United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E., Suite 400
Aberdeen, South Dakota 57401

IN REPLY REFER TO:
DESCRM
MC-208

OCT 2 6 2012

MEMORANDUM

TO: Superintendent, Fort Berthold Agency

FROM: Acting Regional Director, Great Plains Region

SUBJECT: Environmental Assessment and Finding of No Significant Impact

In compliance with the regulations of the National Environmental Policy Act (NEPA) of 1969, as amended, an Environmental Assessment has been completed and a Finding of No Significant Impact (FONSI) has been issued. The EA authorizes land use for eight Bakken oil and gas wells located atop two well pads on the Fort Berthold Indian Reservation.

All the necessary requirements of the National Environmental Policy Act have been completed. Attached for your files is a copy of the EA, FONSI and Notice of Availability. The Council on Environmental Quality (CEQ) regulations require that there be a public notice of availability of the (40 C.F.R. Section 1506.6(b)). Please post the attached notice of availability at the Agency and Tribal buildings for 30 days.

If you have any questions, please call Marilyn Bercier, Regional Environmental Scientist, Division of Environment, Safety and Cultural Resources Management, at (605) 226-7656.

Tim LaPointe

Attachment

cc: Tex Hall, Chairman, Three Affiliated Tribes (with attachment)
Elgin Crows Breast, Tribal Historic Preservation Officer (with attachment)
Daniel Velder, BLM, Bureau of Land Management (with attachment)
John Cannon, URS (with attachment)
Eric Wortman, EPA (with attachment)
Carson Hood/Fred Fox, MHA Energy Dept. (with attachment)
Jonathon Shelman, Corps of Engineers (e-mail)
Jeff Hunt, Fort Berthold Agency (e-mail)

Finding of No Significant Impact

Marathon Oil Company (Marathon)

Environmental Assessment for
Development of Two Oil & Gas Well Pads Supporting up to Eight Wells

- *Felix USA 8-1H*
- *Felix USA 8-1TFH*

Fort Berthold Indian Reservation
Dunn County, North Dakota

The U.S. Bureau of Indian Affairs (BIA) has received a proposal to drill up to eight oil and gas wells located atop two well pads. The pads will be located adjacent to one another and will be in a tiered design. Each pad will support up to eight wells. Development will include an associated single access road and utility corridor as follows:

- Felix USA 8-1H and Felix USA 8-1TFH Well Pads, 130-foot access road/utility corridor located in Sections 17 and 20, Township 146 North, Range 92 West, 5th P.M. (Dunn County, ND)

Associated federal actions by BIA include determinations of effect regarding environmental resources and positive recommendations to the Bureau of Land Management regarding the Applications for Permit to Drill.

The potential of the proposed action to impact the human environment is analyzed in the following Environmental Assessment (EA), as required by the National Environmental Policy Act. Based on the EA, I have determined that the proposed project will not significantly affect the quality of the human or natural environment. No Environmental Impact Statement is required for any portion of the proposed activities.

This determination is based on the following factors:

1. Agency and public involvement solicited for the preceding NEPA document was sufficient to ascertain potential environmental concerns associated with the currently proposed project.

2. Protective and prudent measures were designed to minimize impacts to air, water, soil, vegetation, wetlands, wildlife, public safety, water resources, and cultural resources. The remaining potential for impacts was disclosed for both the proposed action and the no action alternatives.

3. Guidance from the U.S. Fish and Wildlife Service has been fully considered regarding wildlife impacts, particularly in regard to threatened or endangered species. This guidance includes the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250), Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds", and the Endangered Species Act (16 U.S.C. 1531 et seq.).

4. The proposed action is designed to avoid adverse effects to historic, archaeological, cultural and traditional properties, sites and practices. Compliance with the procedures of the National Historic Preservation Act is complete.

5. Environmental justice was fully considered.
6. Cumulative effects to the environment are either mitigated or minimal.
7. No regulatory requirements have been waived or require compensatory mitigation measures.
8. The proposed project will improve the socio-economic condition of the affected Indian community.

Acting Tim LaFromboise
Regional Director

10-26-2012
Date

ENVIRONMENTAL ASSESSMENT

United States Department of the Interior
Bureau of Indian Affairs

Great Plains Regional Office
Aberdeen, South Dakota

Marathon Oil Company

Development of Two Oil & Gas Well Pads Supporting up to Eight Wells

- Felix USA 8-1H
- Felix USA 8-1TFH

Fort Berthold Indian Reservation

October 2012

For information contact:
Bureau of Indian Affairs, Great Plains Regional Office
Division of Environment, Safety and Cultural Resources Management
115 4th Avenue SE
Aberdeen, South Dakota 57401
605-226-7656

Table of Contents

Tables Listed

Figures Listed

CHAPTER 1 – PURPOSE AND NEED FOR ACTION

1.1 Introduction

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and the regulations of the Council on Environmental Quality (CEQ), 40 CFR parts 1500 through 1508. This EA is not a decision document, but rather it is an informational document that provides disclosure of the potential environmental consequences of the No Action and Proposed Action alternative. This EA provides the basis for the Bureau of Indian Affair's (BIA) review and evaluation of potential effects of the Proposed Action as well as the No Action alternative.

1.2 Project Setting

The Fort Berthold Indian Reservation (FBIR) encompasses 988,000 acres, 457,837 of which are in tribal and individual Indian ownership by the Three Affiliated Tribes (Mandan, Hidatsa, and Arikara) and its members. The reservation is located in west-central North Dakota and is split into three areas by Lake Sakakawea, which traverses the center of the reservation. Six segments (or communities) are represented in the Tribal Council, including: Four Bears, Mandaree, New Town, Parshall, Twin Buttes, and White Shield. The reservation occupies portions of six counties: Dunn, McKenzie, McLean, Mercer, Mountrail, and Ward.

The FBIR lies atop the Bakken Formation, a geologic formation rich in oil and gas deposits that extends approximately 25,000 square miles beneath North Dakota and Montana, United States, and Saskatchewan and Manitoba, Canada. Approximately two-thirds of the Bakken Formation is beneath North Dakota and, underlying the Bakken, is the Three Forks Formation. It is estimated that the Bakken Formation contains approximately 169 billion barrels of oil and the Three Forks Formation contains about 20 billion barrels. The North Dakota Department of Mineral Resources estimates that there are approximately 2 billion barrels of recoverable oil in each of these formations. The Department's director estimates that there are 30–40 remaining years of production, or more if advancements in technology allow for greater recovery.

1.3 Description of the Proposed Action

The Proposed Action includes approval by the BIA and Bureau of Land Management (BLM) for Marathon Oil Company (Marathon) to drill and complete up to eight wells from two separate well pads (located adjacent to each other in a tiered design) targeting the Bakken and Three Forks Formations. Each well pad would support up to four oil and gas wells. The proposed surface locations of the well pads are located on the FBIR and are proposed to be positioned in Section 17, Township 146 North, Range 92 West, 5th P.M. (Dunn County). ***Please refer to Figure 1. Project Location Map.***

The wells to be drilled from the Felix USA well pads would develop the spacing units consisting of Sections 5 & 8, and 17 & 20, Township 146 North, Range 92 West, 5th P.M. Each of the Felix USA well pads would house the tank battery, heater/treater, and flare pit. The layout of the Felix USA well pads will be in a tiered design to minimize disturbances to the topography of the site. These design elements have been implemented to minimize environmental impacts while maximizing well economics and reservoir drainage. Proposed completion activities include acquisition of ROW, infrastructure for the proposed well, and roadway development. The following wells are proposed for each pad:

Table 1. Proposed Wells on Each Proposed Well Pad

Well Pad	Proposed Wells
Felix USA 8-1TFH	• Martinez USA 24-8H • Felix USA 8-1TFH * • Shaw USA 14-8H • Yellow Bird USA 31-17H
Felix USA 8-1H	• Eagleshield USA 34-8TFH • Felix USA 8-1H * • Fitzgerald USA 44-8TFH • Holter USA 44-8H
* Indicates first well to be drilled off of the identified pad	

1.4 Purpose and Need for the Proposed Action

The Three Affiliated Tribes own their mineral resources on the FBIR, which are held in trust by the United States government and administered by BIA. The Purpose and Need for the Proposed Action is to allow the Three Affiliated Tribes to further develop its mineral resources by drilling up to eight wells at the identified locations with Marathon's lease area and in accordance with terms and conditions of Marathon's lease agreements. The BIA's positive recommendation to the BLM on approval of the Application to Drill (APD) to drill up to eight wells would provide important benefits to the Three Affiliated Tribes, including revenue that could contribute to the Tribal budgets, satisfy Tribal obligations, and fund land purchase programs to stabilize its land base. It would also provide individual members of the Tribes with needed employment and income.

Development of oil and gas resources in western North Dakota has increased dramatically in recent years with July 2012 oil production estimates of 674,066 barrels/day and July 2012 gas production estimates of 718,796 MCF/day, both of which are records for North Dakota. The Proposed Action would give the United States the continued opportunity to develop its domestic oil and gas resources which, in turn, reduces its dependence on foreign oil and gas.

1.5 Regulations that Apply to Oil and Gas Development Projects

The BIA's general mission is to represent the interests, including the trust resources, of the members of the Three Affiliated Tribes. Oil and gas exploration and subsequent development are under the authority of the Energy Policy Act of 2005 (42 United States Code [USC] 15801, et seq.), the Federal Onshore Oil and Gas Royalty Management Act of 1982 (30 USC 1701, et seq.), the Indian Mineral Development Act of 1982 (25 USC 2101, et seq.), and the Indian Mineral Leasing Act of 1938 (25 USC 396a, et seq.). BIA's role in the Proposed Action includes approving easements, leases and ROWs; determining effects on cultural resources; and making recommendations to the BLM. Under the BIA's regulations at 25 CFR Part 225, the BLM exercises authority over oil and gas development on Tribal lands under its implementing regulations at 43 CFR Part 3160 and its internal supplemental regulations and policies. The BLM's authority includes the inspection of oil and gas operations to determine compliance with applicable statutes, regulations, and all applicable orders. These include, but are not limited to, conducting

operations in a manner which ensures the proper handling, measurement, disposition, and site security of leasehold production; and protecting other natural resources, environmental quality, life, and property.

Due to the project's location on Federal lands, the BIA must comply with NEPA before it issues a determination of effect regarding environmental resources and provides a recommendation to the BLM regarding the Applications for Permit to Drill (APD). Therefore, an EA for the proposed well pads is necessary to analyze the direct, indirect, and cumulative impacts of the proposed project. Impacts for both the No Action Alternative and the Proposed Action have been evaluated.

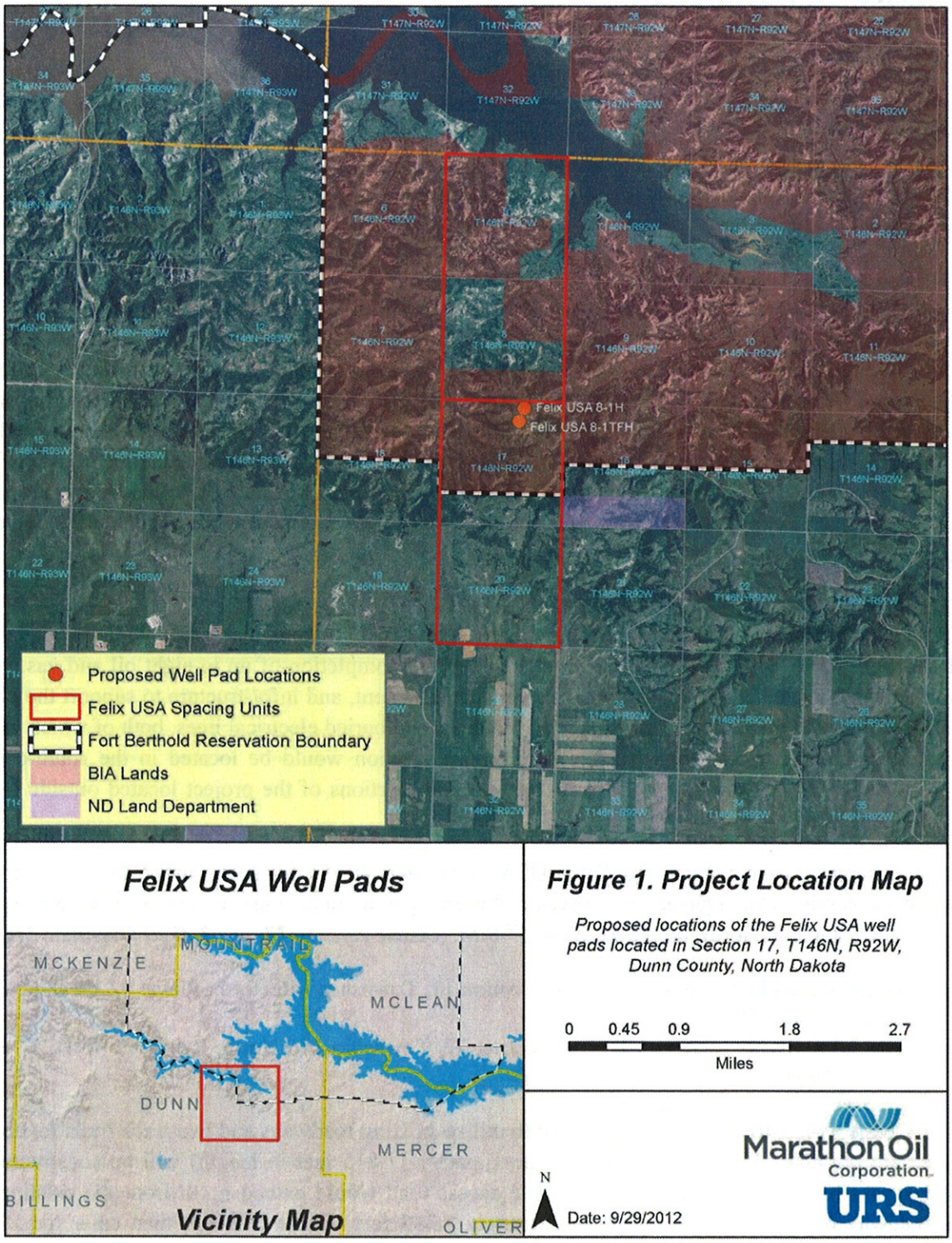


Figure 1. Project Location Map

CHAPTER 2 – ALTERNATIVES

2.1 Introduction

As required by NEPA, the BIA must "study, develop, and describe appropriate alternatives to the recommended course of action in any proposal that involves unresolved conflicts concerning alternative resources..." (NEPA Sec 102[2] [e]). This chapter provides information on the development and evaluation of project alternatives. The development of alternatives is directly related to the Purpose and Need for the project. Two alternatives are being considered for this project: a No Action Alternative and a Proposed Action Alternative.

2.2 The No Action Alternative

Under the No Action Alternative, the BIA and BLM would not authorize the development of the well pads and associated infrastructure (including gathering lines and the access road). This would not result in drilling or completion of any oil and gas wells. The BIA would not approve easements, leases, or ROW for the proposed location and the BLM would not approve the APDs. There would be no environmental impacts associated with this alternative. However, the Three Affiliated Tribes and its members would not have the opportunity to receive potential financial gains on production or other economic benefits from oil and gas development on the reservation. Further, the oil and gas resources targeted by the Proposed Action would not be explored for commercial production or recovered and made available for domestic energy use.

2.3 The Proposed Action

The Proposed Action includes authorization by the BIA and BLM to construct two well pads (Felix USA 8-1H and Felix USA 8-1TFH), resulting in the drilling and completion of up to eight oil and gas wells, including the associated ROW acquisition, roadway development, and infrastructure to support the wells. Infrastructure may include oil and gas gathering pipelines and buried electrical lines, both of which would be located within the access road ROW. The Proposed Action would be located in the south-central portion of the FBIR in Dunn County, North Dakota, with portions of the project located outside of the FBIR on private surface.

