review Request**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact, the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps.

The purpose of this request is to provide the North Dakota Parks and Recreation Department's (Department) notice of the Project such that the environmental topics that fall under the purview of the Department that are also relevant to the North Dakota Public Service Commission's siting requirements. It is our understanding that the Department administers the following state programs:

- State Park Lands
- Land and Water Conservation Fund
- Natural Heritage Inventory

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, Senior Consultant

North Dakota State Historic Preservation Office

Consultation



**STATE
HISTORICAL
SOCIETY
OF NORTH DAKOTA**

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*Acting Director
Parks and Recreation
Department*

Grant Levi
*Director
Department of Transportation*

Claudia J. Berg
Director

*Accredited by the
American Alliance
of Museums since 1986*

April 28, 2017

Mr. Abraham Ledezma, Principal Investigator
In Situ
2225 Manuela Drive
Chaska, MN 55318

ND SHPO Ref: 17-0605A PSC Oasis Petroleum's "An Addendum to Wild Basin Gas Plant Expansion: A Class I and Class III Cultural Resource Investigation in McKenzie County, North Dakota," in portions of [T151N R98W Section 35]

Dear Mr. Ledezma,

We reviewed ND SHPO Ref: 17-0605A PSC Oasis Petroleum's "An Addendum to Wild Basin Gas Plant Expansion: A Class I and Class III Cultural Resource Investigation in McKenzie County, North Dakota," and find the report acceptable. There has been a good faith effort to identify and avoid impacts to "Significant Sites," provided this project remains as described and mapped in this report.

Thank you for the opportunity to review this project. If you have questions please contact either Paul Picha at ppicha@nd.gov or (701) 328-3574 or Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

Claudia J. Berg
Director, State Historical Society of North Dakota



**STATE
HISTORICAL
SOCIETY
OF NORTH DAKOTA**

Doug Burgum
Governor of North Dakota

April 11, 2017

North Dakota
State Historical Board

Margaret Puetz
Bismarck - President

Gereld Gerntholz
Valley City - Vice President

Albert I. Berger
Grand Forks - Secretary

Calvin Grinnell
New Town

Diane K. Larson
Bismarck

Terrance Rockstad
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Parks and Recreation
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Grant Levi
*Director
Department of Transportation*

Claudia J. Berg
Director

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of Museums since 1986*

Mr. Abraham Ledezma, Principal Investigator
In Situ
2225 Manuela Drive
Chaska, MN 55318

ND SHPO Ref: 17-0605 PSC Oasis Petroleum's "Wild Basin Gas Plant Expansion: A Class I and Class III Cultural Resource Investigation in McKenzie County, North Dakota," in portions of [T151N R98W Section 35]

Dear Mr. Ledezma,

We reviewed ND SHPO Ref: 17-0605 PSC Oasis Petroleum's "Wild Basin Gas Plant Expansion: A Class I and Class III Cultural Resource Investigation in McKenzie County, North Dakota," and find the report acceptable. There has been a good faith effort to identify and avoid impacts to "Significant Sites," provided this project remains as described and mapped in this report.

Thank you for the opportunity to review this project. If you have questions please contact either Paul Picha at ppicha@nd.gov or (701) 328-3574 or Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

Claudia J. Berg
Director, State Historical Society of North Dakota

North Dakota Department of Trust Lands – Surface Management

Consultation

From: Bement, Allisen C.
To: [Katie Schmidt](#)
Subject: RE: Consultation Request-Oasis Wild Basin Gas Plant Expansion
Date: Tuesday, April 11, 2017 8:00:04 AM
Attachments: [image001.png](#)

Katie,

We agree that the data provided represents the approximate location of the Wild Basin to Johnson's Corner Pipeline Project and the proximity of mineral interests managed by this office, for use in a filing with the PSC in the state of North Dakota.

Allisen Bement

Land Professional
ND Department of Trust Lands
701.328.1952
abement@nd.gov

From: Katie Schmidt [mailto:KSchmidt@go2e3.com]
Sent: Monday, April 10, 2017 10:03 AM
To: Bement, Allisen C. <abement@nd.gov>
Subject: Consultation Request-Oasis Wild Basin Gas Plant Expansion

An attachment has been removed from this message in accordance with North Dakota Enterprise Architecture Standard CT001-13.1 (www.nd.gov/itd/standards/email). The attachment is NOT recoverable.

Please contact your IT support staff or the ITD Service Desk with any concerns. You can submit an incident ticket to ITD via the web at www.nd.gov/itd/support or by phone at 701-328-4470.

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Allisen,

Good morning! On behalf of Oasis Midstream Services E3 is requesting review and comment from your Agency regarding the proposed plant expansion activities as Oasis' existing Wild Basin Gas Plant. The proposed expansion activities will increase the processing capacity of the Plant over the ND PSC siting threshold, as such E3 is assisting Oasis in the development of a ND PSC Siting application.

Should you have any questions please contact me directly.

Thanks-Katie

Katie Schmidt, EIT

Senior Consultant/Operations Manager

E3 Environmental, LLC

kschmidt@go2e3.com

O: 651.282.0652

M: 651.216.6881

871 Jefferson Avenue

St. Paul, MN 55102

www.go2e3.com



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March 6, 2017

Mr. Michael Haupt, Land Management Professional
North Dakota Department of Trust Lands
Surface Management Division
1707 North 9th Street, P.O. Box 5523
Bismarck, ND 58506-5523

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
School Trust Lands Consultation**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact, the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps.

The purpose of this correspondence is to request a review of the Project and associated Study Area (see attached) for the presence or absence of State School Trust Lands. This information will be included in a North Dakota Public Service Commission application for the Project.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, Senior Consultant

North Dakota Department of Trust Lands – Minerals Management

Consultation

From: Haupt, Michael L.
To: [Katie Schmidt](mailto:Katie.Schmidt@go2e3.com)
Subject: RE: Consultation Request-Oasis Wild Basin Gas Plant Expansion
Date: Monday, April 10, 2017 10:50:38 AM
Attachments: [image001.png](#)

Katie,

Good morning! In regards to the proposed expansion of the Oasis Midstream Services gas plant there is no ND School Trust land directly involved in the proposed project. Let me know if you have questions. Thanks.

Michael L. Haupt

Land Management Professional, CPRM
North Dakota Department of Trust lands
1707 Nth 9th Street
Bismarck ND 58506-5523
701-328-1916
mhaupt@nd.gov

Note: You can track the real time status of your right-of-way application 24/7 at <http://www.land.nd.gov/surface/right-of-way.aspx> using either the ROW number or by entering at least the first three letters of the company name. By checking this site you can find the name, telephone number and email address of the person working on the application as well as its current status in real time.

From: Katie Schmidt [mailto:KSchmidt@go2e3.com]
Sent: Monday, April 10, 2017 10:07 AM
To: Haupt, Michael L. <mhaupt@nd.gov>
Subject: Consultation Request-Oasis Wild Basin Gas Plant Expansion

CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Michael,

Good morning! On behalf of Oasis Midstream Services E3 is requesting review and comment from your Agency regarding the proposed plant expansion activities as Oasis' existing Wild Basin Gas Plant. The proposed expansion activities will increase the processing capacity of the Plant over the ND PSC siting threshold, as such E3 is assisting Oasis in the development of a ND PSC Siting application.

Should you have any questions please contact me directly.

Thanks-Katie

Katie Schmidt, EIT
Senior Consultant/Operations Manager
E3 Environmental, LLC
kschmidt@go2e3.com

O: 651.282.0652
M: 651.216.6881
871 Jefferson Avenue
St. Paul, MN 55102
www.go2e3.com



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March 6, 2017

Ms. Allisen Bement, Land Professional
North Dakota Department of Trust Lands
Mineral Management Division
1707 North 9th Street, P.O. Box 5523
Bismarck, ND 58506-5523

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
State Mineral Trust Lands Consultation**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact, the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps and shapefiles. To satisfy the Commission's siting requirements, Oasis is providing this project notification for your consideration.

A review of the Project and associated Study Area (as conducted using available information at www.land.nd.gov). The results of this search concluded that there are no State Mineral Trust Lands crossed by the Project and/or located within the Study Area.

We appreciate your assistance with this request and look forward to your timely review and comments regarding this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, Senior Consultant

North Dakota State Water Commission
Consultation

From: David Copeland
To: [Katie Schmidt](mailto:Katie.Schmidt)
Subject: FW: Wild Basin Gas Plant Expansion Project
Date: Tuesday, April 18, 2017 8:20:44 AM

Please see Office of The State Engineer's comments to their concurrence letter.

From: Weier, Jennifer E. [mailto:jweier@nd.gov]
Sent: Thursday, April 06, 2017 9:51 AM
To: David Copeland <dcopeland@oasispetroleum.com>
Cc: Huibregtse, Jared J. <jjhuibregtse@nd.gov>
Subject: Wild Basin Gas Plant Expansion Project

Mr. Copeland,

Jared Huibregtse informed me of your phone call regarding the Office of the State Engineer's comments on Oasis' proposed expansion project for the Wild Basin Gas Plant. I am the groundwater hydrologist in the Water Appropriations Division who made the comment with respect to a groundwater permit, and I can address your concerns about that comment.

After further review, I realize my comment was in error. I was confusing Oasis' Wild Basin Gas Plant in the NW¼ of Section 35, Township 151 N., Range 98 W. with the Grass Lands Gas Plant operated by ONEOK Partners in the SE¼ of the same section. ONEOK has Permit No. 6193 associated with the Grass Lands Gas Plant (note, I also managed to include a typo in the permit number in the comment). I apologize for any confusion my comment caused.

The purpose of my comment, which is to inform Oasis that they will need to apply for a water permit if they plan to divert surface water or groundwater for industrial use (construction of the expansion, industrial use at the facility, etc.), remains unchanged. Little water is used in operation of a natural gas plant, and a water permit is not required if the use is less than 12.5 acre-feet per year and for mostly domestic purposes, such as supplying the plant bathroom facilities. But if water will be diverted for construction of the expansion or other industrial use, a water permit will be required.

Please feel free to contact me directly, or the Water Appropriations Division (701-328-2754), if you have any additional questions or concerns.

Have a good day,
Jennifer Weier

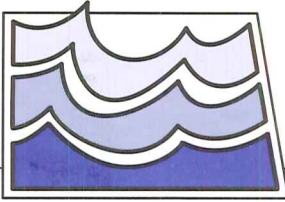
--

Jennifer Weier, P.E.
Hydrologist Manager
North Dakota State Water Commission
900 E. Boulevard Ave
Bismarck, ND 58505

Phone: 701-328-1414

Fax: 701-328-3696

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North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
(701) 328-2750 • TTY 1-800-366-6888 or 711 • FAX (701) 328-3696 • <http://swc.nd.gov>

March 29, 2017

Katie Schmidt
E3 Environmental
871 Jefferson Avenue
St. Paul, MN 55102

Dear Ms. Schmidt:

This is in response to your request for a review of the environmental impacts associated with the Wild Basin Gas Plant Expansion Project located in McKenzie County, ND.

The proposed project has been reviewed by State Water Commission staff, and the following comments are provided:

- No permits relative to the NFIP are required based on the current effective FIRM and State minimum standards.
- If water capacity will be expanded and more water is used per year than permitted, a new water permit will need to be applied for per North Dakota Century Code § 61-04-02. Oasis' Permit No. 6913 is approved for seven acre-feet per year for industrial use, and they have reported using 0.2 to 2.5 acre-feet per year. There are potentially two deferred applications for the Cherry Creek aquifer that would need to be reviewed ahead of a new application. If submitted, please consult with the Water Appropriations Division of the Office of the State Engineer (OSE) at (701) 328-2754 or waterpermits@nd.gov if you have questions.
- The existing plant and proposed modifications impact a 600-acre watershed that originally was conveyed through the middle of the current plant. It is highly likely that a drainage permit was required for the current plant. In order to avoid continued violation of North Dakota Century Code Title 61, the submittal of an application to drain for the surface drain features is required. The application form is available on our website at swc.nd.gov. Please contact Aaron Carranza at (701) 328-4813 or acarranza@nd.gov with questions.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 701-328-4967.

Sincerely,

Jared Huibregtse
Water Resource Planner IV

JH:dm/1570



March 6, 2017

Mr. Todd Sando, State Engineer
North Dakota State Water Commission
900 East Boulevard Avenue, Dept. 770
Bismarck, ND 58505-0850

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
Project Notification and Request for Review**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact, the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps.

The purpose of this correspondence is to provide notification of the Project and to provide the NDSWC the opportunity to comment on the Project. It is our understanding that the NDSWC administers water appropriation and sovereign lands permit programs, and may also have relevant information regarding rural water supply systems and projects. Copies of correspondence received in response to this letter will be included in the application to be filed with the PSC.

We appreciate your assistance with this request and look forward to your timely review and comments regarding this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, Senior Consultant

Western Area Water Supply Authority
Consultation

From: Jacob Monson
To: [Katie Schmidt](#)
Cc: Weston.McGruder@AE2S.com; [Jaret Wirtz](#)
Subject: WAWSP GIS Data - Oasis Basin Gas Plant
Date: Thursday, March 16, 2017 11:39:49 AM
Attachments: [image001.png](#)
[MCWRD_Rural_Distribution.zip](#)

Ms. Schmidt:

Regarding the area specified, WAWSA operates a 12 inch water transmission main; the data for this can be download from our website: <http://wawsp.com/wawsa-data>. Also buried in this area are branches of rural distribution water pipelines operated by McKenzie County Water Resource District (MCWRD). I have attached a shapefile above exhibiting a portion of their network relevant to the area of the Wild Basin Gas Plant; however, I would recommend confirmation with MCWRD in addition to the data I have provided.

The infrastructure for both MCWRD and WAWSA is existing, and there is currently no further construction projected in the area of your project for the Western Area Water Supply Project.

Please let me know if you have any further questions.

Sincerely,
Jacob Monson
Western Area Water Supply
701-774-6605
<http://www.wawsp.com>

WAWSA Logo





March 6, 2017

Mr. Jacob Monson
Western Area Water Supply Authority
820 E Broadway, Suite 101
PO Box 2343
Williston, ND 58802

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
Project Notification and Request for Review**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact, the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps.

The purpose of this correspondence is to afford the Western Area Water Supply Authority (WAWSA) the opportunity to review the Project and provide comment as appropriate.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com. Per previous communication, E3 understands that no response from your agency indicates that the WAWSA has no concerns with the project.

Sincerely,

Katie Schmidt, Senior Consultant

McKenzie County Water Resource Board
Consultation



March 6, 2017

Mr. Gene Veeder, Vice Chairman
McKenzie County Water Resource Board
PO Box 699
Watford City, ND 58854-0699

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
Project Notification and Request for Review**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact, the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps.

The purpose of this correspondence is to provide notification of the Project and to solicit comments that will assist in the regulatory process. To facilitate our review, we are requesting the following information be provided:

- Locations of any county-regulated drains, ditches, and/or other drainage features;
- Any special requirements, restrictions, or specifications regarding conducting expansion activities across or near county regulated drainage features;
- Any local ordinances related to drainage; and
- Any permits issued through your office, which may be applicable to the Project and a summary of the permit process and anticipated timeframes.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,

Katie Schmidt, Senior Consultant

McKenzie County Weed Control Board
Consultation

Sir/Madame,

After review of your noxious weed containment plan, I have found that it meets all North Dakota And McKenzie County Weed Law requirements.

PLEASE PRINT AND ATTACH THIS EMAIL TO YOUR C.U.P. TO SHOW YOU HAVE COMPLIED WITH STATE AND COUNTY WEED LAW FOR ERADICATION AND CONTAINMENT OF McKenzie COUNTY NOXIOUS WEEDS.

Also, remember that your property will be periodically and randomly inspected for compliance with your proposed form of weed control – so please be diligent in your efforts to help us with this problem.

Thank you for helping in our continuing efforts to keep McKenzie County noxious weed free.

Sincerely,

Amber Higgins

McKenzie County Weed Officer

Office 701-842-4131

Fax 701-842-4731

McKenzie County Weed Management Plan

Purpose: This is a simplified weed management template that is specifically designed for small properties/areas. It is designed to assist in controlling noxious weeds by documenting areas at risk whether it be currently infested or could possibly become infected in the future. This weed management template is also to assist in coordinating efforts between McKenzie County Weed Control and landowners/operators/developers to accomplish noxious weed control goals in McKenzie County. A copy of this weed management plan will be kept on file with McKenzie County Weed Control as well as with all parties involved in the ownership and/or management of the property.

Date 04/20/17

Circle One: PRIVATE

COMMERCIAL

Name of Landowner Oasis Petroleum

Name of Party Responsible for Weed Control if Different than Landowner

Address of Responsible Party

1001 Fannin St., Houston, Texas 77002

Phone Number 281-404-9500

E-Mail _____

Approximate Size of Property 160 Acres

Legal Description of Property Township 151N, Range 98W, Section 35

Purpose of Property

Gas processing and crude handling facilities.

Surface Movement for Commercial Construction Purposes: **Circle or highlight one**

Scoria Manure Dirt Sand Gravel **Construction** Other _____

1.0 Management Goals: Management goals describe the purpose/use of the property and what you are trying to achieve. Having clear management goals is key to developing a weed management plan. (The minimum amount required by North Dakota and McKenzie County Weed Law is to mow noxious weeds to prevent them from going to seed. Another management goal may be to restore an area with native vegetation. Management goals might also include preventing contamination and/or spread of noxious weeds due to mining or storage of construction materials by a yearly or bi-yearly application of herbicide.)

Please list your management goals as they apply to this property:

The current gas processing plan occupies approximately 30 acres of the 160-acre parcel.
The proposed gas plant expansion will occupy approximately 25-acres. The goal would be to restore/maintain unused areas with native vegetation free of noxious weeds. These areas would typically be mowed.

2.0 Weed Control Objectives:

Knowing which weed species occur on your property and where they are located is very important in developing control priorities. Weed species vary considerably in the threat that they pose to the resource values of the property. In addition, weed species vary greatly in their susceptibility to control measures. Thus, weed species that pose the greatest threat to achieving the management goals for the property and which can be most easily controlled are the highest priority for management. To create weed control objectives for your weed management plan, first search your property for weeds (if you have not already done so).

3.0 Weed Control Objectives – 3 year plan

1st Year Weed Control Objective:

The first year will involve the construction activities associate with the planned Plant expansion activities. Undisturbed areas will be mowed and maintained in its current state.

2nd Year Weed Control Objective:

Restore areas disturbed by expansion activities and maintain all other areas.