Marathon proposes to construct the Felix USA well pads in the locations listed below to access Marathon's potential oil and gas lease reserves within the spacing units consisting of Sections 5 & 8, and 17 & 20, Township 146 North, Range 92 West, 5th P.M. ***Please refer to Figure 2. Well Overview Map.***

- **Felix USA 8-1TFH** – NW ¼ NE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M. (Dunn County, ND)
- **Felix USA 8-1H** – NW ¼ NE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M. (Dunn County, ND)

The Felix USA well pads have been positioned to utilize existing roadways and two-track trails for access to the extent possible. A new access road (approximately 11,815 feet in length) will be constructed to provide access to the Felix USA well pads. The access road would extend north from the existing 2nd Street roadway on private surface for approximately 7,345 feet, where it would then enter the FBIR, extending an additional 4,470 feet to the proposed Felix USA well pads. This access road corridor (from 2nd Street to the SW ¼ NE ¼ of Section 20, Township 146 North, Range 92 West) will also be used to access Marathon's proposed Point USA well pad. In addition, a 200 foot access road will be constructed to connect the Felix USA pads. Development of the access road would also include a 130 foot ROW

utility corridor (for oil and gas gathering pipelines, buried electrical lines, etc.). ROW would be located to avoid sensitive surface resources and any cultural resources identified in site surveys. The access road would be designed to eliminate overly steep grades, maintain current drainage patterns, and provide all-weather driving surfaces. Minor spot grading may be needed to flatten existing landscape grades along the proposed access road alignment. Culverts and cattle guards would be installed along this new access road.

The Proposed Action would consist of two 1,280-acre spacing units which would be developed by up to eight individual wells, located atop two individual well pads (located adjacent to each other in a tiered design), with an access road and associated infrastructure. The well pads would each house the tanks, heater/treater, and flare pit. The layout of the Felix USA well pads will be in a tiered design to minimize disturbances to the topography of the site. The spacing unit is the subsurface location of the minerals that are to be developed. The location and design of the well pads, access road, and proposed horizontal drilling techniques were chosen to minimize surface disturbance and reduce environmental impacts while maximizing well economics and reservoir drainage.

2.3.1 Activities that Apply to Development of the Well Pad

The following sections discuss in detail the construction components that would be consistent for the proposed Felix USA project.

2.3.1.1 Preliminary Site Assessment

Five preliminary site assessment surveys were conducted prior to the BIA EA on-site assessment (May 24-25, June 12, July 5, and July 25, 2012) to evaluate the development suitability of the proposed well pad and access road locations with regards to botanical, biological, migratory bird, threatened and endangered species, eagles, soils, cultural resources, and water resources. An approximate 22 acre study area surrounding both Felix USA well pads and a 200 foot wide access road /utility corridor was evaluated for the project area. The BIA-facilitated EA on-site assessment of the proposed Felix USA well pads and access road was conducted on July 30, 2012. The BIA Environmental Protection Specialist and representatives from Marathon, William H. Smith and Associates, Three Affiliated Tribes Fish and Wildlife Department, the Tribal Historic Preservation Office (THPO), and URS were present. During the EA on-site assessment, construction suitability with respect to topography, topsoil stockpiling, surface drainage, erosion control, sloping, and other surface issues were considered. The following adjustments were made in the field with regards to pad and access road locations/design:

- Per BIA's request, the Felix USA access road near the Felix USA 8-1H pad was shifted to the east approximately 35 feet to avoid cutting into a steep slope.
- Per BIA's request, Marathon agreed to adjust the cut slope on the south end of the Felix USA 8-1TFH from 2:1 to a 1.5:1 slope to pull the disturbance area in from the adjacent clay butte. If Marathon only develops a single well from the pad, then a 2:1 slope on the south end will be sufficient.

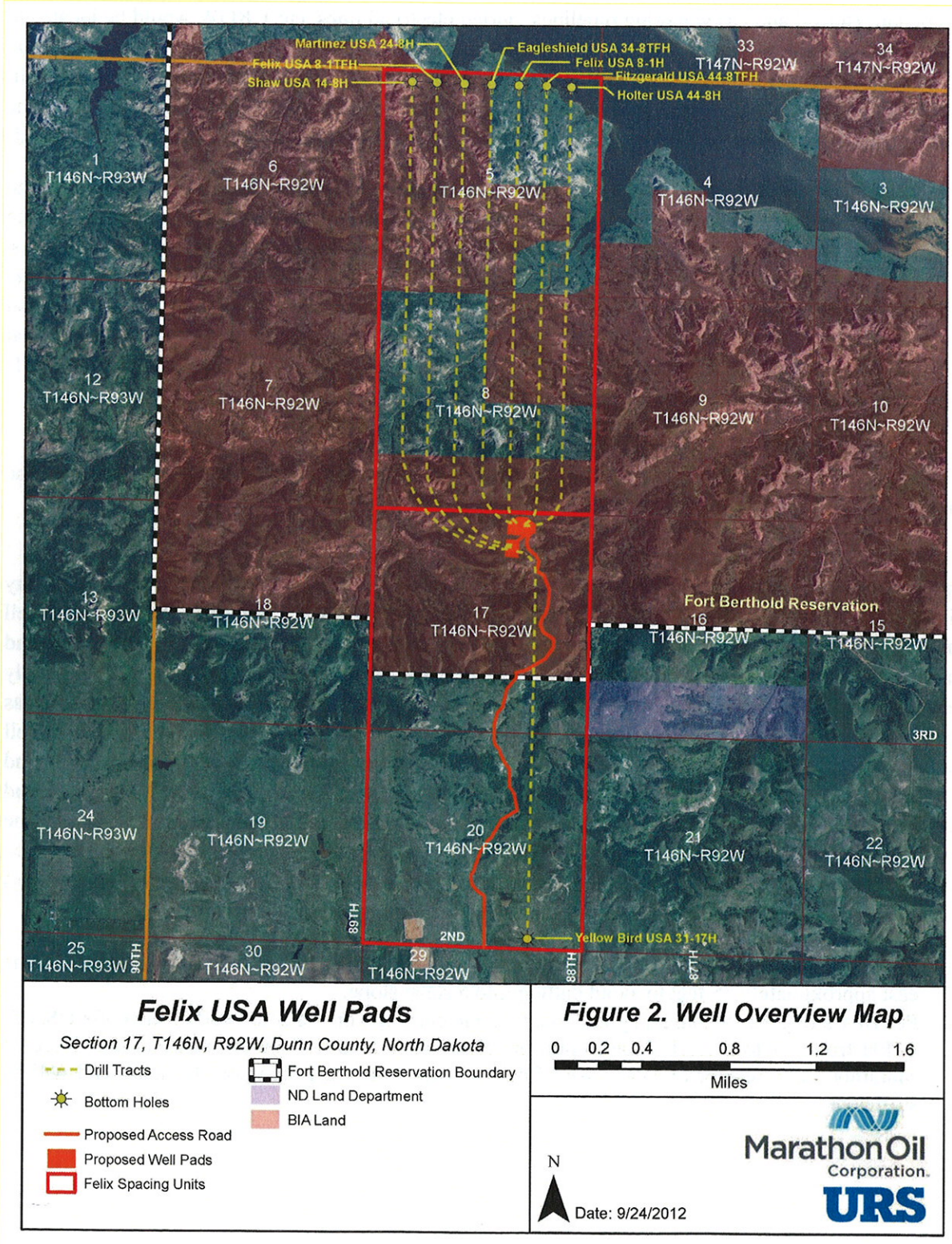


Figure 2. Well Overview Map

The sloping and access road adjustments were incorporated into the finalized design, and the BIA gathered site-specific information necessary to develop mitigation measures and best management practices (BMPs) to be incorporated in the final application for permit to drill (APD). Those present at the EA on-site assessment agreed that the pad locations are positioned in an area that would minimize environmental impacts, fit the landscape, and maintain reclamation potential, while maximizing development of the spacing units. In addition, Marathon has cooperatively developed environmental commitments with BIA that will further minimize harm to the environment.

2.3.1.2 Access Road and Utility Corridor

The well pads have been positioned to utilize existing roadways and two-track trails for access to the extent possible. A new access road (approximately 11,815 feet in length) will be constructed to provide access to the Felix USA well pads. The access road would extend north from the existing 2nd Street roadway on private surface for approximately 7,345 feet, where it would then enter the FBIR, extending an additional 4,470 feet to the proposed Felix USA well pads. This access road corridor (from 2nd Street to the SW ¼ NE ¼ of Section 20, Township 146 North, Range 92 West) will also be used to access Marathon's proposed Point USA well pad. The running surface of the access road would be surfaced with crushed gravel, and erosion control measures, including straw waddles and silt fences, would be installed within drainages and along steep slopes. A previously constructed Marathon road is illustrated in ***Figure 3. Previously developed Marathon access road.*** The outslope portions of the constructed access road would be re-seeded immediately upon completion of construction (using a BIA approved seed mix) to minimize erosion and reduce access road related disturbance. Care would be taken during road construction to avoid disturbing or disrupting existing subsurface utilities. Access road construction will follow road design standards outlined in the BLM's Gold Book. A diagram showing typical road cross sections is provided in ***Figure 4. Typical road cross sections.*** The access road would be located within the 130 foot-wide utility corridor ROW for the Felix USA well pads. This proposed ROW would consist of a 24 foot wide roadway and an 80 foot roadway disturbance area on BIA portions of the roadway (due to borrow ditches and construction slopes). Marathon also plans to locate electric and fiber optic utility lines, and oil, gas and produced water pipelines within the utility corridor ROW. The ROW will also allow for adequate space for snow removal and storage activities. Signed agreements would be in place allowing road and utility construction across affected private and allotted land surfaces, and any applicable approach permits and/or easements would be obtained prior to any construction activities.

Should pipeline facilities be constructed, Marathon will choose pipeline contractors to provide pipeline services for oil, gas and produced water. The pipelines would require approval for the associated ROW acquisition consisting of 50 feet of permanent ROW and 50 feet of temporary ROW for construction. Installation of the pipelines may require clearing and grading within the entire 130 foot ROW along the entire utility corridor.

Every effort would be made to minimize surface disturbance during the construction process. Trenches would be excavated to a depth sufficient to maintain a minimum of 48 inches of ground coverage over the pipelines. Other utilities, including phone and water pipelines, may be present in the immediate area, and the appropriate utility providers would be coordinated with. Topsoil would be separated and stockpiled along either side of any disturbed cross section. If construction activities take place near the end of construction season, topsoil would only be removed far enough in advance that the pipelines could be installed and the site re-graded prior to the end of the construction season. In addition, Marathon's

pipeline contractors would also install straw bales on steep slopes to provide erosion breaks. The use of pasture by livestock would continue during construction, and temporary fencing or cattle guards would be installed, as needed, within Marathon's approved ROW.

As current estimates expect the Bakken field to remain active for 30 to 40 years, it is important that pipeline systems are designed to perform for this period of time. Pipelines, if designed effectively and are properly maintained, may have an indefinite life expectancy. The natural gas pipeline utilized by Marathon would be composed of a high-density polyethylene with a design life extending well beyond 40 years.

The pipeline utilized by Marathon's oil and produced water pipeline contractor would likely be composed of steel. To ensure their long-term viability, all steel pipelines would be coated with 14 to 16 mils of fusion bonded epoxy coating, which would help protect the pipelines against corrosive elements in the soil. The coating would be inspected thoroughly at the time of installation, both visually and by electronic testing. Marathon's pipeline contractor would also utilize specialty coatings that are applicable for underground fittings, bore crossings, etc., to provide additional levels of protection. Velocities and pressure drops for the pipeline system would be carefully evaluated and lines sized to prevent erosion velocity. Additionally, lines would be designed to be cleaned and inspected with specialized tools (e.g., cleaning pigs and smart pigs) for assessing pipeline conditions and integrity.

All pipeline installations would be monitored by an inspection/construction management team as well as independent third party contract experts. Construction specifications would require contractors to allow for inspection, and no pipeline would be laid and backfilled without appropriate approvals.

Marathon's oil and produced water pipeline contractor would perform hydrotesting on all pipelines at the time of installation to assure no possibility of leakage. Following design and installation, Marathon's contractor would immediately conduct a cathodic survey utilizing test stations, rectifier pads and other means designed by cathodic protection specialists.

Marathon's natural gas pipeline contractor would also pressure test their pipeline to 1¼ times the actual maximum pressure for the proposed line. This series of pressure tests would occur for eight straight hours and would be documented for each segment.

Marathon will ensure that their pipeline contractors will limit all construction activities within the approved ROW. Further, Marathon's pipeline contractor will be required to comply with all commitments and procedures set forth in this EA, or additional NEPA analysis and approval would be required.

Marathon anticipates completing access road construction outside of the migratory bird nesting season (February 1 through July 15) which will avoid impacts to migratory birds during the breeding/nesting season. In the event that construction will need to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests will be conducted by a qualified biologist within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to the United States Fish and Wildlife Service (USFWS) and BIA.

Figure 3. Previously developed Marathon access road (URS, 2012)

2.3.1.3 Well Pads

The proposed Felix USA well pads would consist of a leveled area surfaced with several inches of gravel or crushed scoria. The pads would be used for the drilling rig and related equipment, as well as an excavated, reinforced lined pit (minimum thickness of 20 mil) to store drill cuttings. Each drill cuttings pit would be reclaimed to BLM and North Dakota Industrial Commission (NDIC) standards and timeframes immediately upon finishing well completion operations. Each drill cuttings pit would also be bermed to prevent surface water from entering the pit. The level well pads, plus cut and fill slope areas, required for drilling and completing operations (including drill cuttings pit for drill cuttings) would be approximately 10.79 acres (including both tiered Felix USA pads). Cut and fill slopes on the edge of the well pads would be 2:1 where less than 8 feet and 3:1 where 8 feet or greater. However, per BIA's request, Marathon agreed to adjust the cut slope on the south end of the Felix USA 8-1TFH pad from 2:1 to a 1.5:1 slope to pull the disturbance area in from an adjacent clay butte. If Marathon only develops a single well from the pad, then a 2:1 slope on the south end will be sufficient. The cuttings pit would be fenced and covered with netting to protect wildlife from hazardous areas. Livestock were present in the area during several of the site visits; therefore, the well pads would be fenced per the design guidelines in the BLM's Gold Book. The fence would remain in place until pit reclamation begins. The approximate acreage inside the fenced in area for both well pads is 14.00 acres.