3rd Year Weed Control Objective:

Mow and maintain all areas of the property.

4.0 Evaluating Weed Control: After you have created weed control objectives and have begun to control the priority weed species on your property, you should evaluate the results of your control methods. This requires follow-up visits to the areas where weeds were controlled and a re-assessment of the size and density of an infestation. (For example, compare the size of the infestation after a growing season has elapsed to the size before control actions were initiated.) In most cases, the elimination of an infestation will take several years with multiple treatments per year to kill the plants and eliminate the bank of weed seeds in the soil.

ND Law 4.1-47-02. Control of noxious weeds.

Each Person shall do all things necessary and proper to control the spread of noxious weeds.

In signing this document I understand that I will be responsible for noxious weed control on the property listed above.

Responsible Party Don Gend Date 04/20/17

McKenzie County
Weed Board Chairperson: Amber Hoggins Date 4-24-17

Please allow 48 hours for review of this plan prior to receiving confirmation of approval.

From: Amber Higgins
To: [Katie Schmidt](#)
Subject: RE: Weed Management Plan
Date: Tuesday, April 4, 2017 11:07:57 AM
Attachments: [image001.png](#)
[Weed Management Plan - Copy.doc](#)

Katie-

Thanks for the documents, could you update on a new weed management plan? I've attached a new one for you?

Amber Higgins

McKenzie County Weed Officer
Phone- 701-842-4131
Fax -701-8424731

From: Katie Schmidt [mailto:KSchmidt@go2e3.com]
Sent: Monday, April 03, 2017 4:49 PM
To: Andrea Higgins
Cc: William McCarthy
Subject: RE: Weed Management Plan

Andrea,

Thank you for your prompt response. As we are getting closer to filing our ND PSC application for the planned Plant expansion activities I have engaged the client in your request for a Weed Management Plan. Oasis provided me with the attached Weed Control Plan and subsequent authorization which they obtained for the Plant during the County Conditional Use Permitting Process. Does this Plan satisfy your requirements or do they need to prepare a separate plan. Note all of the proposed activities will occur within the existing Wild Basin Gas Plant property boundaries.

Thank you in advance.

Katie

Katie Schmidt, EIT
Senior Consultant/Operations Manager
E3 Environmental, LLC
kschmidt@go2e3.com
O: 651.282.0652
M: 651.216.6881

E3EmailLogo_2016

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From: Andrea Higgins [<mailto:mcweed@restel.net>]

Sent: Thursday, March 9, 2017 1:30 PM

To: Katie Schmidt <KSchmidt@go2e3.com>

Subject: Weed Management Plan

Katie-

Hello my name is Amber Higgins, I'm the Weed Officer for McKenzie County. I received your letter in the mail today regarding Oasis Midstream Services LLC Wild Bison Gas Plant Expansion Project. The info you sent is very helpful. But here in McKenzie County we need a Weed Management Plan filled out and approved before we can approve the Project on our end. I have attached the Weed Plan in this email if you could fill it out and return it to me I can get it all in order on my end. If you have any questions please feel free to contact me. You can just email the document back to me at your earliest convenience.

Amber Higgins

McKenzie County Weed Officer

Phone- 701-842-4131

Fax -701-8424731



March 6, 2017

Ms. Amber Higgins, Weed Control Officer
McKenzie County Weed Control Board
PO Box 930
Watford City, ND 58854

**Oasis Midstream Services, LLC-Wild Basin Gas Plant Expansion Project
Project Notification and Request for Review**

Oasis Midstream Services, LLC (Oasis) is planning the Wild Basin Gas Plant Expansion Project (Project). The Project will result in the expansion of Oasis's existing gas processing plant. The Project will be entirely located within McKenzie County North Dakota in the Northwest quarter of Section 35, Township 151N and Range 98W. The total operating capacity of the Plant after the planned expansion will exceed the North Dakota Public Service Commission's (Commission's) siting threshold. As a result of this fact, the Project is jurisdictional to the Commission. Expansion activities are scheduled to begin in the second quarter of 2017 with Plant commissioning to be complete before December of 2018. The Project site and a 1-mile wide corridor (Study Area) are depicted on the attached maps.

Based on a review of the North Dakota Century Code 4.1-47-02, ND Administrative Code 7-06-01-02, North Dakota Department of Agriculture (NDDA) guidance documents, and McKenzie County website, the following noxious weeds are currently listed:

- Absinth wormwood (*Artemisia absinthium*)
- Black henbane (*Hyoscyamus niger*)
- Canadian thistle (*Cirsium arvense*)
- Common burdock (*Arctium*)
- Dalmatian toadflax (*Linaria dalmatica*)
- Diffuse knapweed (*Centaurea diffusa*)
- Field bindweed (*Convolvulus arvensis*)
- Houndstongue (*Cynoglossum officinale*)
- Leafy spurge (*Euphorbia esula*)
- Musk thistle (*Carduus nutans*)
- Purple loosestrife (*Lythrum salicaria*)
- Russian knapweed (*Acroptilon repens*)
- Saltcedar (*Tamarix ramosissima*)
- Spotted knapweed (*Centaurea masculosa*)
- Yellow starthistle (*Centaurea solstitialis*)
- Yellow toadflax (*Linaria vulgaris*)

To facilitate our environmental review, we are requesting the following information for areas crossed that are within the 1-mile wide Study Area associated with the Project:

- Confirmation that the list of noxious weeds above is correct and current;
- Known locations of noxious and/or invasive weed species along the proposed route; and
- Guidance and/or recommendations for weed control, pesticide use, and non-chemical treatment options.

We ask that your office provide the location, size, and extent of noxious/invasive weeds as a GIS shapefile (if possible), geographic coordinates (e.g., latitude/longitude), Public Land Survey System Section(s), or marked on a map. The information that your office provides will assist us in project planning and execution. Copies of correspondence received in response to this letter will be included in application to be filed with the PSC.

We appreciate your assistance with this request and look forward to your timely review and comments on this Project. E3 has been retained by Oasis to provide environmental consulting support for this Project. Should you have any questions or require additional information, please contact me at 651-282-0652 or kschmidt@go2e3.com.

Sincerely,



Katie Schmidt, Senior Consultant

Appendix D

Natural Resources Report



Photos courtesy of: Jan Knudsen

Natural Resource Survey Report Wild Basin Gas Plant Expansion Project McKenzie County, North Dakota.

Prepared for:
Oasis Petroleum Inc.

Prepared by:
E3 Environmental, LLC

March 2017



E3 ENVIRONMENTAL
Enhancing Execution with Experience



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SECTION 1: INTRODUCTION

1.1 BACKGROUND

E3 Environmental, LLC (E3), at the request of Oasis Petroleum Inc. (Oasis), performed natural resource surveys for the Wild Basin Gas Plant Expansion (Project). The Project is approximately 160 acres and is an expansion to the existing Wild Basin Gas Plant approximately five miles northeast of Watford City, North Dakota.

E3 biologists conducted surveys to identify, delineate, and inventory natural resources that could potentially be impacted by Project construction. The Project does need to satisfy the North Dakota Public Service Commission's (PSC) siting authority requirements. As such, surveys included:

- Raptor nest documentation and status determination,
- Wetland and waterbody boundary determination and jurisdictional characterization,
- Woody vegetation delineation and inventory,
- Noxious weed inventory and delineation, and
- Federally protected species surveillance and habitat assessment.

This report details the methodologies used by E3 biologists to complete the above surveys and presents the results and E3's recommendations.

1.2 REGULATORY JUSTIFICATION

Several federal and state laws protect native wildlife and natural resources from being destroyed or degraded by anthropogenic disturbance. The following Acts and regulations protect certain species and natural resources within McKenzie County (Project Area), and compliance with these Acts and regulations serves as justification for conducting the completed surveys.

1.2.1 CLEAN WATER ACT

The Clean Water Act of 1972 (CWA) (33 U.S.C. §1251 et seq.) prohibits the discharge of fill materials or pollutants into Waters of the United States or associated wetlands (jurisdictional waterbodies) without a permit from the USACE. Wetland and waterbody boundary determinations and associated jurisdictional characterizations were therefore conducted for the Project. The U.S. Army Corps of Engineers (USACE) administers the Nationwide Permit Program (NWP) which is a series of general permits that regulates ground-disturbing activities within jurisdictional features.



1.2.2 MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act of 1918 (MBTA) (16 U.S.C. §§ 703–712) protects the majority of native birds species from being killed, sold, transported, harassed, or harmed. This also applies to bird parts, nests, feathers, and eggs. Most species found within the Project Area are protected under the MBTA, including raptors, which will frequently reuse nest sites.

1.2.3 BALD AND GOLDEN EAGLE PROTECTION ACT

The Bald and Golden Eagle Protection Act of 1940 (BGEPA) (16 U.S.C. §§ 668-668c) offers comprehensive protection for bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) in the United States. The BGEPA prohibits the take of eagles, including parts, nests, or eggs; and any disturbance of protected species, including any activity that could cause injury to the species, nest abandonment, or a decrease in productivity.

1.2.4 ENDANGERED SPECIES ACT

The Endangered Species Act of 1973 (ESA) (16 U.S.C. § 1531 et seq.) contains a suite of protective measures pertaining to critically imperiled species at risk of extinction. These include species classified as threatened and endangered (T & E), defined as a species which has the potential of becoming endangered and a species which is in danger of extinction, respectively. Species are listed as threatened or endangered due to natural and anthropogenic factors threatening their existence, including disease, predation, habitat degradation, or inadequate regulation. The ESA also identifies habitats critical to listed species and provides mitigation strategies relating to activities within these habitats. Projects that impact listed species may be required to acquire permits to allow for take or to conduct more intensive field studies.