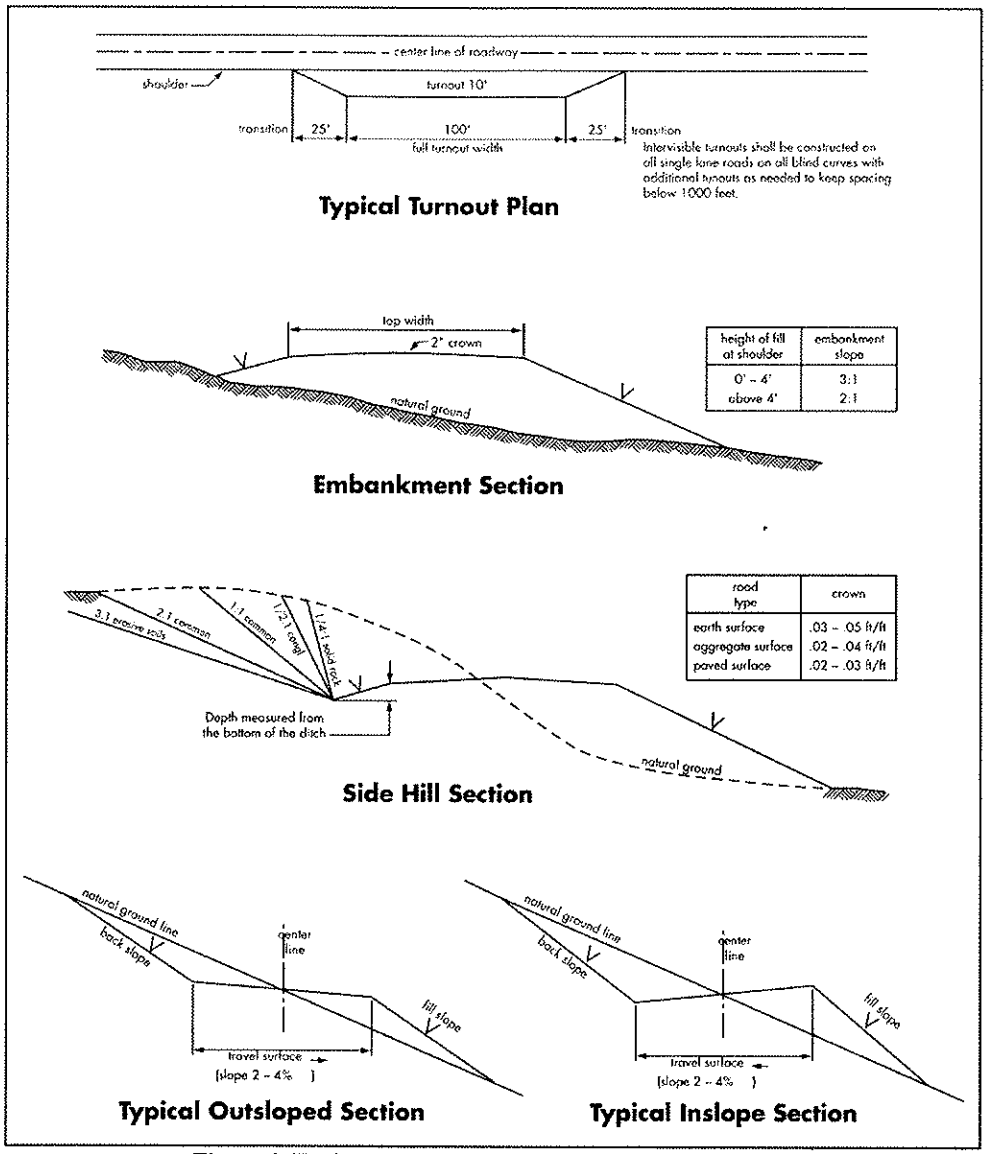


Figure 4. Typical road cross sections (BLM & USFS, 2007)

The well pad areas would be cleared of vegetation, stripped of topsoil, and graded to specifications in the APD submitted to the BLM and would comply with the standards and guidelines prescribed in the BLM's Gold Book and any requirements set by the BIA. Topsoil would be segregated and stored separately from subsurface materials to avoid mixing during construction, storage, and interim reclamation. Any woody vegetation cleared on site would be chipped and mixed in with the topsoil stockpiles. The topsoil stockpiles would also be stabilized until disturbed areas are reclaimed and re-vegetated. Marathon plans to place the topsoil stockpiles along the western edge of both well pads. Excavated subsoils would be used in pad construction. The finished well pads would be graded to ensure water drains away from the well site. Erosion control at the site would be maintained through the use of BMPs, which for the Felix USA site would include bio-logs and straw waddles placed outside of the pad and within the wooded draw located southeast of the Felix USA 8-1H well pad to act as additional containment against spills. Immediate re-seeding and/or the utilization of erosion blankets on cut and fill slopes and other disturbed

areas would also be applied to prevent unnecessary erosion. The cut side of the well pad would be bermed to prevent run-on. Pit and soil stockpiles will also be used to divert drainage outside of the fill slopes. Marathon will also build a berm around the entirety of each pad to prevent runoff. Excess embankment and topsoil stockpiles will also be placed on and around the pad in such a manner that will provide additional protection from migration of fluids, should they escape the pad. After well completion, the areas of well pad disturbance would be reduced if feasible, and the above mentioned BMPs utilized per consultation with BIA and BLM to ensure proper drainage and erosions controls are in place. The alteration of ephemeral wooded drainages surrounding the well pads would be avoided. A previously constructed Marathon well pad is illustrated in ***Figure 5. Typical Marathon well pad configuration.***

Marathon anticipates completing well pad construction outside the migratory bird nesting season (February 1 through July 15) which will avoid impacts to migratory birds during the breeding/nesting season. In the event that construction will need to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests will be conducted by a qualified biologist within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to the USFWS and BIA.

Figure 5. Typical Marathon well pad configuration (URS, 2012)

2.3.1.4 Drilling

Upon APD approval, BLM would approve construction. Following the access road construction and well pad preparation, a drilling rig would be rigged up at the well site. The time required for rigging up, drilling each well, and rigging down the well is anticipated to be approximately 60 days. During this phase, vehicles and equipment would access the site several times a day.

Initial drilling would be vertical to a depth of approximately 10,200 feet, at which point it would angle to become horizontal at 11,200 feet. Drilling would then be followed by lateral reaches into the Middle Bakken and Upper Three Forks Formations. This horizontal drilling technique would minimize surface disturbance.

For the first 2,000 feet drilled at each well (commonly referred to as a "surface hole"), a fresh water based mud system with non-hazardous additives would be used to minimize contaminant concerns. Water would be obtained from a commercial source for this drilling stage. About 8 gallons of water would be used per foot of hole drilled, for a total of about 40,000 gallons (20,000 gallons in the hole and 20,000 gallons as working volume at the surface). After setting and cementing the surface casing, an oil-based mud system consisting of approximately 80% diesel fuel and 20% saltwater would be used to drill the remainder of the vertical hole and curve. Once the seven-inch production casing is set and cemented through the curve (into the lateral), a saltwater based drilling mud would be utilized for the horizontal portion of the wellbore.

A semi-closed mud/cuttings system with an on-site cuttings pit will be utilized. As part of this, Marathon would implement a closed circulation drilling mud system, whereby drilling fluid is circulated from the well into steel mud tanks positioned on the well pad. The drill cuttings are then separated from the drilling fluid. The cuttings would then be stabilized using an approved Class C fly ash or other inert stabilizing material, and placed in a cuttings pit located on the well pad. Any minimal free fluid left in the cuttings pit would be removed and disposed of in accordance with BLM and NDIC regulations. The cuttings pit would be lined to prevent seepage and contamination of the adjacent and underlying soil. Prior to its use, the pit would be fenced on the non-working sides. The access side would be fenced and netted immediately following drilling and completion operations in order to prevent wildlife and livestock from accessing the pit. In accordance with NDIC and BLM regulations and guidelines, drill cuttings would be stabilized using an approved Class C fly ash or other inert stabilizing material. NDIC regulations also stipulate that cuttings pits must be reclaimed within 30 days of drilling unless extended by the Director. Marathon plans to close and reclaim the cuttings pit within three days of shutting down the drill rig. If this time is to exceed 30 days, Marathon will coordinate with NDIC, BLM and BIA for an extension. The reclaimed pit will be covered with at least 4 feet of backfill and surface sloped, when practicable, to promote surface drainage away from the reclaimed area.

2.3.1.5 Casing and Cementing

Casing and cementing operations would be conducted in full compliance with Onshore Oil and Gas Order No. 2 (43 CFR 3160). Casing and cementing methods would be used to isolate all near-surface aquifers and hydrocarbon zones encountered during drilling.

2.3.1.6 Completion and Evaluation

Once each well is drilled and cased, approximately 30 additional days would be required to complete and evaluate it. Completion and evaluation activities include cleaning out the wellbore, pressure testing the casing, perforating and fracturing to stimulate the horizontal portion of the well, and running production tubing for potential future commercial production. Fluids utilized in the completion process would be captured in tanks and would be disposed of in accordance with BLM and NDIC rules and regulations. Once the wells are completed, site activity and vehicle access would be reduced significantly. In addition, the well pad would be downsized if feasible upon well completion per recommendations and consultation

with the BIA and BLM. If any of the wells are determined to be successful based on the evaluation, tank trucks (and, when available, natural gas gathering lines) would transport the product to market.

2.3.1.7 Commercial Production

If commercially recoverable oil and gas resources are found at any of the proposed well sites, the site would become established as a production facility. Production equipment, including well pumping units, vertical heater/treaters, storage tanks (typically 400-barrel steel oil tanks and 400-barrel fiberglass saltwater tanks) and a natural gas flare system would be installed on the well pad. The on-site storage tanks and heater/treaters would be surrounded by an impermeable berm that would act as secondary containment to guard against possible spills. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. As an additional containment measure, Marathon will berm the entire perimeter of each well pad. Marathon will also place excess embankment and topsoil stockpiles on and around the pad in such a manner that will provide additional protection from migration of fluids, should they escape the pad. Other BMPs (including bio-logs and straw waddles placed outside of each pad and within the drainage located southeast of the Felix USA 8-1H well pad) will be utilized to reduce wind and water erosion of soil resources, as well as the implementation of a semi-closed mud/cuttings system with an on-site cuttings pit during drilling. All permanent above ground production facilities would be painted to blend into the surrounding landscape, as determined by the BIA, based on standard colors recommended by the BLM.

Initially, oil from the wells would be collected on-site in the storage tanks, where it would then be transported via truck to an existing oil terminal to be sold. Marathon plans to eventually utilize third party infrastructure (including oil and gas pipelines) when available to transport product from the sites. Produced water would also be captured in storage tanks and periodically trucked to an approved disposal site. The frequency of trucking activities for both oil resources and produced water would be dependent upon volumes and rates of production. It is expected that oil would be transported by truck utilizing Marathon's lease roads and Dunn County public roads, to Tesoro's pipeline system located approximately 9.5 miles west-southwest of the Felix USA site. Produced water will be hauled to Marathon's Appledoorn Saltwater Disposal #1 facility, which is located approximately 15 miles southwest of the Felix USA site. All haul routes used would be either private roads or roads that are approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. All associated applicable permits would be obtained and restrictions complied with. Should regional oil, gas, and/or saltwater pipelines be installed, every attempt to tie production facilities at these sites to these pipelines would be made, thereby minimizing truck traffic. Any future oil, gas, or saltwater transportation pipelines would be constructed within the existing and/or proposed ROW or additional NEPA analysis and approval from the BIA would be undertaken.

When the proposed wells cease to flow naturally, a pump jack would be installed. After production ceases, the wells would be plugged and abandoned, and the land would be fully reclaimed in accordance with BIA, BLM and NDIC requirements. Marathon would mitigate the effects of the well pads by incorporating applicable conditions, mitigation measures, and BMPs from the BLM's regulations, BLM's Gold Book, and applicable BLM Onshore Oil and Gas Orders, including Numbers 1, 2, and 7.

2.3.1.8 Temporary Field Camps

Temporary, self-contained trailers may be used to house key personnel within the project site during drilling operations. Long-term residential housing units are not proposed. Sewage would be collected in

standard portable chemical toilets or service trailers on-site and then transported off-site to a State-approved wastewater treatment facility. Other solid waste would be collected in enclosed containers and disposed of at a State-approved facility.

2.3.1.9 Reclamation

Interim Reclamation

Reclamation would continue throughout the lifecycle of the project and would include redistribution of the topsoil, and contouring and re-seeding of native vegetation. BIA requests that initial reclamation occurs within six months upon completion of construction, if environmentally feasible. Marathon proposes to initiate interim reclamation within six months of completion of the first well, or they will contact BIA and BLM for an extension in order to evaluate initial production and determine when the additional wells will be drilled. The drill cuttings would be dried during drilling operations and placed into a cuttings pit. Additional treatment of the cuttings, including stabilization with an approved Class C fly ash or other inert material, would be completed, and then the pit would be backfilled and buried as soon as possible upon well completion (adhering to BLM and NDIC standards and timeframes). Other interim reclamation measures to be implemented upon well completion include reduction of cut and fill slopes, redistribution of stockpiled topsoil, re-contouring, and re-seeding of the disturbed areas. If commercial production equipment is installed at either of the Felix USA pad sites, the well site would be reduced in size (if feasible) to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations, with the remainder of the well pad reclaimed. Stockpiled topsoil would be redistributed and re-seeded as recommended by the BIA. Marathon would control noxious weeds prior to and after construction (if present) through approved chemical or mechanical methods. In addition, the ROW would be monitored for erosion or other surface issues. In areas where problems are found to occur, reclamation efforts would continue until the BIA determines that the ROW is successfully reclaimed.

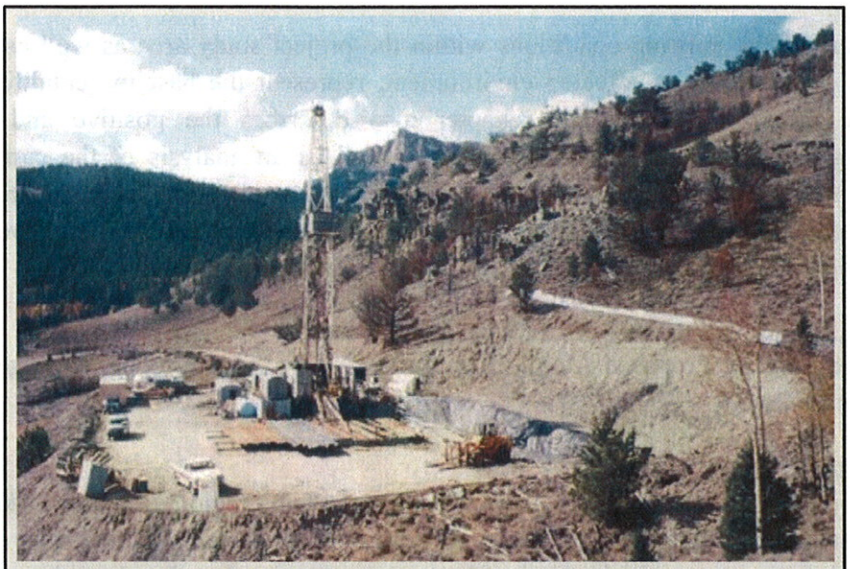
Final Reclamation

If commercial development is not realized from any of the proposed wells, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. As part of the final reclamation process, all well facilities would be removed, the well bores would be plugged with cement, and dry hole markers would be set in accordance with NDIC and BLM requirements. The access road and well pads would be leveled or backfilled, scarified, and re-contoured to match the topography of the original landscape, and re-seeded with a native grass seed mixture that is consistent with surrounding native species to ensure a healthy and diverse vegetative community that is free of noxious weeds. Erosion control measures will be installed in consultation with the BIA and BLM to maintain soil stability during final reclamation activities. Maintenance of the grass seeding would continue until such time that the productivity of the stand is consistent with surrounding undisturbed vegetation and is free of noxious weeds. An exception to these reclamation measures may occur if the BIA approves assignment of the access road either to the BIA roads inventory or to concurring surface allottees. An example of a successful well pad reclamation project is illustrated in ***Figure 6. BLM Gold Book example of successful well pad reclamation.***

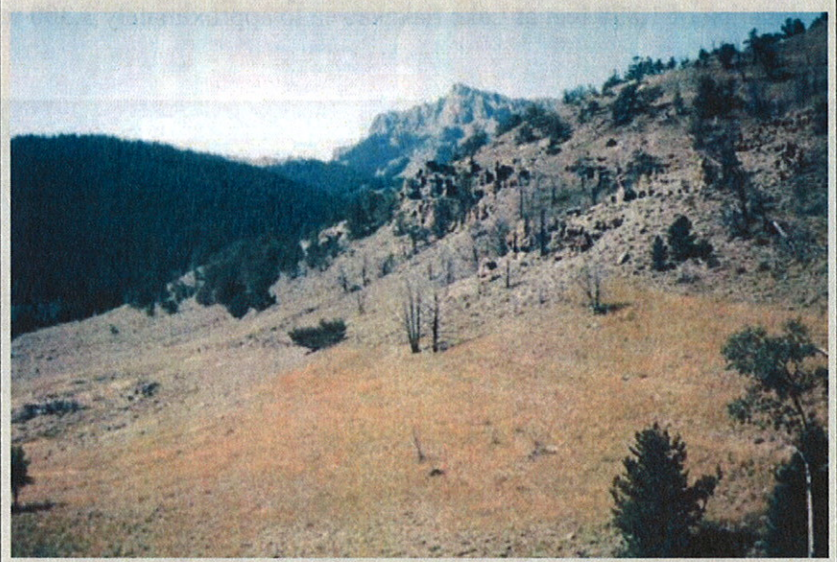
2.3.2 Potential for Future Development

Development beyond the Felix USA well pads discussed in this document is not included with this proposal. Further development would be subject to applicable regulations, including 43 CFR Part 3160,

and the BLM's Onshore Oil and Gas Order No. 1 – Approval of Operations on Onshore Federal and Indian Oil and Gas Leases, and would be subject to review under NEPA.