1.2.5 NORTH DAKOTA PUBLIC SERVICE COMMISSION MITIGATION REQUIREMENTS

The PSC's siting criteria requires that a proposed project's impacts to the PSC-specific exclusion and avoidance areas and selection criteria be considered when siting an energy facility. These features include but are not limited to wetlands/waterways, noxious weeds, woody vegetation, and threatened and endangered species.

SECTION 2: SURVEY AREA

The Project, which is approximately 160 acres, is located entirely on private lands within NW Section 35 151N:98W in McKenzie County, North Dakota. E3 conducted natural resource surveys in the areas not yet constructed within the quarter section, including all areas not contained/fenced by existing facilities (Survey Area). Refer to Appendix A for maps depicting the Project location.



2.1 GENERAL LANDSCAPE CHARACTERIZATION

The Survey Area is located entirely within the Northwestern Great Plains (43) Level III ecoregion, encompassing the Missouri Plateau of west-central North Dakota (Omernik, 1987; United States Environmental Protection Agency, 2013). The Northwestern Great Plains is characterized as a semiarid rolling plain of shale, siltstone, and sandstone punctuated by scattered sandstone buttes and badland formations with minimal wetland basins (Omernik & Griffith, 2008). Native shortgrass prairie persists in areas devoid of steep or broken topography, but native prairie has been largely replaced by dryland farming of spring wheat, alfalfa, oats, and sunflowers and by pasture for cattle grazing throughout most of the ecoregion. Habitat zones present in both uplands and wetlands consist of cultivated cropland, introduced perennial grassland and forbland, native grassland, shrubland, forest and woodland, riparian areas, and herbaceous wetlands (Bryce, et al., 1998).

2.2 VEGETATION COMMUNITIES

Vegetation communities are described by their location within United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Major Land Resource Areas (MLRA), which are broad geographic areas characterized by a particular pattern of soil, climate, vegetation, and land use. The Project Area is located in one MLRA: Rolling Soft Shale Plains (MLRA 54) (USDA, NRCS, 2006).

The Rolling Soft Shale Plains are characterized by natural grasslands dominated by western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Nassella viridula*), blue grama (*Bouteloua gracilis*), and little bluestem (*Schizachyrium scoparium*) (USDA, NRCS, 2006). Shrub and forb species including prairie rose (*Rosa arkansana*), western snowberry (*Symphoricarpos occidentalis*), and leadplant (*Amorpha canescens*) are interspersed throughout the uplands and mixed-prairie. Large patches of green ash (*Fraxinus pennsylvanica*), chokecherry (*Prunus virginiana*), and buffaloberry (*Shepherdia argentea*) typically occur in the draws and steep valleys common in this region.

Four ground cover types, modeled by the Gap Analysis Program (GAP), occur within the Survey Area. These include: Northwestern Great Plains Mixedgrass Prairie, Cultivated Cropland, Developed – Open Space, and Developed – Low Intensity (described below). All ground cover types within the Survey Area are included in Table 1 based on United States Geological Survey (USGS) GAP land cover data (US Geological Survey, 2011).

- Cultivated Cropland: This ground cover type dominates the Survey Area, and would have been composed of Northwestern Great Plains Mixedgrass Prairie before being developed for agricultural purposes. Most of this ground cover type is no longer being actively cultivated within the Survey Area, but corn, wheat, and alfalfa crops were likely planted before recent development.



- Northwestern Great Plains Mixedgrass Prairie: This natural ground cover type (ecological system) is located in the southwest portion and on the perimeter of the Survey Area. Dominant grasses include western wheatgrass, green needlegrass, and fescue (*Festuca spp.*), although blue grama (*Bouteloua gracilis*) and needle-and-thread (*Hesperostipa comate*) may also dominate. Shrub species including western snowberry, fringed sagewort (*Artemisia frigida*), and silver sagebrush (*Artemisia cana*) are also associated with this ecological system. Cool-season exotics such as Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), and Japanese brome (*Bromus japonicas*) can increase in dominance due to intensive grazing. This system is one of the most disturbed grassland systems in North Dakota (Comer, et al., 2003).
- Developed – Open Space: This cover type consists of previously-developed parcels of land, including pipeline scars, well pads, roads, and industrial plant footprints.
- Developed – Low Intensity: This cover type consists of a mixture of permanent development and open vegetation areas.

Table 1. GAP cover types and acreages within the Survey Area.

Vegetation Type	Acres	% of Survey Area
Cultivated Cropland	124.9	78.3%
Northwestern Great Plains Mixedgrass Prairie	25.8	16.1%
Developed, Open Space	8.7	5.5%
Developed, Low Intensity	0.1	<0.0%
Total	159.5	100.0%

2.3 CLIMATE

The Project Area climate is semi-arid to sub-humid and continental, with warm summers and very cold winters (Aziz, Champa, & Vanderbusch, 2006). In winter, the average temperature is 13 degrees Fahrenheit, with an average daily minimum temperature of 1 degree Fahrenheit. In summer, the average temperature is 72 degrees Fahrenheit, with an average daily maximum temperature of 88 degrees Fahrenheit. Mean annual precipitation for the Project Area is 15 inches, with 80 percent falling April through September (Aziz, Champa, & Vanderbusch, 2006). The average seasonal snowfall is approximately 35 inches.

2.4 SOILS

Soil types intersected by the Survey Area were analyzed through the NRCS Web Soil Survey in February of 2017 (NRCS, 2017a). Described below are the components of



dominant soil orders within the Survey Area. A list of all soil classifications and the acreage encompassed by the Survey Area are located in Table 2.

2.4.1 BELFIELD

The Belfield soil series is composed of deep and very deep, well to moderately well drained, slowly permeable soils. These soils are formed from alkaline, calcareous residuum or alluvium, and are located in uplands, flats, terraces, and swales with slopes of 0 to 9 percent. Belfield soils are present in areas with a mean annual temperature of 43 degrees Fahrenheit, receiving 15 inches mean annual precipitation. Small grain agriculture, hay, and pasture are the primary land uses associated with soils in the Belfield series, while potential native vegetation populations include western wheatgrass, blue grama, and green needlegrass (NRCS, 2017b).

2.4.2 CABBA

The Cabba soil series is composed of shallow, well drained soils that are formed from residuum or colluvium or partial consolidations of loamy, sedimentary soil beds. These soils are located on sedimentary plains, escarpments, and hills with slopes of 2 to 70 percent. Cabba soils are present in areas with a mean annual temperature of 43 degrees Fahrenheit, receiving 16 inches mean annual precipitation. Rangeland is the primary land use associated with soils in the Cabba series, while potential native vegetation populations include little bluestem, western wheatgrass, needle-and-thread, prairie sandreed, bluebunch wheatgrass, green needlegrass, plains muhly (*Muhlenbergia cuspidate*), and many common forbs and shrubs (NRCS, 2017b).

2.4.3 DAGLUM

The Daglum soil series is composed of deep and very deep, moderately well and well drained, slowly or very slowly permeable soils. These soils are formed in clayey alluvium or residuum on foot slopes and on upland or terrace swales, with slopes of 0 to 25 percent. Daglum soils are present in areas with a mean annual air temperature of about 42 degrees Fahrenheit, receiving 16 inches mean annual precipitation. This soil series is mainly used for small grain farming, while potential native vegetation populations include western wheatgrass, needleandthread, and blue grama (NRCS, 2017b).

2.4.4 DOOLEY

The Dooley soil series is composed of very deep, well drained soils. These soils are formed in alluvium or eolian material 20 to 40 inches deep over till or lacustrine deposits. Dooley soils are present in areas with a mean annual air temperature of about 41 degrees Fahrenheit, receiving 14 inches mean annual precipitation. Rangeland, pasture, and small grain agriculture are primary the land uses associated with soils in the Daglum series, while potential native vegetation populations include western wheatgrass, blue grama, green needlegrass, threadleaf sedge, and forbs (NRCS, 2017b).



2.4.5 WILLIAMS

The Williams soil series is composed of very deep, well drained soils that are in calcareous glacial till. These soils are located on glacial till plains and moraines with slopes of 0 to 35 percent. Williams soils are present in areas with a mean annual temperature of 40 degrees Fahrenheit, receiving 14 inches mean annual precipitation. Small-grain agriculture and pasture are the primary land uses associated with soils in the Williams series, while potential native vegetation populations include western wheatgrass, needle-and-thread, blue grama, green needlegrass, and prairie junegrass (*Koeleria cristata*) (NRCS, 2017b).

2.4.6 ZAHL

The Zahl soil series is composed of very deep, well drained, moderately slow or slowly permeable soils that form are formed in calcareous glacial till. These soils are located on glacial till plains, moraines, and valley side slopes with slopes of 1 to 60 percent. Zahl soils are present in areas with a mean annual temperature of 40 degrees Fahrenheit, receiving 14 inches mean annual precipitation. Rangeland, pasture, and small grain agriculture are the primary land uses associated with soils in the Zahl series, while potential native vegetation populations include little bluestem, western wheatgrass, and needle-and-thread (NRCS, 2017b).