The well pad and access road are constructed to the minimum size necessary to safely conduct drilling and completion operations.



The well pad and access road have been recontoured back to the original contour, the topsoil respread, and the site revegetated.

Figure 6. BLM Gold Book example of successful well pad reclamation (BLM & USFS, 2007)

CHAPTER 3 – DESCRIPTION OF THE AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

3.1 Introduction

This chapter describes the existing conditions within the project study area as well as the surrounding area. The existing conditions, or affected environment, represent the baseline conditions that may be impacted by the proposed action. This chapter also describes the positive and negative direct environmental impacts of the project alternatives, as well as an analysis of the cumulative impacts. Indirect impacts are discussed in impact categories where relevant. Information regarding the existing environment, potential impacts to the environment resulting from the proposed alternative, and avoidance, minimization, and/or mitigation measures for adverse impacts is also included.

3.2 Topography, Geological Setting, Land Use, and Climate

The physical setting for the Proposed Action is characterized by the site topography, geological setting, land use, and the climate.

Topography

The proposed project is situated in the Northwestern Great Plains region of North Dakota. This area is characterized by semiarid rolling plains of shale, siltstone, and sandstone punctuated by occasional buttes and badlands. Native grasses persist in areas of broken topography, but they have largely been replaced throughout the region by crops well suited to erratic precipitation patterns. Elevations in the region range from a normal pool elevation of 1,838 feet at Lake Sakakawea to approximately 3,300 feet in the Killdeer Mountains.

Figure 7. Site overview of Felix USA well pad area, view north

The southern portion of the Felix USA access road begins in the Missouri Plateau ecoregion. This is an area that was largely unaffected by glaciation and retains its original soils and complex stream drainage pattern. Crops such as spring wheat, alfalfa, oats and barley, as well as short grass prairie suitable for cattle grazing dominate the landscape. Extending north, the access road enters into the Little Missouri Badlands ecoregion. This highly eroded landscape is characterized by clay buttes and ephemeral, wooded drainages that cut the landscape as they descend to the Little Missouri River. Vegetation is sparse and slumping is prevalent in this landscape. Cattle grazing is the dominant land use. The proposed well pads are situated on an upland bluff that descends gradually to the lowlands of the Little Missouri Badlands. The Felix USA pads have been tiered to preserve the topography of the landscape. Please refer to ***Figure 7. Site overview of Felix USA well pad area.***

Geological Setting

The proposed well pads and access road are situated geologically within the Williston Basin, where the shallow stratigraphy consists of sandstones, silts and shales dating to the Tertiary Period (65 to 2 million years ago), including the Sentinel Butte and Golden Valley Formations (NDGS, 1997). Please refer to ***Figure 8. Surface Geology***. The underlying Bakken Formation and Three Forks Formation, which are targeted by the proposed project, are well-known sources of hydrocarbons. Although earlier oil and gas exploration activity within the FBIR was limited and commercially unproductive, recent advances in drilling technologies, including horizontal drilling techniques, now make accessing oil in the Bakken Formation and Three Forks Formation feasible.

Land Use

The FBIR is divided by Lake Sakakawea. Areas west and south of the lake generally consist of grasslands, buttes, and badlands. Land north and east of Lake Sakakawea are better suited for agriculture. Until recently, the activities that have had the largest influence on the landscape have been agriculture, recreation, and livestock grazing. Oil and gas development and the associated land uses (roads, well pads, utilities, commercial/industrial development, etc.) have increased significantly on the FBIR in the last several years. The proposed project area within the FBIR is a predominately rural and relatively remote. According to National Land Cover Data (NLCD), land within the proposed project area is predominantly grassland (90%). Small amounts of woodland (8%) and shrub land (2%) also occur (USDA-NRCS, 2006). Please refer to ***Figure 9. Land Use***.

Climate

According to High Plains Regional Climate Center data collected at the Dunn Center weather station, temperatures in excess of 80 degrees Fahrenheit are common in summer months. The area receives approximately 16.36 inches of rain annually, predominantly during the spring and summer months. Winters in this region are cold, with temperatures often falling near zero degrees Fahrenheit. Snow generally remains on the ground from November to March (HPRCC, 2012).

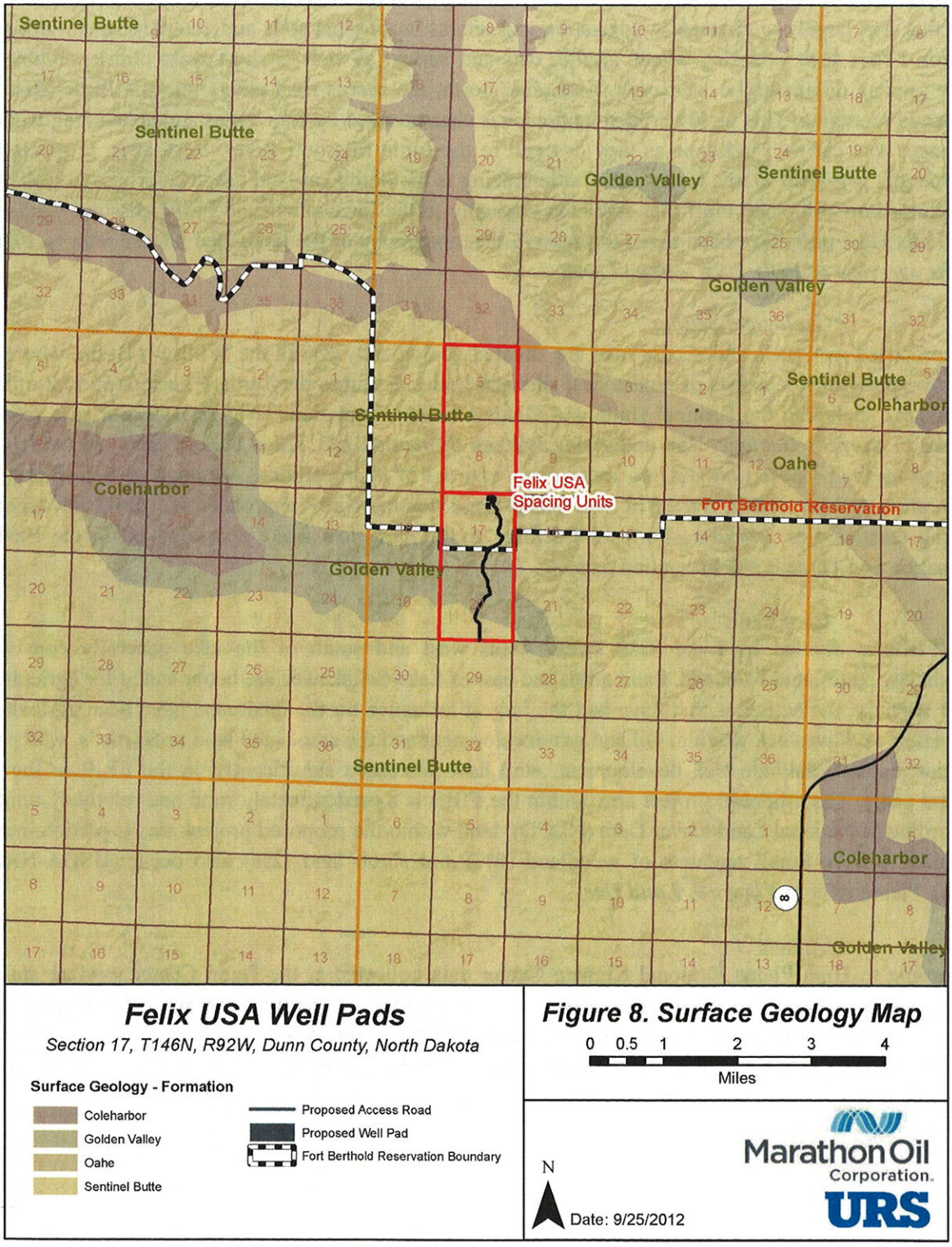


Figure 8. Surface Geology Map

3.2.1 Topography, Geological Setting, Land Use, and Climate Impacts/Mitigation

No Action Alternative – The No Action Alternative would have no impacts on topography, the geological setting, land use, or climatic conditions.

Proposed Action – The proposed action would result in temporary impacts to topography as the result of construction of the well pads and access road. Prior to construction, the impacted areas would be cleared of vegetation, stripped of topsoil and graded to accommodate construction of the proposed well pads and access road. The proposed action would also result in the conversion of land from present use to part of an oil and gas network. Of this, 14.0 acres would be a result of the well pad construction and 13.4 acres would be from access road construction on BIA lands. Additional land outside of the FBIR would also be converted from its current use for access road and utility construction. Marathon is working with private landowners to secure the necessary ROW and/or easements to construct the access road and utilities outside the boundaries of the FBIR.

Access road and pad design efforts have been made by Marathon to avoid overly steep slopes and clay buttes. The Felix USA pads will utilize a tiered design to preserve the topography of the landscape. Further, Marathon will adjust the cut slope on the south end of the Felix USA 8-1TFH pad from 2:1 to a 1.5:1 slope to pull the disturbance area in from the adjacent clay butte. Additionally, the well pads have been situated to minimize the amount of cut and fill required for construction. Further, interim reclamation measures to be implemented upon well completion include reduction of cut and fill slopes, redistribution of stockpiled topsoil, re-contouring, and re-seeding of the disturbed areas. Upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. As part of the final reclamation process, all well facilities would be removed, the well bores would be plugged with cement, and dry hole markers would be set in accordance with NDIC and BLM requirements. The access road and well pads would be leveled or backfilled, scarified, and re-contoured to match the topography of the original landscape, and re-seeded with a native grass seed mixture that is consistent with surrounding native species to ensure a healthy and diverse vegetative community.

Mineral resources would be impacted through the development of oil and gas resources within the spacing units, as is the nature of this project. Impacts to the climate, geologic setting, and paleontological resources are not anticipated.

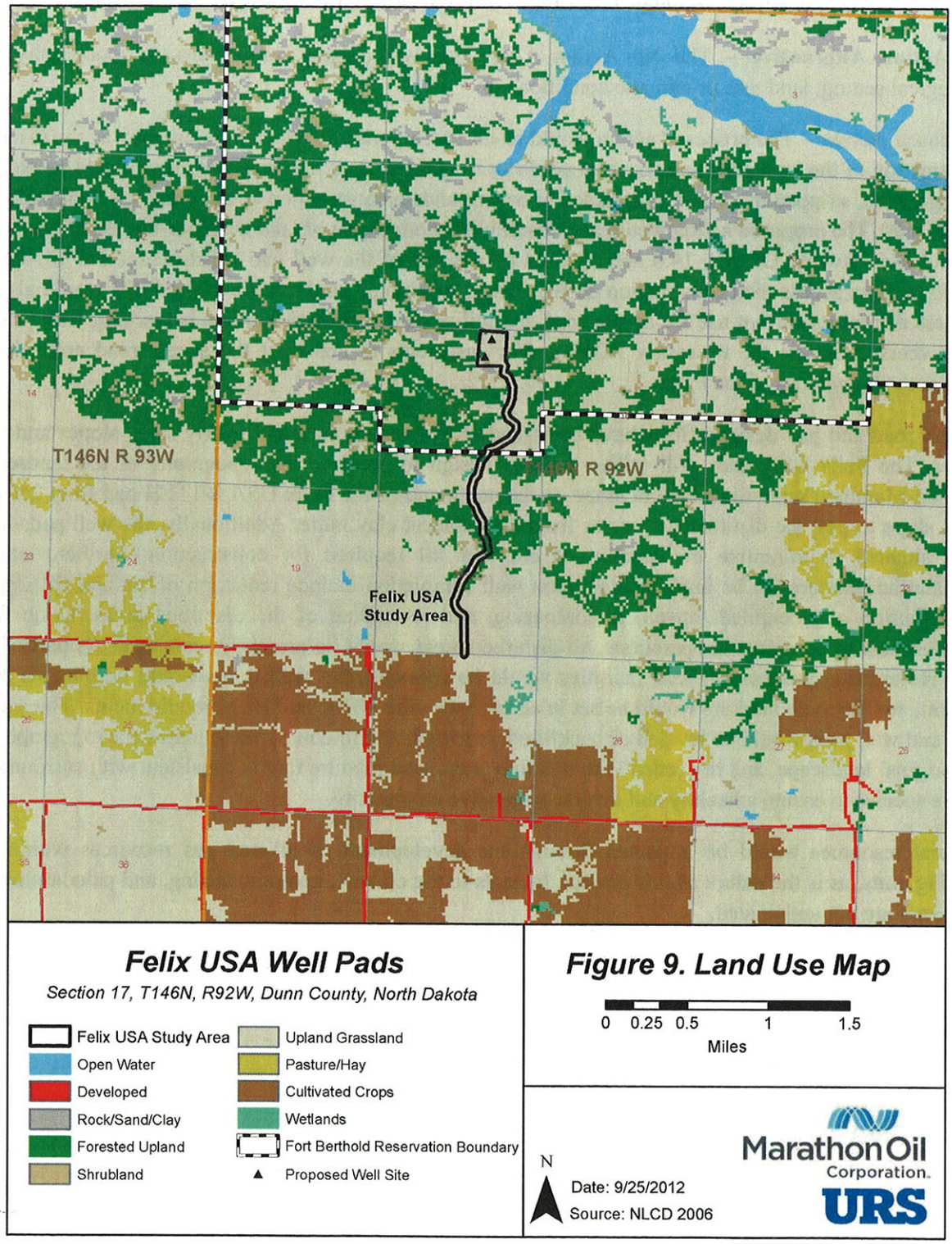


Figure 9. Land Use

3.3 Air Quality

Air Quality Standards for Criteria Pollutants

The federal Clean Air Act (CAA) (USC § 7401-7671, as amended in 1990) established national ambient air quality standards (NAAQS) for criteria pollutants to protect public health and welfare. It also sets standards for other compounds that can cause cancer, regulated emissions that cause acid rain, and required federal permits for large sources. National ambient air quality standards have been established for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead (Pb) (EPA 2010a). Standards for each pollutant meet specific public health and welfare criteria; thus they are referred to as criteria pollutants.

The North Dakota Department of Health (NDDH) operates a network of Ambient Air Quality Monitoring (AAQM) stations. The nearest AAQM station is located in Dunn Center, North Dakota (Air Quality Station #38025003), approximately 12.5 miles southwest of the proposed Felix USA project area. In addition, the NDDH has established state air quality standards. State standards must be as stringent as (but may be more stringent than) federal standards. The federal and state air quality standards for these pollutants are summarized in ***Table 2. Federal and State Air Quality Standards and Maximum Reported Data for Dunn Center Monitoring Station, 2009-2010 (NDDH 2010, 2009).*** Criteria pollutants measured at the Dunn Center monitoring station include SO_2, PM_{10}, $PM_{2.5}$, NO_2, and O_3. Lead, CO, and H_2S are not monitored at this station. The maximum recorded values for each pollutant are listed below for 2009 and 2010.

North Dakota was one of thirteen states in 2010 (as well as 2009) that met standards for all criteria pollutants. The state also met standards for fine particulates and the eight-hour ozone standards established by the EPA (NDDH, 2010).

In addition, the FBIR complies with the North Dakota National Ambient Air Quality Standards and visibility protection. The CAA affords additional air quality protection near Class I areas. Class I areas include national parks greater than 6,000 acres in size, national monuments, national seashores, and federally designated wilderness areas larger than 5,000 acres designated prior to 1977. There are no Federal Class I areas within the project area. The Theodore Roosevelt National Park is the nearest Class I area, located approximately 39.4 miles west of the proposed Felix USA project area.

Table 2. Federal and State Air Quality Standards and Maximum Reported Data for Dunn Center Monitoring Station, 2009-2010 (NDDG, 2010, 2009)

Pollutant	Averaging Period	EPA Primary Standard (NAAQS)	NDDH Air Quality Standard (AAQS)	Dunn Center Maximum Reported Data	
				2010	2009
SO_2 in parts per million of air (ppm)	3-hour	-	0.273 (1-Hour)	0.0163	0.013
	24-Hour	0.14	0.099	0.0037	0.006
	Annual Mean	0.03	0.023	.00071	0.0005
PM_{10} in micrograms per cubic meter of air ($\mu g/m^3$)	24-Hour	150	150	29	54
	Annual Mean	50	50	9.7	11.3
$PM_{2.5}$ ($\mu g/m^3$)	24-Hour	35	-	13	15
	Weighted Annual Mean	15	-	3.87	3.4
NO_2 (ppm)	Annual Mean	0.053	0.053	0.00144	0.0015
CO (ppm)	1-Hour	35	35	-	-
	8-Hour	9	9	-	-
Pb ($\mu g/m^3$)	3-Month	1.5	1.5	-	-
O_3 (ppm)	1-Hour	-	0.12	0.068	0.067
	8-Hour	0.075	-	0.066	0.057
Hydrogen Sulfide (H_2S) (ppm)	Instantaneous	-	10	-	-
	1-Hour	-	0.20	-	-
	24-Hour	-	0.10	-	-
	3-Month	-	0.02	-	-

Hazardous Air Pollutants

Hazardous air pollutants (HAPs) are a class of compounds that are known to cause mutation, cancer, or other serious health problems. HAPs are regulated separately from criteria air pollutants and are usually a localized concern near an emission source. The EPA and the NDDH recognizes several hundred HAPs. Health effects of HAPs may occur at exceptionally low levels, as a result it is extremely difficult to identify an exposure limit that may produce adverse health effects. Major sources of toxic air contaminants include various industrial processes, commercial operations, wood smoke, and motor vehicle exhaust. There are not ambient air quality standards for HAPs. Examples of HAPs found in gases released by oil field development and operations include benzene, toluene, xylene, and formaldehyde (BLM, 2009). HAP emissions are evaluated based on the degree of exposure that can cause risk of premature mortality, most often associated with cancer.

The NDDH typically reviews projects and may require an applicant to prepare a risk assessment (or they may require the state engineer to conduct the assessment). For new sources emitting HAPs with known negative health effects, an applicant must demonstrate that the combined effect of the new HAP emission does not result in a maximum individual cancer risk greater than one in one hundred thousand.

Typical Air Emissions from Oil and Gas Development

Emissions associated with oil field development, as reported by EPA Emission Inventory documents (EPA, 1999), encompass three primary areas: combustion, fugitive, and vented. Typical processes that occur during oil and gas exploration and production include the following:

- Combustion emissions include SO_2, volatile organic compounds (VOCs), greenhouse gases (GHGs), and HAPs. Sources include engine exhaust, dehydrators, and flaring (EPA, 1999).
- Fugitive Emissions include criteria pollutants, H_2S, VOCs, HAPs, and GHGs. Sources of fugitive gases include mechanical leaks from well field equipment such as valves, flanges, and connectors that may occur in heater/treaters, separators, pipelines, wellheads, and pump stations. Other sources of fugitive emissions include evaporation from ponds and pits, condensate tanks, and wind-blown dust (EPA, 1999).
- Vented emissions include GHGs, VOCs, and HAPs. Primary sources include emergency pressure relief valves and dehydrator vents. (EPA, 1999).

3.3.1 Air Quality Impacts/Mitigation

No Action Alternative – The No Action Alternative would have no impacts on air quality.

Proposed Action – The FBIR complies with North Dakota National Ambient Air Quality Standards and visibility protection. In addition, the Dunn Center AAQM Station reported air quality data well below the state and federal standards for both 2009 and 2010. The Proposed Action would not include any major sources of air pollutants. Construction activities (associated with well pad and access road development) would temporarily generate minor amounts of dust and gaseous emissions of PM, SO_2, NO_2, CO, VOCs, and HAPs. Emissions would be limited to the immediate project area and are not anticipated to cause or contribute to a violation of National Ambient Air Quality Standards. Marathon will implement measures to minimize fugitive dust. No detectable or long-term impacts to air quality or visibility are expected within the airsheds of the FBIR, State, or Theodore Roosevelt National Park. BMPs (associated with transportation, drilling, and vapor recovery) that would control emissions can be adopted throughout the well lifecycle. No mitigation or monitoring measures are recommended at this time.

In addition, On August 1, 2012 the EPA Administrator, Lisa Jackson, signed the approval and promulgation of the Federal Implementation Plan (FIP) for oil and gas well production facilities on the FBIR. The Reservation-specific FIP regulates emissions from oil and gas production facilities producing in the Bakken Pool that is constructed and operating on or after August 12, 2007.

Marathon will take actions to ensure compliance with the EPA FIP. This will include reducing the mass content of VOC emissions from natural gas during production and storage operations by at least 90.0 percent on the first date of production. Within 90 days of the first date of production, Marathon will route the natural gas from the production and storage operations through a flaring system capable of reducing the mass content of VOCs in the natural gas vented to the device by at least 98.0 percent.

3.4 Soils

The Natural Resource Conservation Service (NRCS) Soil Survey of Dunn County dates from 2006, with updated information available online through the NRCS Web Soil Survey. There are eight soil types identified within the Felix USA project impact area. Characteristics of these soils are identified in ***Table 3. Soils.***

Table 3. Soils

Map Unit Symbol	Soil Name	Percent Slope	Composition (in upper 60 inches)			Erosion Factor		Hydrologic Soil Group
			% sand	% silt	% clay	T	Kf	
3	Straw loam, channeled	0 to 2	-	-	-	5	.32	-
9E	Cabba loam	15 to 45	40.5	39.5	20.0	2	.32	D
21C	Cherry silty clay loam	6 to 9	7.9	61.7	30.3	5	.37	B
81C	Vebar-Parshall fine sandy loams	6 to 9	75.4	14.8	9.8	3	.49	B
88C	Williams loam	6 to 9	34.8	35.2	30.0	5	.37	B
93E	Zahl-Williams loams	15 to 25	35.0	34.3	30.6	5	.37	B
101B	Amor-Shambo loams	3 to 6	39.9	38.5	21.6	3	.24	B
211F	Badland-Cabba-Arikara complex	25 to 75	17.8	65.0	20.5	5	.43	D

Source: NRCS, 2006

The NRCS soil series present on the well pads and access road areas are illustrated in ***Figure 10. Soils Map***. Erosion factors indicate the susceptibility of a soil to sheet and rill erosion by water. All of the soils listed have moderate susceptibility to sheet and rill erosion. Additionally, all of the soils (with the exception of the Cabba loam) can tolerate high levels of erosion without loss of productivity. The soils listed with higher percent slopes, generally have characteristics that allow for lower infiltration and a high rate of runoff, whereas the soils with lower percent slops are prone to having higher rates of infiltration and low runoff. Both of the Felix USA well pads occur on the Badland-Cabba-Arikara complex soil type. The depth to the water table is generally recorded at greater than six feet for these soil types. None of the soils listed within the project impact area are susceptible to flooding or ponding.

3.4.1 Soil Impacts/Mitigation

No Action Alternative – The No Action Alternative would have no impact on soil resources.

Proposed Action – Construction activities associated with the proposed well pads and access road would result in soil disturbances, though impacts should be minimized through the utilization of site-specific BMPs (described below). Stockpile quantities for the locations were calculated using an assumed 8 inches of existing topsoil. A minimum of 11,657 cubic yards of topsoil would be stockpiled on-site for the construction of both Felix USA well pads (including topsoil used for berming).

Based on NRCS soil data and field samples, topsoil exists in excess of 8 inches at the Felix USA project site, yielding sufficient quantity of topsoil for construction and reclamation activities. The stockpiles would be positioned along the western edge of both well pads and would assist in diverting runoff away from the disturbed area, thus minimizing erosion, and to allow for interim reclamation soon after each well is put into production. Topsoil will be stockpiled evenly in suitable locations around the well pad and utilized to prevent run on.

Soil impacts would be localized, and BMPs (including bio-logs and straw waddles placed outside of each pad and within the drainage located southeast of the Felix USA 8-1H well pad) would be implemented to minimize these impacts. Construction of the well pads, access road, and associated facilities would cause surface disturbance and would result in the removal of vegetation from the soil surface. This sort of activity can damage soil crusts and destabilize the soil. As a result, the soil surface could become more prone to accelerated erosion by wind and water. Marathon plans to utilize BMPs at the project site to reduce these impacts. Specifically, Marathon will implement erosion and sediment control measures during and after construction, segregating topsoil from subsurface material for future reclamation, re-seeding of disturbed areas immediately after construction activities are completed, the use of construction equipment appropriately sized to the scope and scale of the project, ensuring the road gradient fits closely with the natural terrain, and maintaining proper drainage. According to discussions at the field on-site assessment and standard industry practices, BMPs identified in the BLM Gold Book shall be utilized to further minimize site erosion.

Soil compaction, caused by the use of heavy equipment, can also become an issue. When soil is compacted, it decreases permeability and increases surface runoff. This is especially evident in silt and clay soils. In addition, soils may be impacted by mixing of soil horizons. Soil compaction and mixing of soil horizons would be minimized by the previously discussed topsoil segregation.

Contamination of soils from various chemicals and other products used during oil development activities is not anticipated. In the event that such contamination may occur, the event shall be immediately reported to the BLM, the NDIC, and, where appropriate, the North Dakota Department of Health (NDDH). In addition, the procedures of the surface management agency shall be followed to contain spills and leaks. In general, the soil types within the project area are not expected to create unmanageable erosion issues or interfere with site reclamation. Through the implementation of BMPs and other minimization measures by the operator, it is anticipated that there will be no significant impacts to soil resources.

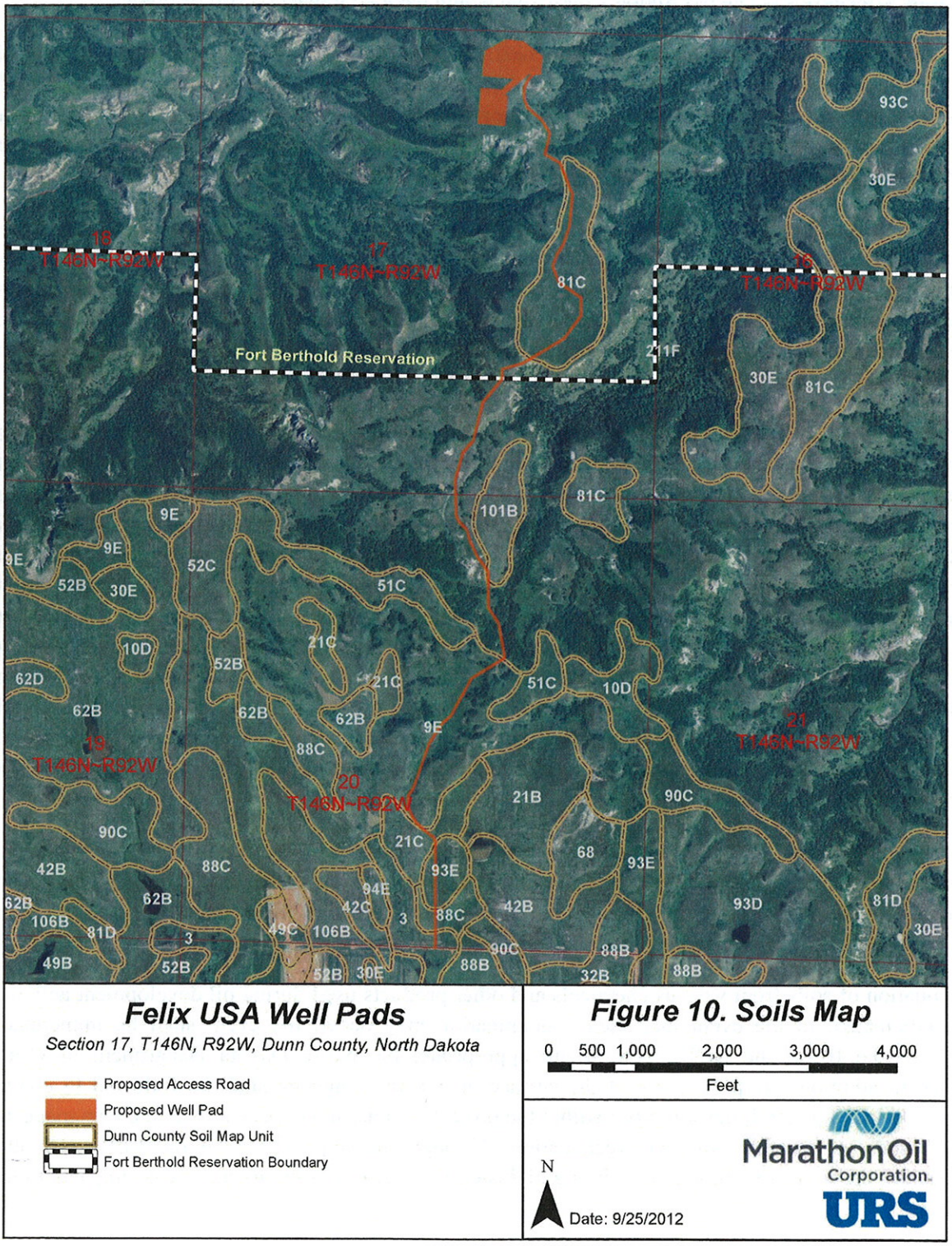


Figure 10. Soils Map

3.5 Wetlands

Wetlands are defined in both the 1977 Executive Order 11990, Protection of Wetlands, and in Section 404 of the Clean Water Act of 1986, as those areas that are inundated by surface or ground water with a frequency to support and, under normal circumstances, do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Three parameters that define a wetland, as outlined in the Federal Manual for Delineating Jurisdictional Wetlands (US Army Corps of Engineers, 1987), are hydric soils, hydrophytic vegetation, and hydrology. Wetlands are an important natural resource serving many functions, such as providing habitat for wildlife, storing floodwaters, recharging groundwater, and improving water quality through purification.

National Wetland Inventory (NWI) maps, maintained by the U.S. Fish and Wildlife Service (USFWS), were reviewed for the presence of wetlands within the project study area. No wetlands were identified within the project study area (according to NWI data) and no wetlands were observed within the project study area during any of the field visits. The nearest NWI wetland is located approximately 100 feet west of the Felix USA access road in the NE ¼ SE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M.

3.5.1 Wetland Impacts/Mitigation

No Action Alternative – The No Action Alternative would not impact wetlands.