Table 2. Soil components and acreages within Survey Area

Map Unit Symbol	Soil Types	Slopes (percent)	Acres within Survey Area	% in Survey Area
E0447B	Daglum-Belfield complex	0-6	32.7	20.5%
E0515B	Rhoades-Daglum complex	0-6	4.5	2.8%
E0559B	Dogtooth-Janesburg silt loams	0-6	14.7	9.2%
E2120A	Farnuf loam	0-2	5.8	3.7%
E3513B	Niobell-Williams loams	3-6	4.6	2.9%
E3527A	Williams-Bowbells loams	0-3	9.0	5.6%
E3541B	Williams-Zahl loams	3-6	5.6	3.5%
E3639C	Zahl-Williams-Cabba complex	6-9	17.7	11.1%
E3641D	Zahl-Cabba-Williams complex	9-15	4.5	2.8%
E3701B	Dooley fine sandy loam	3-6	4.8	3.0%
E3703B	Dooley-Zahl complex	3-6	26.2	16.4%
E3703D	Dooley-Zahl complex	9-15	8.8	5.5%
E4005A	Harriet loam. Occasionally flooded	0-2	3.7	2.3%
E4585B	Manning fine sandy loam	2-6	17.0	10.7%
Survey Area Total			159.5	100.0%

Source: (NRCS, 2017a)



SECTION 3: SURVEY METHODOLOGY

E3 completed natural resource surveys within the Survey Area on March 23, 2017. Natural resource surveys were performed on foot by an E3 biologist following guidelines published by the PSC, USACE, and Bureau of Land Management (BLM). Data was collected using Trimble® Juno T41/5 handheld GPS units facilitated with Terrasync® GIS software. Binoculars and spotting scopes assisted biologists with the observation and identification of wildlife within the Survey Area. All natural resource surveys were conducted concurrently, allowing the entire Survey Area to be completed during one site visit.

3.1 RAPTOR NESTS

Pedestrian raptor nest surveys were conducted by E3 biologists within the Survey Area and within line-of-site of the Survey Area. Suitable nesting substrates, such broad-leaf tree stands and windrows, were searched for raptor nests within the Survey Area. All nests were observed from a distance suitable to avoid disturbing the birds. Binoculars or spotting scopes were used to identify adult birds exhibiting nesting or brooding behavior (e.g. incubating or behaving agonistically). If nests were determined inactive, and within the Survey Area, the areas under, around, and in the nests were searched for signs of recent activity (fresh mite, regurgitated pellets, eggs, eggshell fragments, prey remains, etc.). Accurate GPS locations of raptor nests were recorded at each nest site and the nest status, condition, substrate, and species of raptor using the nests were documented (if possible). Annual activity status and productivity determinations were recorded for all nests. Note that many species of raptors (e.g. red-tailed hawks) reuse nesting sites annually.

3.2 WETLANDS AND WATERBODIES

E3 biologists identified and defined the boundaries of all wetlands and waterbodies observed during field surveys. Wetlands were mapped using methodology in accordance with the USACE *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (Environmental Laboratory, 2010). For an area to be delineated as a regulated wetland, the hydrophytic vegetative, wetland hydrology, and hydric soils must all be present and consistent with federal classification criteria. Wetlands inventoried within the Survey Area were classified using the Cowardin System, developed by the USFWS (Cowardin et al. 1979).

Waterbodies were identified and mapped by discerning the ordinary high water mark (OHWM) of each feature. Common indicators of an OHWM include open water or evidence of a natural line visible on the bank, shelving or terracing, changes in soil characteristics, vegetation changes, the presence of litter and debris, and watermarks



on structures that are inundated during normal high water conditions. The OHWM typically represents the potential limits of the USACE's jurisdiction. However, the USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies in this report. Jurisdictional characterizations were made for waterbodies, following the criteria outlined in the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (2007).

3.3 WOODY VEGETATION

E3 biologists mapped, characterized, and inventoried woody vegetation present within the Survey Area. The boundaries of each distinct woody vegetation habitat were mapped and are depicted on the Project maps in Appendix A. Woody vegetation within each patch was then inventoried by plant/shrub species. Direct tallies (100%) were employed in forested upland lands, shrublands, and riparian zones for all trees greater than one-inch diameter at breast height (DBH) when possible. Sub-sampling was employed in woodlands too dense to directly count. Large shrub patches were inventoried by measuring percent cover, unless habitat patches were small enough to count each individual. Regardless of DBH, all trees and shrubs were mapped, characterized, and inventoried within shelterbelts and windbreaks.

3.4 NOXIOUS WEEDS

Noxious weeds are defined by the Federal Noxious Weed Act of 1974 as “a plant which is of foreign origin, is new to, or is not widely prevalent in the United States, and can directly or indirectly injure crops or other useful plants, livestock or the fish and wildlife resources of the United States, or public health” (Title 7 United States Code 2801-2814, 2011). The State of North Dakota defines noxious weeds as “weeds that are difficult to control, easily spread, and injurious to public health, crops, livestock, land, or other property” (North Dakota Century Code 4.1-47-01, 2015b). North Dakota has County Weed Boards in all 53 counties, each of which has the opportunity to add noxious weeds to the state list for regulation only within their jurisdiction.

The North Dakota Department of Agriculture identifies 11 plant species as noxious weeds (2017). McKenzie County identifies seven additional problematic noxious weeds within its boundaries (North Dakota Department of Agriculture, 2016) (Table 3).



Table 3. State and County designated noxious weeds with the potential to occur within the Survey Area.

Common Name	Scientific Name	Noxious Designation	
		North Dakota	McKenzie County
Absinth wormwood	<i>Artemisia absinthium</i>	X	X
Baby's breath	<i>Gypsophila paniculata</i>		X
Black henbane	<i>Hyoscyamus niger</i>		X
Canada thistle	<i>Cirsium arvense</i>	X	X
Common burdock	<i>Arctium minus</i>		X
Dalmatian toadflax	<i>Linaria dalmatica</i>	X	X
Diffuse knapweed	<i>Centaurea diffusa</i>	X	X
Field bindweed	<i>Convolvulus arvensis</i>		X
Halogeton	<i>Halogeton glomeratus</i>		X
Houndstongue	<i>Cynoglossum officinale</i>		X
Leafy spurge	<i>Euphorbia esula</i>	X	X
Musk thistle	<i>Carduus nutans</i>	X	X
Purple loosestrife	<i>Lythrum salicaria</i>	X	X
Russian knapweed	<i>Acroptilon repens</i>	X	X
Saltcedar	<i>Tamarix ramosissima</i>	X	X
Spotted knapweed	<i>Centaurea stoebe</i>	X	X
Yellow starthistle	<i>Centaurea solstitialis</i>		X
Yellow toadflax	<i>Linaria vulgaris</i>	X	X

Source: North Dakota Department of Agriculture, 2016

E3 conducted surveys for noxious weeds within the Survey Area. Noxious weed infestations were identified and delineated in the field by mapping their boundaries using Trimble GPS units. Percent cover for all noxious weeds within each patch was estimated for each species.

3.5 THREATENED AND ENDANGERED SPECIES

The USFWS Information, Planning, and Conservation System (IPaC) was accessed on February 28, 2017 to obtain information regarding the presence of T & E species within the Survey Area (Table 4). This information does not represent a comprehensive survey, but rather acknowledges the potential presence of listed species within the Survey Area. The USFWS identifies eight threatened, endangered, or candidate species that have the potential to occur within the Survey Area or could potentially be impacted by



development within the Survey Area (USFWS, 2017b). However, no critical habitat for these species is currently identified within the Survey Area. These listed species were surveyed for opportunistically during the field visit in 2017.

Table 4. Federally listed species with the potential to occur within the Project Area.

Common Name	Scientific Name	Federal Status
Interior least tern	<i>Sterna antillarum athalassos</i>	Endangered
Piping plover	<i>Charadrius melodus</i>	Threatened
Rufa red knot	<i>Calidris canutus rufa</i>	Threatened
Whooping crane	<i>Grus americana</i>	Endangered
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered
Dakota skipper	<i>Hesperia decotae</i>	Threatened
Gray wolf	<i>Canis lupus</i>	Endangered
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened

Source: (USFWS, 2016b).

3.5.1 INTERIOR LEAST TERN

Federal Status: Endangered

The interior least tern is the smallest member of the gull and is federally listed as endangered due to river channelization and impoundment, water pollution, and receding water levels. The interior least tern is found throughout major interior rivers of the United States, including the Mississippi and Missouri rivers, where terns nest in bare, sandy areas along open water bodies. Nests are shallow holes and constructed between late April and August. Least terns prefer habitat near open or flowing water, where they hover in search of food, and dive for small fish (USFWS, 2016c). The interior least tern is identifiable by its small size, measuring at approximately nine inches in length. Breeding adults have gray upper bodies and white lower bodies, with a black cap, black nape, and black eye stripe. Vocalization is short and high pitched (USFWS, 2017c).

3.5.2 PIPING PLOVER

Federal Status: Threatened

The piping plover is a small shorebird that is federally listed as threatened due to human disturbance and habitat destruction. The piping plover is identifiable by its small size and stocky stature, with a sandy brown colored upper body, and white lower body. During the breeding season, adults have a black forehead, a black breast band, and an orange bill (USFWS, 2017c). This species nests on open, sparsely vegetated sand or



gravel beaches adjacent to alkali wetlands; and on beaches, sand bars, and dredged material islands of major river systems (USFWS, 2017c).