Proposed Action – Marathon will take precautions to control well pad runoff by constructing and maintaining a berm around the perimeter of each well pad. Due to the absence of wetlands with the proposed project area, the Proposed Action would not impact wetlands.

3.6 Water Resources

This section identifies the existing water resources in the project area and the potential effects associated with the proposed project. Specifically, this section covers surface water and ground water resources and the potential short-term and long-term impacts associated with each alternative.

3.6.1 Surface Water

The surface water resources in the project area would be managed and protected according to the existing federal laws and policies regarding the use, storage, and disposal of the resource during the construction and ongoing operation of the project. Surface water resource use and protection is administered under the following federal laws:

- Clean Water Act of 1972, as amended (33 USC 1251 et seq.)
- Federal Land Policy and Management Act of 1976 (43 USC 1711-1712)
- Safe Drinking Water Act of 1974, as amended (42 USC 300 et seq.)
- National Environmental Policy Act of 1972 (42 USC 4321)

The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977 (CWA), provides the authority to the Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE) to establish water quality standards for surface waters and regulates discharges of pollutants into waters of the United States. The CWA has also made it unlawful to discharge any pollutant from a point source into any navigable waters of the United States, unless a permit has been obtained from the National Pollution Discharge Elimination System (NPDES) program.

The Environmental Division of the Mandan, Hidatsa, Arikara (MHA) Nation, which is the tribal entity residing within the FBIR, has had an application pending with the EPA since 1996 for delegation of authority to set federally approved water quality standards on the FBIR. In the absence of tribal surface water quality authorities, enforcement of federal environmental laws regarding surface water on the FBIR is accomplished through permitting, inspection, and monitoring activities of the NPDES, as administered by the EPA.

Additionally, within the FBIR, the Missouri River and Lake Sakakawea are both considered navigable waters and are therefore subject to Section 10 of the Rivers and Harbors Act of 1899.

The EPA also has the authority to protect the quality of drinking water under the Safe Drinking Water Act of 1974 (SDWA). As amended in 1986 and 1996, the SDWA requires many actions to protect drinking water and its sources: rivers, lakes reservoirs, springs, and ground water wells. The Energy Policy Act of 2005 excludes hydraulic fracturing operations related to oil, gas, or geothermal production activities from EPA regulation under the SDWA.

The project area is situated in the Great Plains region of North Dakota that borders the Little Missouri Badlands to the north. This is an arid area with few isolated surface water basins. The majority of the surface waters in the region are associated with the Missouri River, Lake Sakakawea, the Little Missouri River, and tributaries to these water bodies. Surface water generally flows overland until draining into these systems.

The proposed project is located in the Lake Sakakawea basin, meaning surface waters within this basin drain to Lake Sakakawea. In addition, the proposed project is located in the Waterchief Bay Watershed and the Lower Hans Creek Bay Sub-Watershed. The watersheds and sub-watersheds, as well as the drainage pathway to Lake Sakakawea are illustrated in ***Figure 11. Watersheds and Sub-Watersheds Map.*** Runoff throughout the project area is by sheet flow until collected by ephemeral and perennial streams draining to Lake Sakakawea. Runoff patterns from each pad site are described below.

- **Felix USA 8-1TFH** – Runoff from the proposed pad would travel west towards a wooded ephemeral drainage where it would then travel north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of approximately 2.6 miles.
- **Felix USA 8-1H** – Runoff from the proposed pad would travel north, collecting in a wooded ephemeral drainage where it would then continue traveling north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 1.9 miles. In addition, runoff may travel east towards a wooded ephemeral drainage located east of the pad, continuing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 3.2 miles.

3.6.1.1 Surface Water Impacts/Mitigation

No Action Alternative – The No Action Alternative would not impact surface water

Proposed Action – No significant impacts to surface water are expected to result from the Proposed Action. The proposed well pads and access road have been sited to avoid direct impacts to surface waters and to minimize the disruption of drainage patterns across the landscape. Construction site plans would contain measures to divert surface runoff around each well pad. Culverts will be installed in drainages to

allow normal flows underneath the access road and to drain inside road ditches. The locations of culverts on BIA and private lands will be shown on the final plats submitted with the APD (also included in the appendix of this document). Marathon proposes two culverts along the access road on BIA lands. A third potential culvert may be installed along the proposed access road in the NE ¼ SE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M. All culverts will be laid on natural ground or at the original elevation of any drainage crossed, except as noted for ditch relief culverts. As the proposed access road is primarily located on uplands and given the minimal drainage area to be impacted on BIA lands, Marathon will utilize 18 inch corrugated metal pipe (CMP) culverts. Culvert outlets will extend at least 1 foot beyond the toe of any slope. Rip-rap or a combination of straw bales/waddles and silt fences will be utilized to prevent soil erosion at the culvert outlet. Excavation, bedding, and backfilling of culverts will be conducted according to any BLM or BIA requirements.

Roadway engineering and the implementation of BMPs (previously described) to control erosion would minimize runoff of sediment downhill or downstream. The entire perimeter of each well pad would be bermed to prevent runoff. Additionally, berming will be utilized around cut slopes to prevent runoff from entering the pad. Marathon will also place excess embankment and topsoil stockpiles on and around the pad in such a manner that will provide additional protection from migration of fluids, should they escape the pad. After well completion, the total area of pad disturbance would be reduced if feasible, and appropriate BMPs (including bio-logs and straw waddles placed outside of each pad and within the wooded draw located southeast of the Felix USA 8-1H well pad to act as additional containment against spills) would be utilized per consultation with BIA and BLM to ensure proper drainage and erosion controls are in place. The alteration of ephemeral wooded drainages near the well pads would be avoided. Specific measures to mitigate the impacts to surface waters and to minimize the disruption of drainage patterns may include, but are not limited to, the implementation of silt fences, and placement of straw waddles. The Proposed Action is not anticipated to result in significant increases in runoff or impacts to surface waters.

3.6.2 Ground Water

Review of the North Dakota State Water Commission's electronic records reveal that there are no active or permitted ground water wells within one-mile of the proposed project area. The Little Missouri River Aquifer is located northwest of the proposed project, and the Goodman Creek Aquifer is located north and east of the proposed project. No sole source aquifers have been identified within the state of North Dakota. ***Figure 12. Aquifers and Groundwater Wells Map*** illustrates the existing active or permitted ground water wells near the project area, as well as the aquifers in the area.

As part of the extraction process, hydraulic fracturing, a well stimulation process, will be used. This process enhances subsurface fracture systems, thereby allowing oil to move more freely through porous rock to production wells that bring the product to the surface. During the hydraulic fracturing process, fluids, commonly made up of water and chemical additives, are pumped down the well bore into the target formations at high pressure. This process uses large volumes of water under extremely high pressure to fracture rock within the target formation. Depending upon the characteristics of the rock being fractured and the well itself, several million gallons of water can be required to complete a job (Arthur et al, 2008).

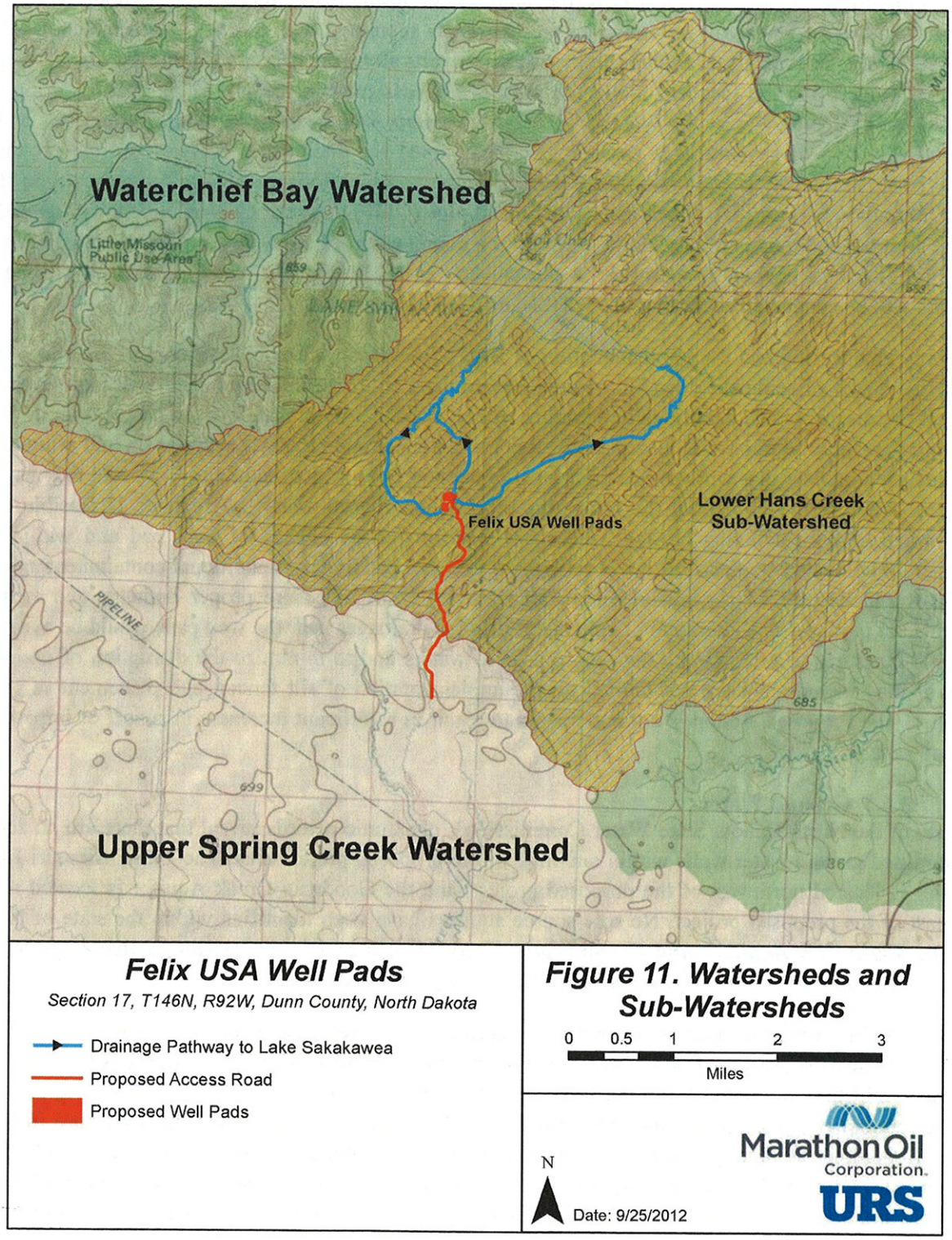


Figure 11. Watersheds and Sub-Watersheds Map

3.6.2.1 Ground Water Impacts/Mitigation

No Action Alternative – The No Action Alternative would not impact ground water.

Proposed Action – There are no known ground water wells within the spacing unit; however, a small portion of the Goodman Creek aquifer does occur within the Felix USA spacing unit (NDSWC, 2012). As described in Chapter 2 of this document, the proposed wells would be cemented and cased to isolate aquifers from potentially productive hydrocarbon and disposal/injection zones. Surface casing would be employed to a depth well below the ground surface to isolate and protect all near-surface aquifers from contamination during the drilling and operations phases. Further, the EPA has studied coalbed methane hydraulic fracturing in a 2004 report titled *Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs* (EPA, 2004). Based on the peer reviewed findings of the report, the EPA concluded that there was negligible risk of hydraulic fracturing fluid contaminating underground sources of drinking water during the hydraulic fracturing process of coalbed methane production wells, which are substantially shallower than the Bakken and Three Forks Formations. Nonetheless, EPA continues to study the effects of hydraulic fracturing. The EPA is currently conducting a study to evaluate oilfield hydraulic fracturing and the potential impacts on ground water. The results of this study are expected to be published in late 2012. Impacts to ground water are not anticipated as the result of the Proposed Action.

3.7 Vegetation

Botanical resources were evaluated using visual inspection. The project area was also investigated for the presence of invasive plant species.

The Felix USA well site study area (consisting of both Felix USA pads and the access road corridor) largely consisted of native and non-native upland grasses and shrubs. Deciduous trees occur regularly in low lying areas, along hill slopes, and in intermittent drainages. Cattle grazing is evident along several areas of the access road corridor as well as the proposed well pad areas. Dominant plant species observed throughout the Felix USA study area include: prairie coneflower (*Ratibida columnifera*), purple coneflower (*Echinacea angustifolia*), silver sagebrush (*Artemisia cana*), western snowberry (*Symphoricarpos occidentalis*), little bluestem (*Schizachyrium scoparium*), silverleaf scurfpea (*Pediomelum argophyllum*), prairie sandreed (*Calamovilfa longifolia*), green needlegrass (*Stipa viridula*), sideoats grama (*Bouteloua curtipendula*), broom snakeweed (*Gutierrezia sarothrae*), stiff goldenrod (*Solidago rigida*) and rubber rabbitbrush (*Chrysothamnus nauseosus*). Bur oak (*Quercus macrocarpa*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), plains cottonwood (*Populus deltoides*), quaking aspen (*Populus tremuloides*), chokecherry (*Prunus virginiana*), skunkbrush (*Rhus aromatic*) and silver buffaloberry (*Shepherdia argentea*) were all observed in wooded draws adjacent to and within the Felix USA study area. No wetlands were observed within the Felix USA study area. Small, dense communities of Leafy spurge (*Euphorbia esula*), a state listed noxious weed in North Dakota, were observed along the access road corridor throughout the project study area. There are no threatened or endangered plant species listed for Dunn County, North Dakota. Please refer to ***Figures 13, 14, 15, 16, 17, and 18.***