3.5.3 RUFA RED KNOT

Federal Status: Threatened

The rufa subspecies of the red knot is a medium sized shorebird that is federally listed as threatened due to horseshoe crab overharvesting, coastal development, and climate change (USFWS, 2017c). The rufa red knot is identifiable by its proportionally large wingspan of 20 inches to its body length of 9 inches. This bird is a larger member of the sandpiper family, with a short, straight bill that tapers to the tip. During breeding, rufa red knots bear a reddish breeding plumage, which is gray the rest of the year (USFWS, 2017c). Migratory habits and habitat requirements of this species are poorly understood, especially for populations utilizing midcontinent and intercontinental flyways. Migration routes are typically between South America and Canada, with inland stopovers in the Great Plains, Great Lakes, and various areas within the Mississippi Valley (USFWS, 2017c).

3.5.4 WHOOPING CRANE

Federal Status: Endangered

The whooping crane is a large bird species that is federally listed as endangered due to habitat destruction and historic over-hunting. The whooping crane is identified by its height, standing erect at five feet, and by its snow white plumage, with black primaries. This large-bodied bird is known by its vocal tone, which is a loud, single note that is vocalized when alarmed. The whooping crane may live up to 30 years (USFWS, 2017c). This species prefers a variety of wetland habitats in both salt and fresh water. Nesting occurs in wetland potholes in Canada, predominantly consisting of bulrush, but also including populations of cattail, sedge, musk-grass, and other common aquatic plants. Nest sites are typically found in shallow diatom ponds. Migration paths include stops in a variety of landscapes, although wetlands are preferred throughout the route (USFWS, 2017c).

3.5.5 PALLID STURGEON

Federal Status: Endangered

The pallid sturgeon is an aquatic fish that is federally endangered, primarily due to the habitat destruction resulting from river channelization and damming. The pallid sturgeon is identified by its flat, shovel-shaped snout, with a long, slender, and fully plated caudal peduncle. Consistent with other sturgeon species, the mouth of the pallid sturgeon is ventrally positioned, protrusible, and toothless. This species has a cartilaginous skeletal structure (USFWS, 2017c). The pallid sturgeon is a large river obligate, primarily in Missouri and Mississippi River Systems, in areas with diverse



habitat options. Pallid sturgeons prefer benthic environments with predominantly sandy and fine substrates, with successful populations of micro-invertebrates and deep water for spawning activity (USFWS, 2017c).

3.5.6 DAKOTA SKIPPER

Federal Status: Threatened

The Dakota skipper is a butterfly species listed as federally threatened due to habitat replacement for agricultural development. The Dakota skipper is identified by its one-inch wingspan and thick body, with an orange-brown color and brown characteristic wing markings. This butterfly has stronger wing motions compared to other species, resulting in faster and more powerful flight (USFWS, 2017c). The Dakota skipper is a low mobility species, therefore has short dispersal ranges (USFWS, 2017c). Suitable Dakota skipper habitat is described as native prairie grasslands with minimal degradation due to anthropogenic disturbance or invasive species establishment (USFWS, 2015).

3.5.7 GRAY WOLF

Federal Status: Endangered

The gray wolf is a large canine species that is federally listed as endangered due to habitat destruction, human interference, and overhunting. The gray wolf is identifiable by its canine body shape, long bushy tail with a black tip, and a mix of gray and brown coat colors. The average size of a gray wolf is 3-5 feet in length, weighing approximately 60-145 pounds (USFWS, 2017c). This species prefers a wide range of habitat, including forests, plains, prairies, agricultural areas, swamps, and barren lands, but has been extirpated from most of its historic range. Dens are located near water and dug into well-drained soil on a south-facing slope, under boulders, among tree roots, or in cut banks, hollow logs, or other natural structures. This species is a roaming predator, therefore are wide-ranging and rare to encounter (USFWS, 2017c).

3.5.8 NORTHERN LONG-EARED BAT

The northern long-eared bat (NLEB) is a federally threatened species not only due to habitat destruction, but also due to onset white-nose syndrome (WNS), which affects many bat species in the United States. NLEBs are medium sized bats with a body length of 3-4 inches and a wingspan of 9-10 inches. Their fur color ranges medium to dark brown on the back and light brown on the underside. This bat is distinguished by its long ears (USFWS, 2017c). During the summer months, this small mammal roosts individually or in colonies underneath bark, or in any indentations on both live and dead trees. The NLEBs tend to select tree stand roosts based on a range of factors, including the ability of the tree to retain loose bark and provide crevices or cavities for cover. Signs of roost presence include fallen loose bark and fecal matter in concentrated areas near tree bases in older stands. Breeding begins in late summer or early fall



(USFWS, 2017c). Currently, the NLEB is managed as threatened under the Final 4(d) rule (USFWS 2016).

SECTION 4: RESULTS

4.1 RAPTOR NESTS

No raptor nests were recorded by E3 biologists during pedestrian surveys in March of 2017. Suitable roosting habitat, overwintering habitat, or previously-recorded nests for bald and golden eagles were not present within the Survey Area.

4.2 WETLANDS AND WATERBODIES

Desktop review of the Survey Area indicates wetlands/waterbodies are not present within the Project Area. Neither the National Wetlands Inventory (NWI) nor the National Hydrography Dataset (NHD) contain wetlands or waterbodies within the Survey Area (USFWS, 2017a). During field surveys, E3 did not identify wetlands/waterbodies within the Survey Area, though a man-made ditch flows west to east along the northern boundary (see Appendix B). The water collected by the ditch drains north through a culvert into a tributary of Tobacco Garden Creek. This drainage is likely non-jurisdictional due to its ephemeral hydrology; however, the USACE has final authority on jurisdictional status. Refer to the Project maps in Appendix A for the location of this feature.

4.3 WOODY VEGETATION

No woody vegetation was identified or mapped within the Survey Area.

4.4 NOXIOUS WEEDS

No noxious weeds were identified or mapped within the Survey Area.

4.5 THREATENED AND ENDANGERED SPECIES

No candidate, threatened, or endangered species were encountered by E3 biologists during field surveys within the Survey Area. The following sections detail the potential effects the Project could have on listed species.

4.5.1 INTERIOR LEAST TERN

Federal Status: Endangered

The Missouri River, located approximately 15 miles to the north of the Project, provides suitable breeding and nesting habitat for least terns. However, the Survey Area does not contain rivers or associated sandbars, banks, or broad beaches necessary for colonial nesting. Due to the lack of nesting habitat within the Survey Area, impacts to the interior least tern are not anticipated.



4.5.2 PIPING PLOVER

Federal Status: Threatened

Lake Sakakawea and the Missouri River, located approximately 15 miles to the north of the Project, provide suitable breeding and nesting habitat for piping plovers. This area is mapped as critical habitat by the USFWS. However, the Survey Area does not contain rivers or associated sandbars or gravel beaches necessary for nesting. Due to the lack of nesting habitat within the Survey Area, impacts to the piping plover are not anticipated.

4.5.3 RUFA RED KNOT

Federal Status: Threatened

North Dakota is a possible migration stopover in spring and autumn for the rufa red knot, particularly within Lake Sakakawea and its major tributaries. Due to the lack of suitable foraging habitat within the Survey Area, impacts to this species and its associated habitat are not anticipated.

4.5.4 WHOOPING CRANE

Federal Status: Endangered

Suitable migratory habitat for the whooping crane is potentially located within the Survey Area (wet fields). If whooping cranes are sighted within 0.5 miles of the Project, E3 recommends suspending all heavy equipment operation until birds vacate the area. Any potential sightings of whooping cranes would be verified and reported to the USFWS. Provided these measures are fully implemented, potential impacts to this species are not anticipated.

4.5.5 PALLID STURGEON

Federal Status: Endangered

The Project does not cross any waterbodies classified as suitable habitat for the pallid sturgeon. Therefore, the Project will have no impacts to this listed species.

4.5.6 DAKOTA SKIPPER

Federal Status: Threatened

To date, no Dakota skippers have been identified within the Survey Area and the nearest critical habitat identified by the USFWS is located 13 miles north of the Project in McKenzie County. Additionally, the entire Survey Area has been disturbed by agricultural practices, construction, and other ground-disturbing activities. Due to the lack of flowering forbs and native grasses, suitable Dakota skipper habitat does not occur within the Survey area. Therefore, the Project will have no impacts to this listed species.



4.5.7 GRAY WOLF

Federal Status: Endangered

The Survey Area intersects potentially suitable habitat for the gray wolf, however potential habitat is not expansive, and is near regular human activity. Because the Project would likely act as a deterrent, impacts to this species are unlikely.

4.5.8 NORTHERN LONG-EARED BAT

Federal Status: Threatened

Suitable roosting habitat and hibernacula do not occur within the Survey Area. Additionally, because the Project occurs outside of the White-Nose Syndrome Zone, there are no restrictions to tree-removing activities per the Final 4(d) Rule. Therefore, no impacts to this species are anticipated.

SECTION 5: RECOMMENDATIONS

Based on the findings during field surveys, E3 recommends the following guidance to maintain compliance with regulatory agencies and minimize its impact on resident natural resources:

Raptors:

- Conduct a raptor nest survey within line-of-site of the Survey Corridor prior to construction (if construction occurs before September 1)
- Adhere to USFWS-suggested timing buffers for active raptor nests during nesting season (April 15-August 30)
- Report active nest sites to the USFWS

Woody vegetation:

- Minimize removal of woody vegetation
- Follow PSC guidelines for tree-clearing activity

Wetlands/waterbodies:

- Minimize ground disturbance activities through wetlands/waterbodies
- Minimize equipment rutting by use of construction mats
- Restore disturbed areas promptly to original contours

Noxious weeds:

- Minimize topsoil spread and traffic in areas with high concentrations of noxious weeds



-
- Visually inspect equipment prior to leaving infested areas – clean vegetation and soils from vehicles and equipment prior to entering uninfested tracts
 - Contractors will thoroughly clean the equipment and materials (e.g., timber mates, bridges, etc.) at the contractor yard prior to mobilization to the Project and upon departure from locations of infestations to prevent spread of nuisance weeds

Threatened and Endangered Species:

- If any threatened or endangered species are encountered during construction activities, report internally for external communication to agencies, as appropriate.
- If construction activities occur between April 15-July 15, conduct a breeding bird sweep of the impacted area within two weeks of construction to minimize impacts to protected bird species



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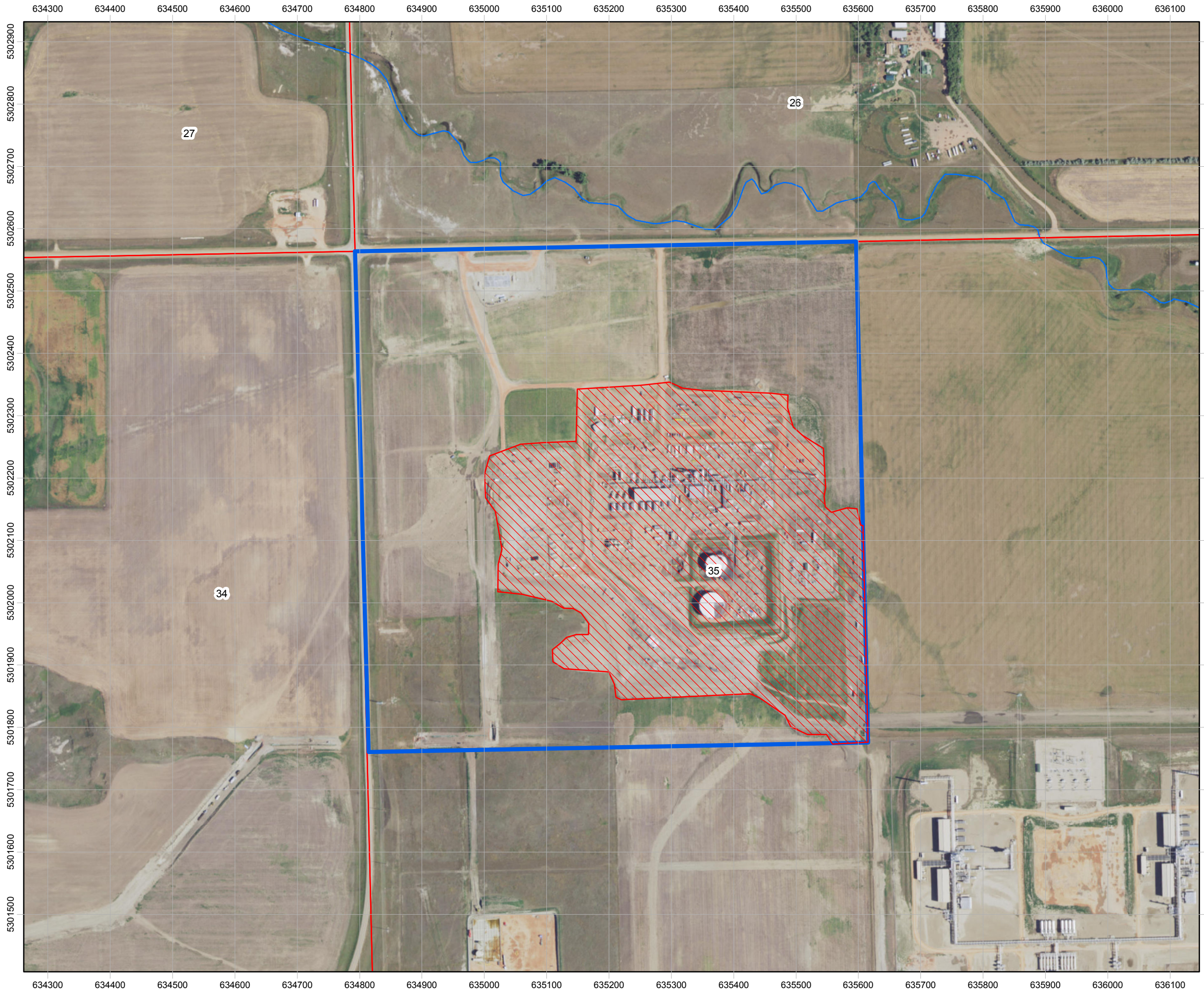


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

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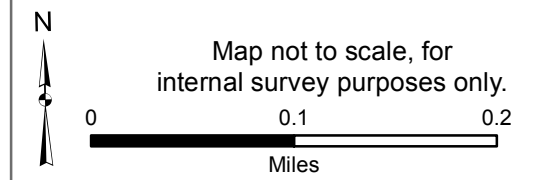
Appendix A
Natural Resource Maps



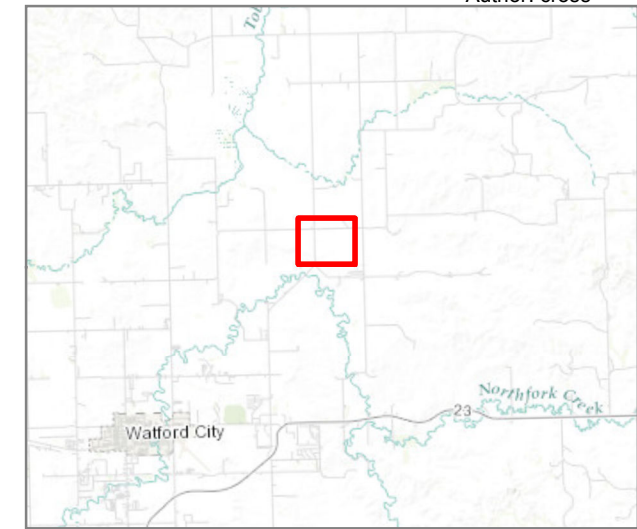
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 Wild Basin Gas Plant
 Expansion Project

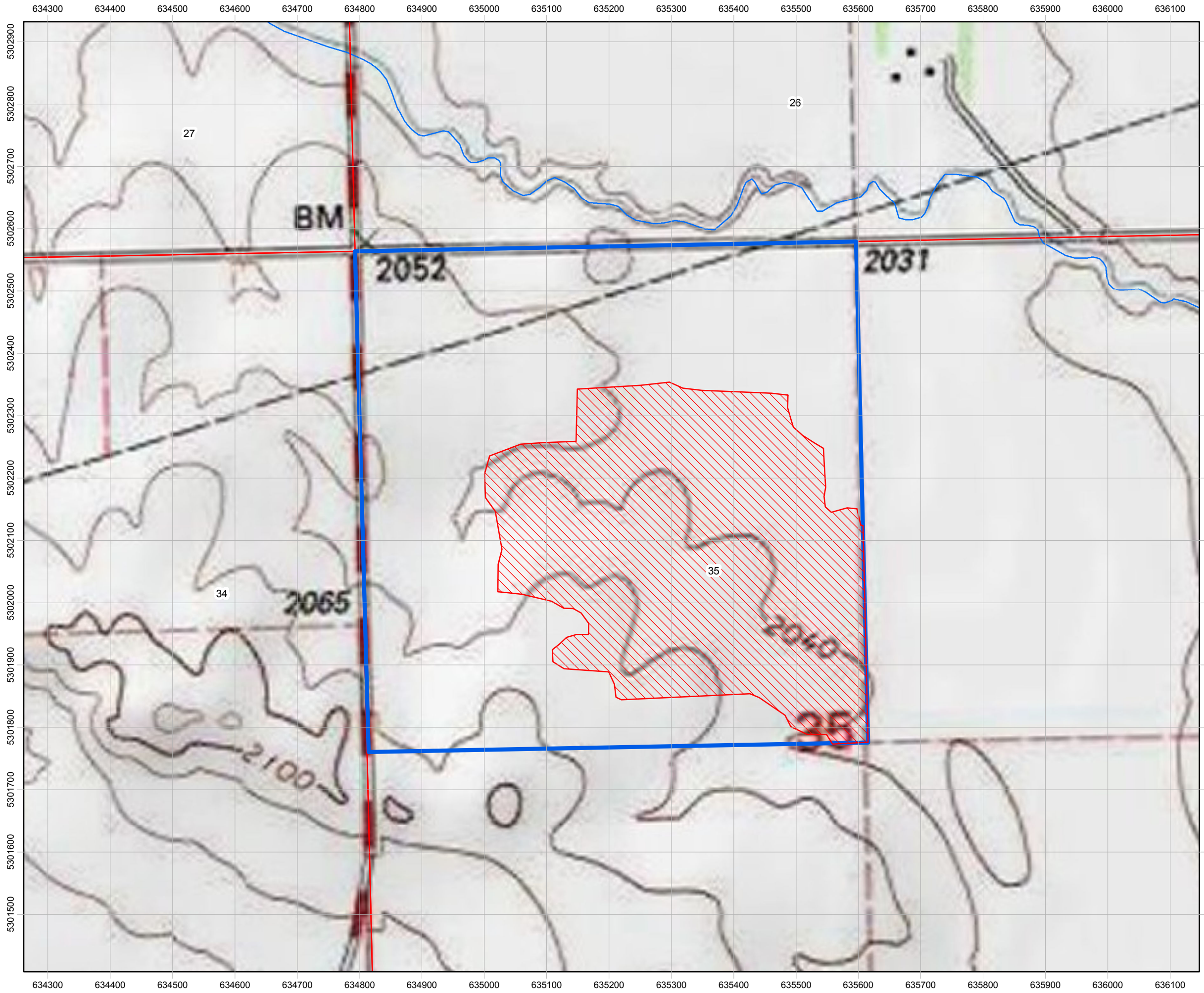
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 -  Survey Area
 -  NHD Flowline
 -  NHD Waterbody
 -  NWI Wetland