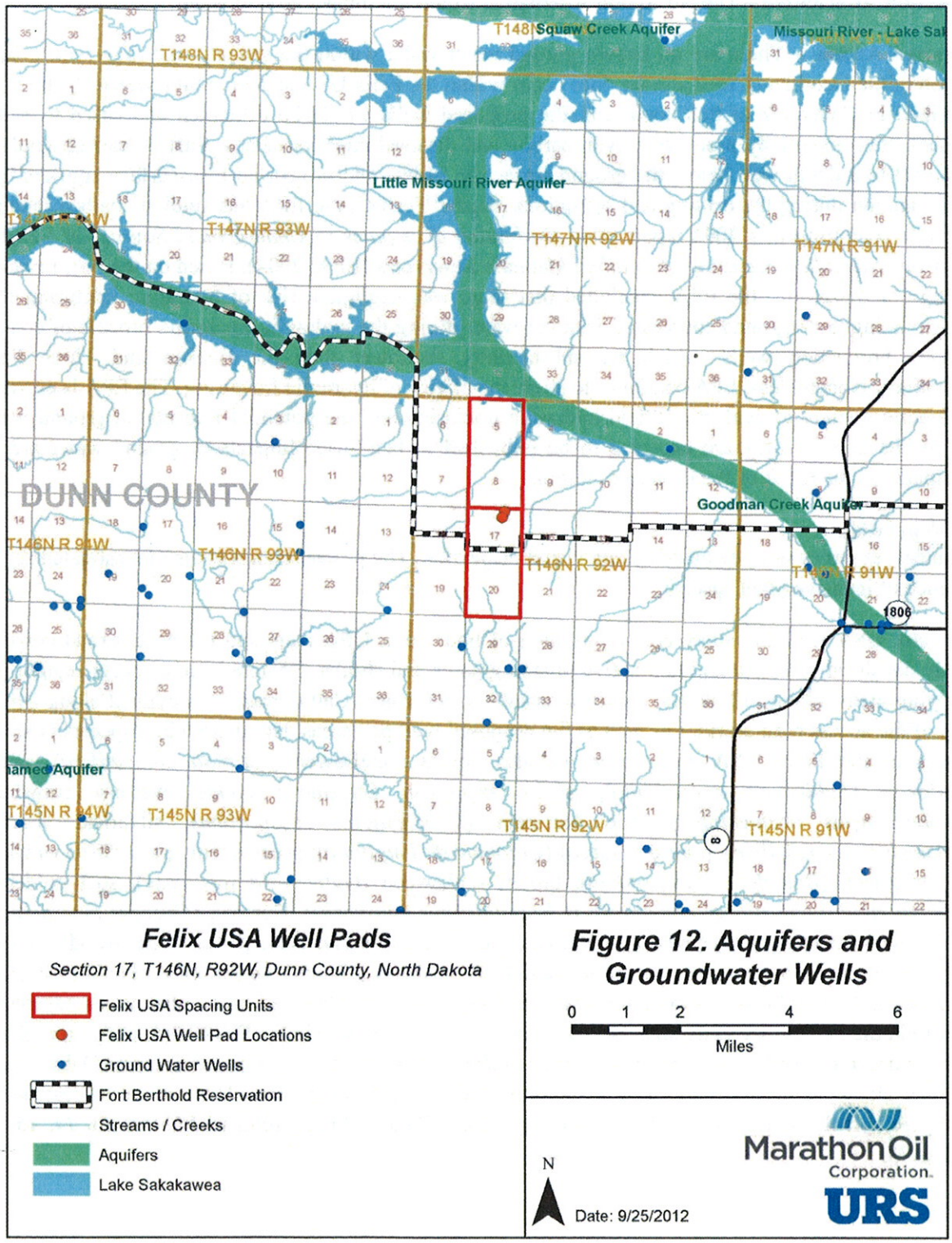


Figure 12. Aquifers and Groundwater Wells Map

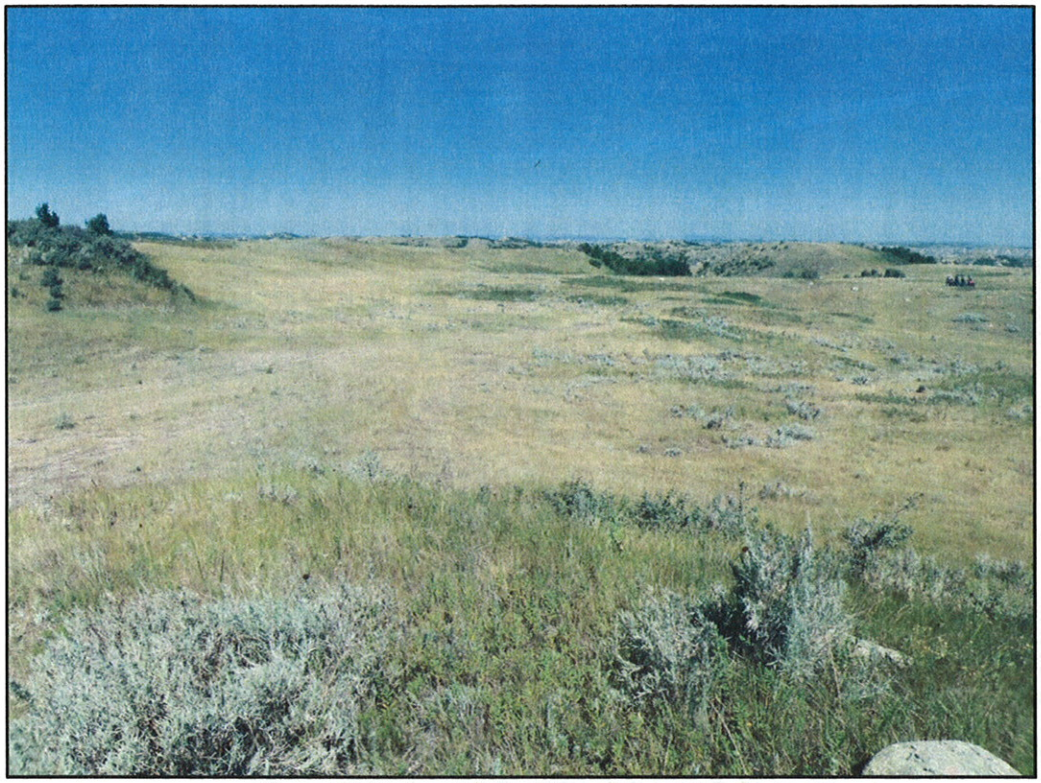


Figure 13. Proposed Felix USA pad area, view west

Figure 14. Proposed Felix USA 8-1TFH pad, view south

Figure 15. Typical Felix USA pad vegetation, view northwest

Figure 16. Prairie smoke community observed at Felix USA pad site area, view northeast

Figure 17. Felix USA access road, view southeast

Figure 18. Leafy spurge community along Felix USA access road

In addition, the project area was surveyed for the presence of noxious weeds. "Noxious weeds" is a general term used to describe plant species that are not native to a given area, spread rapidly, and have adverse ecological and economic impacts. These species may have high reproduction rates and are often well adapted to occupy a diverse range of habitats that would otherwise support native communities. These species subsequently out-compete and displace native plant species.

Of the 11 species declared noxious under the North Dakota Century Code (Chapter 63-01.0), four are known to occur in Dunn County. Please refer to ***Table 4. Noxious Weed Species.*** Leafy spurge was observed in small, dense communities along the access road corridor throughout the project study area. ***Figure 18*** depicts one of the observed communities of leafy spurge. In addition, counties and cities have the option to add species to the list to be enforced within their jurisdictions. There are no additional noxious weeds listed for Dunn County.

Table 4. Noxious Weed Species

Common Name	Scientific Name	2011 Dunn County Reported Acres
Absinth wormwood	*Artemesia absinthium L.*	51,900
Canada thistle	*Cirsium arvense (L.) Scop*	41,200
Dalmation toadflax	*Linaria genistifolia ssp. Dalmatica*	60
Diffuse knapweed	*Centaurea diffusa Lam*	—
Leafy spurge	*Euphorbia esula L.*	8,100
Musk thistle	*Carduus nutans L.*	—
Purple loosestrife	*Lythrum salicaria*	—
Russian knapweed	*Acroptilon repens (L) DC.*	—
Salt cedar (tamarisk)	*Tamarix ramosissima*	—
Spotted knapweed	*Centaurea maculosa Lam.*	—
Yellow toadflax	*Linaria vulgaris*	—

3.7.1 Vegetation Impacts/Mitigation

No Action Alternative – The No Action Alternative would not impact vegetation.

Proposed Action – Ground clearing activities associated with construction of the proposed well pads and access road would result in some loss of native vegetation and livestock pasture land; however, the areas of proposed surface disturbances are minimal in the context of the setting, and these impacts would be further minimized in accordance with the BLM Gold Book standards for well reclamation. Specific

measures (described in greater detail below) would include reduction of cut and fill slopes, redistribution of stockpiled topsoil, re-seeding with native seed mixtures, pad size reduction, erosion control measures, and noxious weed control measures.

Surface disturbance and vehicular traffic during construction will only take place within the approved ROW for the well pads and access road/utilities. Following construction, interim reclamation measures to be implemented include reduction of cut and fill slopes, redistribution of stockpiled topsoil, and re-seeding of disturbed areas with a native grass seed mixture consistent with surrounding vegetation. If commercial production equipment is installed, the areas of well pad disturbance would be reduced if feasible to accommodate the production facilities, while leaving adequate room to conduct normal well maintenance and potential recompletion operations, with the remainder of the pad reclaimed. Reclamation activities would include leveling, re-contouring, treating, backfilling, and re-seeding with a native grass seed mixture from a BIA/BLM-approved source. Erosion control measures would be installed (including bio-logs and straw waddles placed outside of the pad areas near drainages). Stockpiled topsoil would be redistributed and re-seeded as recommended by the BIA. Marathon would control noxious weeds prior to and after construction (where present) through approved chemical or mechanical methods.

If commercial development is not realized from any of the proposed wells on either of the pad sites, or upon final abandonment of commercial operations, all disturbed areas would be promptly reclaimed. The access road and well pads would be leveled or backfilled, scarified, and re-contoured to match the topography of the original landscape, and re-seeded with a native grass seed mixture that is consistent with surrounding native species to ensure a healthy and diverse vegetative community that is free of noxious weeds. Seed would be obtained from a BIA/BLM-approved source. Re-vegetation of the site would be consistent with the BLM Gold Book standards. Erosion control measures would be installed (including bio-logs and straw waddles placed outside of the pad near drainages) in a manner that is consistent with the BLM Gold Book standards. Maintenance of the grass seeding would continue until such time that the productivity of the stand is consistent with surrounding undisturbed vegetation and is free of noxious weeds. The surface management agency would provide final inspection of the site to deem the reclamation effort complete.

The Proposed Action would result in some loss of vegetation and ecological diversity of native mixed-grass prairie. Additionally, vegetation resources throughout the region could be affected by foreseeable future energy development via habitat loss and fragmentation. Incremental impacts to quality native prairie may occur in the future from vegetation clearing, soil loss, soil compaction, and increased encroachment of unmanaged noxious weeds. These impacts could be offset by avoidance of previously undisturbed, native prairie habitats, as well as the implementation of proven effective mitigation measures and BMPs (such as reduction of cut and fill slopes, redistribution of stockpiled topsoil, re-seeding with native seed mixtures, pad size reduction, erosion control measures, and noxious weed control measures). As a result, impacts to vegetation are expected to be minor.

3.8 Wildlife

Threatened, Endangered, and Candidate Species

In accordance with Section 7 of the Endangered Species Act (ESA) of 1973, 50 CFR Part 402, as amended, each federal agency is required to ensure the following two criteria. First, any action funded or

carried out by such agency must not be likely to jeopardize the continued existence of any federally-listed endangered or threatened species or species proposed to be listed. Second, no such action can result in the destruction or adverse modification of habitat of such species that is determined to be critical by the Secretary. An endangered species is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. A candidate species is a plant or animal for which the USFWS has sufficient information on its biological status and threats to propose it as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. While candidate species are not legally protected under the ESA, it is within the spirit of the ESA to consider these species as having significant value and worth protecting.

The Proposed Action area was evaluated to determine the potential for occurrences of federally-listed threatened, endangered, and candidate species. The USFWS (February 2012) identified the gray wolf, black-footed ferret, interior least tern, pallid sturgeon, and whooping crane as endangered species that may be found within Dunn County. The piping plover is listed as a threatened species and the Dakota Skipper and Sprague's pipit are listed as candidate species. In addition, Dunn County contains designated critical habitat for the piping plover adjacent to Lake Sakakawea. None of these species were observed in the field. Habitat requirements, the potential for suitable habitat within the project area, and other information regarding listed species for Dunn County are as follows:

3.8.1 Endangered Species

Gray wolf (*Canis lupus*) – The gray wolf is the largest wild canine species in North America. The species is found throughout northern Canada, Alaska, and the forested areas of Northern Michigan, Minnesota, and Wisconsin and has been re-introduced to Yellowstone National Park in Wyoming. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. These individuals are often males seeking new territory. Historically, its preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. Gray wolves live in packs of up to 21 members, although some individuals will roam alone. The project site is located far from other known wolf populations and is positioned in habitats that have not supported the species in recent years.

Black-footed ferret (*Mustela nigripes*) – The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. Preferred habitat for the black-footed ferret includes areas around prairie dog towns, as ferrets rely on prairie dogs for food and live in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive. In North Dakota, the southwestern corner of the state provided suitable habitat and supported the black-footed ferret. However, this species has not been confirmed in North Dakota for over 20 years and is presumed extirpated. There are no known prairie dog towns near the project site. Therefore, suitable habitat for the black-footed ferret was not observed.

Interior least tern (*Sterna antillarum*) – The interior least tern nests along inland rivers. The interior least tern is found in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande Rivers. In North Dakota, it is sighted along the Missouri River system during the summer nesting season. The interior least tern nests in sandbars or barren beaches, preferably in the middle of a river for increased safety while nesting. These birds nest close together, using safety in numbers to evade predators. There is no existing or potential habitat within the project area. Potential habitat in the form of Lake Sakakawea

shoreline exists approximately 1.3 miles north-northeast of the proposed Felix USA 8-1H well pad site (the nearest point).

Pallid sturgeon (*Scaphirhynchus albus*) – The pallid sturgeon is known to exist in the Yellowstone, Missouri, middle and lower Mississippi, and Atchafalaya Rivers, and seasonally in some tributaries. In North Dakota, the pallid sturgeon is found principally in the Missouri River and upstream of Lake Sakakawea in the Yellowstone River. Dating to prehistoric times, the pallid sturgeon has become well adapted to living close to the bottom of silty river systems. According to the USFWS, its preferred habitat includes "a diversity of water depths and velocities formed by braided river channels, sand bars, sand flats, and gravel bars." Weighing up to 80 pounds, pallid sturgeons are long lived, with individuals possibly reaching 50 years of age. Potential habitat for pallid sturgeon can be found in Lake Sakakawea approximately 1.3 miles north-northeast of the proposed Felix USA 8-1H well pad site (the nearest point).

Whooping crane (*Grus Americana*) – The whooping crane is the tallest bird in North America. In the United States, this species ranges through the Midwest and Rocky Mountain regions from North Dakota south to Texas and west into Colorado. Whooping cranes migrate through North Dakota along a band running from the south central to the northwest parts of the state. They use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting and various cropland and emergent wetlands for feeding. During migration, whooping cranes are often observed in riverine habitats, including the Missouri River. Currently there are three wild populations of whooping cranes, yielding a total species population of about 383. Of these flocks, only one is self-sustaining. According to a map produced by the USFWS, the project area is located within the whooping crane central flyway where 95 percent of confirmed sightings occurred. Although preferred habitat characteristics are not prevalent in the area, emergent wetland habitat was present outside of the study area. Additionally, several high-use, man-made cattle ponds were observed outside of the project study area. The majority of the project disturbance areas occur on upland rangeland with occasional wooded draws. Wolf Chief Bay of Lake Sakakawea, an area that may provide potential stopover habitat for whooping crane migration, is approximately 1.3 miles away from the proposed Felix USA 8-1H well pad site (the nearest point).

3.8.1.1 Endangered Species Impacts/Mitigation

No Action Alternative – The No Action Alternative would have no effect on any of the above mentioned endangered species.

Proposed Action – Due to a lack of preferred habitat characteristics and/or known populations, the proposed project is anticipated to have no effect on the gray wolf or black-footed ferret.

Suitable habitat for the interior least tern and pallid sturgeon is largely associated with Lake Sakakawea and its associated shoreline. Potential habitat for these species, Lake Sakakawea and its associated shoreline, occurs approximately 1.3 miles north-northeast of the proposed project site (Felix USA 8-1H well pad) at the nearest point. The Felix USA pads are situated on upland bluffs of rangeland with Lake Sakakawea and its shoreline located below the bluffs (approximately 450 feet). Runoff patterns for each site are described below. The topographic features of the area and distance from the shoreline should assist in providing sight and sound buffers for shoreline-nesting birds.

- **Felix USA 8-1TFH** – Runoff from the proposed pad would travel west towards a wooded ephemeral drainage where it would then travel north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of approximately 2.6 miles.

- **Felix USA 8-1H** – Runoff from the proposed pad would travel north, collecting in a wooded ephemeral drainage where it would then continue traveling north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 1.9 miles. In addition, runoff may travel east towards a wooded ephemeral drainage located east of the pad, continuing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 3.2 miles.