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





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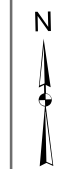
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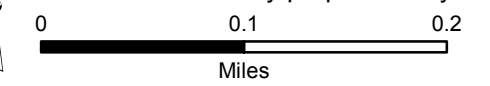
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-  Survey Area
-  NHD Flowline
-  NHD Waterbody
-  NWI Wetland



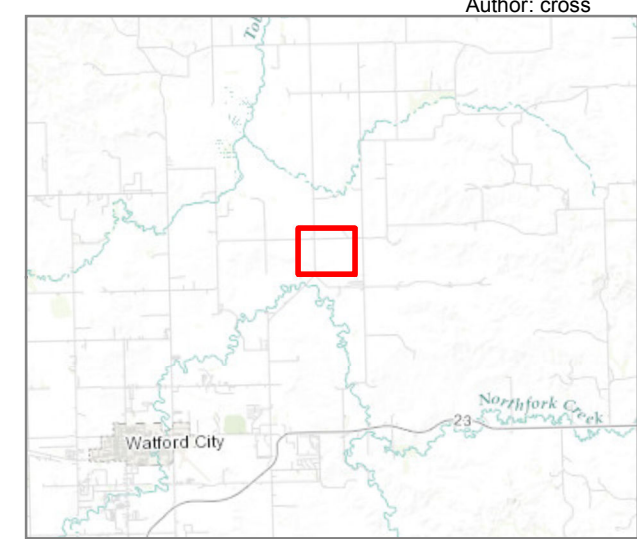
E3 ENVIRONMENTAL
Enhancing Execution with Experience



Map not to scale, for
 internal survey purposes only.



Author: cross



Appendix B
Field Photographs



Photo 1. Gas plant expansion area facing west.



Photo 2. Gas plant expansion area facing east.



Photo 3. Scoria and gravel covering a portion of Survey Area.



Photo 4. Disturbed grassland with remnant winter wheat within Survey Area.



Photo 5. Ditch running west to east bordering northern edge of Survey Area.



Photo 6. Snow melt flowing north towards culvert (facing south).

Appendix E

Cultural Resources Report

Privileged and Confidential

Redacted

Appendix F

10-Year Plan

TEN YEAR PLAN: 2015-2025
Oasis Midstream Services

October 2015

In accordance with Section 49-22-04 of the North Dakota Century Code and Chapter 69-06-02 of the North Dakota Administrative Code, Oasis Midstream Services (“Oasis”), submits the following Ten Year Plan for years 2015 through 2025.

- 1) *A description of the general location, size, and type of all facilities to be owned or operated by the utility during the ensuing ten years, as well as those facilities to be removed from service during the ten-year period.*

Oasis currently does not own or operate any transmission or energy conversion facilities in North Dakota. Oasis submitted a Certificate of Corridor Compatibility Application and Route Permit Application, requesting permission from the Commission to construct an approximately 19-mile crude oil pipeline originating at Oasis’s Wild Basin Crude Handling Facility located approximately 5.5 miles northeast of Watford City, North Dakota in McKenzie County. The crude oil pipeline will connect to one or more 3rd party pipelines near Johnson’s Corner in McKenzie County (the “Project”). As noted, the Project will be located within McKenzie County, North Dakota.

Oasis may construct other pipeline transmission facilities in McKenzie County for crude oil transport to the Wild Basin Crude Handling Facility. From the Crude Handling Facility, oil would be transported through the Oasis Pipeline to delivery points other than those at Johnson’s Corner. The need and timing of any other transmission pipeline facility is subject to further commercial discussion and an expanded open season for Oasis.

Oasis does not own or operate any facilities that it plans to remove from service during the next ten years.

- 2) *An identification of the location of the tentative preferred site for all energy conversion facilities and the tentative location of all transmission facilities on which construction is intended to be commenced within the ensuing five years and such other information as may be required by the commission. The site and corridor identification shall be made in compliance with the criteria published by the commission pursuant to section 49-22-05.1.*

Oasis has no proposed energy conversion facilities on which construction is intended within the ensuing five years in North Dakota.

As discussed above, Oasis submitted a Certificate of Corridor Compatibility Application and Route Permit Application for the Project to be located in McKenzie County, North Dakota. The Project will begin at the Wild Basin Crude Handling Facility located in Section 35, Township 151 North, Range 98 West in McKenzie County and proceed East-Southeast to Section 18, Township 150 North, Range 95 West in McKenzie County where it will terminate at one or more 3rd party delivery points near Johnson’s Corner.

Oasis conducted natural resource and cultural surveys to determine the best location for the placement of the corridor and route. The surveys were used to minimize any potential land use and environmental impacts, maximize public benefits, and take into consideration design and construction limitations and economics. The proposed location of the route within the corridor was made in compliance with Chapter 49-22-05.1, as discussed in the Applications for a Certificate of Corridor Compatibility and Route Permit Oasis filed with the Commission.

- 3) *A description of the efforts by the utility to coordinate the plan with other utilities so as to provide a coordinated regional plan for meeting the utility needs of the region.*

In developing the above-described pipeline project, Oasis coordinated with affected landowners and many local, state, and federal government agencies to eliminate conflicts in land use. Oasis does coordinate regionally with producers and shippers of crude oil, however, Oasis does not have contact with other pipelines due to confidentiality concerns and potential anti-trust issues.

- 4) *A description of the efforts to involve environmental protection and land-use planning agencies in the planning process, as well as other efforts to identify and minimize environmental problems at the earliest possible stage in the planning process.*

Oasis recognizes the various federal, state, and municipal regulatory agencies within the state of North Dakota that have environmental compliance authority over the construction, operations, and maintenance of its proposed Oasis Pipeline. Oasis is committed to developing and fostering an ongoing working relationship with each of these agencies.

Oasis will collaborate with local Emergency Management officials and planning commissions in the construction of the Oasis Pipeline. Oasis is committed to maintaining a strong safety record through emergency preparedness and readiness to mitigate the impact of a pipeline failure. Oasis is committed to environmental compliance during the execution of any future projects and will seek the approval of and comply with the conditions of all federal, state, and municipal agencies having jurisdictional authority over the construction and installation of any new facilities.

- 5) *A statement of the projected demand for the service rendered by the utility for the ensuing ten years and the underlying assumptions for the projection, with that information being as geographically specific as possible, and a description of the manner and extent to which the utility will meet the projected demands.*

The development of hydrocarbon production in the Williston Basin has increased significantly in recent years due to advancements in deep horizontal directional drilling techniques and subsequent oil extraction in the Bakken and Three Forks shale formations. The total recoverable amount of Bakken and Three Forks oil reserves is subject to interpretation and speculation. Studies conducted by the North Dakota

department of Mineral Resources (NDDMR)¹ and the U.S. Geological Survey² in 2008 and 2010 indicate that 4.0 to 6.3 billion barrels of recoverable reserves are available in North Dakota's Bakken and Three Forks formations. The most recent U.S. Geological Survey information estimated there may be 7.4 billion barrels of oil still undiscovered in the Bakken and Three Forks formations.³ Information from the NDDMR indicates that oil production has increased dramatically over the past five years from approximately 263,000 bpd in 2010 to over 1,000,000 bpd in April 2014,⁴ and production is expected to continue to increase dramatically.

The major constraint in transporting oil and gas from North Dakota to refining centers is the lack of pipeline capacity. Several major projects have been planned to address the growing volumes, but pipeline capacity is not expected to keep pace with the production, leaving incremental volumes to find alternative transportation methods, primarily by rail.

Oasis's proposed nineteen mile, ten-inch diameter crude oil pipeline will provide needed capacity to transport increased production of crude oil from the Bakken and Three Forks formations. In addition, to accommodate the ever-increasing Bakken development in northwestern North Dakota, the construction of even more processing and transmission infrastructure will be required, and Oasis may develop additional facilities to address this need within the next ten years.

¹ Bohrer, M., Fried, S., Helms, L., Hicks, B., Juenker, B., McCusker, D., Anderson, F., LeFever, J., Murphy, E., and Nordeng, S., North Dakota Department of Mineral Resources. State of North Dakota Bakken Resource Study Project 23 (2008).

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³ United States Geological Survey, Assessment of Undiscovered Oil Resources in the Bakken and Three Forks Formations, Williston Basin Province, Montana, North Dakota, and South Dakota (2013), *available at* <http://pubs.usgs.gov/fs/2013/3013/>

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