Storage tanks and the heater/treaters would be surrounded by an impermeable berm that would act as secondary containment to guard against accidental release of fluids from the site. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. Berming will be utilized around cut slopes to prevent runoff from entering each pad and pit and soil stockpiles will be used to divert drainage outside of the fill slopes. Marathon will also build a berm around the entire perimeter of each pad to prevent runoff. Excess embankment and topsoil stockpiles will also be placed on and around each pad in such a manner that will provide additional protection from migration of fluids, should they escape the pad. In addition, stabilization of drill cuttings before placement in the pit and the reinforced lining of the cuttings pit would diminish the potential for pit leaching. After well completion, the areas of well pad disturbance would be reduced, if feasible, per recommendations and consultation with the BIA and BLM. Due to the implementation of several containment measures and the cuttings pit parameters, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Given the distance from the Lake through the existing drainage pathway (1.9 miles at the nearest point), construction methodologies, and the level of containment measures, numerous measures are in place to prevent the movement of accidentally released fluids to Lake Sakakawea. As a result, the proposed project may affect, but is not likely to adversely affect the pallid sturgeon. Although substantial containment measures will be in place to contain accidentally released fluids to Lake Sakakawea, USFWS has recently indicated that interior least terns may travel significant distances from shoreline habitat to forage during the nesting season. As such, the proposed project may affect but is not likely to adversely affect the interior least tern.

Whooping cranes use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting, and various cropland and emergent wetlands for feeding. Although preferred habitat characteristics are not prevalent in the area, emergent wetland habitat was present outside of the study area. Additionally, several high-use, man-made cattle ponds were observed outside of the project study area. The majority of the project disturbance areas occur on upland rangeland with occasional wooded draws. Cattle grazing is prevalent. In addition, the proposed project is located in the Central Flyway where 95 percent of confirmed whooping crane sightings have occurred. Although preferred habitat characteristics are not prevalent in the area, emergent wetland habitat was observed nearby and the project is located within the whooping crane migration corridor. As a result, the proposed project may affect, but is not likely to adversely affect the whooping crane. Per USFWS recommendations on previous projects of a similar nature, if a whooping crane is sighted within one-mile of the well sites or associated facilities while under construction, all work will cease within one-mile of that part of the project and the USFWS will be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

3.8.2 Threatened Species

Piping plover (*Charadrius melodus*) – The piping plover is a small migratory shorebird. Historically, piping plovers could be found throughout the Atlantic Coast, Northern Great Plains, and the Great Lakes. Drastically reduced, sparse populations presently occur throughout this historic range. In North Dakota, breeding and nesting sites can be found along the Missouri River system. Preferred habitat for the piping plover includes riverine sandbars, gravel beaches, alkali areas of wetlands, and flat, sandy beaches with little vegetation. The USFWS has identified critical habitat for the piping plover on the Missouri River system. Critical habitat includes reservoir reaches composed of sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale, and their interface with water bodies. There is no existing or potential habitat within the project area. According to USFWS data, critical habitat occurs throughout the entire shoreline of Lake Sakakawea. Lake Sakakawea is located approximately 1.3 miles miles north-northeast of the proposed Felix USA 8-1H well pad site (the nearest point).

3.8.2.1 Threatened Species Impacts/Mitigation

No Action Alternative – The No Action Alternative would have no effect on the piping plover or designated piping plover critical habitat.

Proposed Action – Similar to the interior least tern, suitable habitat for the piping plover is largely associated with Lake Sakakawea and its shoreline.

Potential habitat for the piping plover occurs approximately 1.3 miles north-northeast of the proposed Felix USA project site at the nearest point. The proposed well pads are situated on an upland bluff of rangeland, with Lake Sakakawea and its shoreline located below the bluffs (approximately 450 feet). Runoff patterns for each site are described below. The topographic features of the area and distance from the shoreline should assist in providing sight and sound buffers for shoreline-nesting birds.

- **Felix USA 8-1TFH** – Runoff from the proposed pad would travel west towards a wooded ephemeral drainage where it would then travel north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of approximately 2.6 miles.

- **Felix USA 8-1H** – Runoff from the proposed pad would travel north, collecting in a wooded ephemeral drainage where it would then continue traveling north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 1.9 miles. In addition, runoff may travel east towards a wooded ephemeral drainage located east of the pad, continuing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 3.2 miles.

Storage tanks and the heater/treaters would be surrounded by an impermeable berm that would act as secondary containment to guard against accidental release of fluids from the site. The berm would be sized to hold 100% of the capacity of the largest storage tank plus one full day's production. Berming will be utilized around cut slopes to prevent runoff from entering the pads and, where BIA determines necessary, pit and soil stockpiles will be used to divert drainage outside of the fill slopes. Marathon will also build a berm around the entire perimeter of each pad to prevent runoff. Excess embankment and topsoil stockpiles will also be placed on and around the pad in such a manner that will provide additional protection from migration of fluids, should they escape the pads. In addition, stabilization of drill cuttings before placement in the pit and the reinforced lining of the cuttings pit would diminish the potential for pit leaching. After well completion, the areas of well pad disturbance would be reduced, if feasible, per recommendations and consultation with the BIA and BLM. Due to the implementation of several containment measures and the cuttings pit parameters, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Given the distance from the Lake through the existing drainage pathway at the nearest point (1.9 miles), construction methodologies, and the level of containment measures, numerous measures are in place to prevent the movement of accidentally released fluids to Lake Sakakawea. Although substantial containment measures will be in place to contain accidentally released fluids to Lake Sakakawea, USFWS has recently indicated that piping plovers may travel significant distances from shoreline habitat to forage during the nesting season. As such, the proposed project may affect but is not likely to adversely affect the piping plover. The proposed project is not likely to destroy or adversely modify designated piping plover critical habitat.

3.8.3 Candidate Species

Dakota skipper (*Hesperia dacotae*) – The Dakota skipper is a small butterfly with a one-inch wing span. These butterflies historically ranged from southern Saskatchewan, across the Dakotas and Minnesota, to Iowa and Illinois. The preferred habitat for the Dakota skipper consists of undisturbed, flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. The Felix USA project area consists of native and non-native upland grasses with abundant wildflowers. Cattle were present during the field surveys and grazing was evident. No Dakota skippers were observed during the field survey, which was conducted during the adult flight period (mid-June to early-July) for the species.

Sprague's pipit (*Anthus spragueii*) – The Sprague's pipit is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie habitat with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance. The Felix USA project area consists of native and non-native upland grasses with high plant species diversity. Historically, natural disturbances such as fire and bison grazing were major drivers in maintaining a healthy prairie ecosystem that provided ideal habitat for the Sprague's pipit. Today, fire is no longer a widespread regular phenomenon as it was in pre-colonial times, and bison grazing has largely been substituted with cattle grazing. Little information exists at this time to conclusively determine how grazing or substituting cattle for bison throughout much of the range has impacted the Sprague's pipit, but from the information available, it is believed that cattle grazing is not a significant threat to the species. Human disturbance at the site is minimal. Cattle were present during the field surveys and grazing was evident. No Sprague's pipit were observed during the field survey.

3.8.3.1 Candidate Species Impacts/Mitigation

No Action Alternative – The No Action Alternative would have no effect to the Dakota skipper or Sprague's pipit.

Proposed Action – The Felix USA project area consists of native and non-native upland grasses with abundant wildflowers. Due to the presence of potential habitat for the Dakota skipper within the project area, the proposed action may impact individuals or habitat. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species. Ground disturbance and vehicle traffic will occur within the limits of the approved ROW; therefore, impacts to potential Dakota skipper habitat will be minimal.

The proposed project site consists of native and non-native upland grasses with high plant species diversity. Human disturbance was minimal. Due to the presence of potential habitat for the Sprague's pipit within the project area, the proposed action may impact individuals or habitat. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species. Construction is anticipated to occur outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction will need to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests will be conducted by a qualified biologist within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to USFWS and BIA.

3.8.4 Bald and Golden Eagles

Protection is provided for the bald and golden eagle through the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA of 1940, 16 U.S.C. 668–668d, as amended, was written with the intent to protect and preserve bald and golden eagles, both of which are treated as species of concern within the Department of the Interior. The BGEPA prohibits, except under certain specified conditions, the taking, possession, or commerce of bald and golden eagles. Under the BGEPA, to "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb, wherein "disturb" means to agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

The bald eagle (*Haliaeetus leucocephalus*) is sighted in North Dakota along the Missouri River during spring and fall migration periods and periodically in other places in the state such as the Devils Lake and Red River areas. In 2009, the ND Game and Fish Department estimated that 66 nests were occupied by bald eagles, though not all eagle nests were visited and verified. Preferred habitat for the bald eagle includes open areas, forests, rivers, and large lakes. Bald eagles in North Dakota initiate nesting in February and eggs are laid in mid-March, with young bald eagles fledging sometime in July. Bald eagles tend to use the same nest year after year, building atop the previous year's nest. No bald eagles or nests were observed within 0.5-miles of proposed project disturbance areas during the ground surveys conducted on May 24-25, June 12, July 5, and July 25, 2012.

The golden eagle (*Aquila chrysaetos*) can be spotted in North Dakota throughout the badlands and along the upper reaches of the Missouri River in the western part of the state. Golden eagle pairs maintain territories that can be as large as 60 square miles and nest in high places including cliffs, trees, and human-made structures. They perch on ledges and rocky outcrops and use soaring to search for prey. Golden eagle preferred habitat includes open prairie, plains, and forested areas. Golden Eagles in North Dakota typically begin nesting in January and eggs are laid in late March, with young golden eagles fledging typically in mid-July. No golden eagles or golden eagle nests were observed within 0.5-miles of proposed project disturbance areas during the ground surveys conducted on May 24-25, June 12, July 5, and July 25, 2012.

The USGS Northern Prairie Wildlife Research Center maintains information on bald eagle and golden eagle habitat within the state of North Dakota. According to the USGS data, the 0.5-mile buffered survey area for the proposed project does contain recorded habitat that could potentially support both the bald eagle and the golden eagle. Further, USFWS indicated in a letter dated October 19, 2012, that according to information available to the USFWS, that recent breeding territory data indicates that golden eagles may be present in the proposed activity area. In addition, golden eagle research compiled by Dr. Anne Marguerite Coyle (previously of Dickinson State University) was obtained from the North Dakota Game and Fish Department. Dr. Coyle's data consists of a database of historic golden eagle nesting sites in North Dakota. According to Dr. Coyle's information (last updated in 2010), the closest recorded golden eagle nest is located approximately 1.0 miles northeast of the proposed Felix USA 8-1H well pad. Coyle's

data indicates that this nesting site was last observed as an "occupied nest fair to good condition..." in 1985. The nest could not be located in 2003, 2004, 2005, and 2006. This historic nesting site was thoroughly searched with the aid of a GPS device and binoculars; however, the nest could not be located and has been determined to be destroyed. No golden or bald eagles were observed during any of the Felix USA site visits. ***Figure 19. Eagle Habitat and Nest Locations Map*** illustrates bald and golden eagle habitat and historic golden eagle nesting locations. URS's golden eagle ground survey protocol for the Felix USA site is described below.

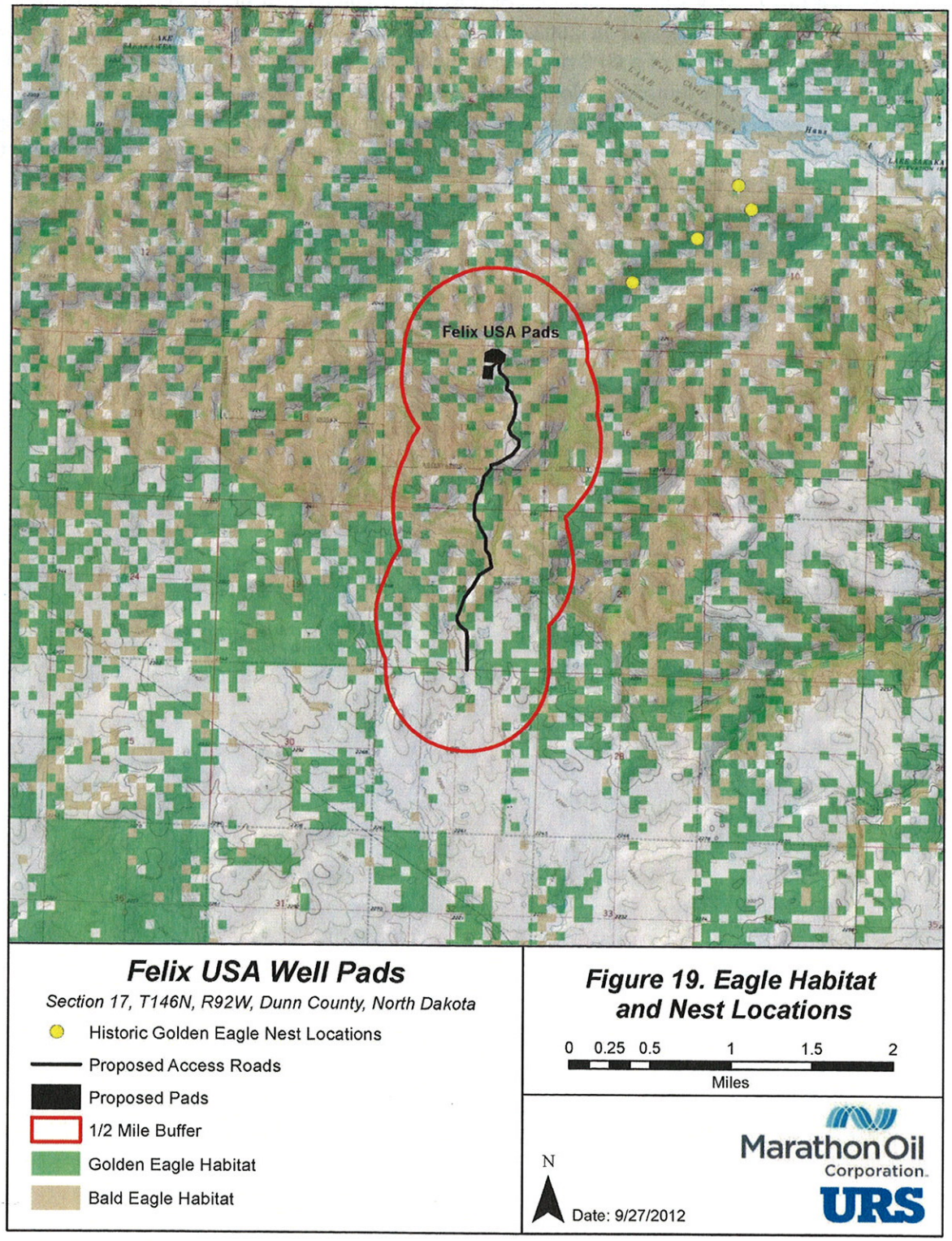


Figure 19. Eagle Habitat and Nest Locations Map

Prior to the nest inventory/occupancy surveys, URS staff compiled relevant data/information in a desktop analysis to identify potential nesting areas and habitat. This included the following:

- Review of 0.5-mile buffer map and potential eagle habitat map
- Review of Margie Coyle's data (provided by ND Game and Fish) of historic nesting sites in proximity to project noting the last date of observation and condition of potential nesting sites.
- Review of aerial imagery to identify cliffs, structures, mature trees, and other features that could support eagle nests.
- Review of topography maps to identify suitable nesting habitat.

Coyle's data and the 0.5-mile project area buffer were uploaded to a GPS unit for the surveys. The survey method was a nest inventory survey. If nests were identified, then URS staff would evaluate nest occupancy. During each field visit (May 24-25, June 12, July 5, and July 25, 2012) URS staff surveyed for golden eagle nests and golden eagles. The surveys were conducted during morning hours (in some cases evening hours). Observation areas that offered clear vantage points were utilized for glassing the sky and habitat areas that could potentially support golden eagle nests. The survey duration at each observation area typically lasted an hour or greater. Several observation areas were used to cover all potential nesting locations within the project area.

Due to the fact that no nests were identified, nest occupancy was not evaluated. Had a nest been identified, the protocol would be to record the data provided below and communicate this information to USFWS and BIA.

Data that would be recorded if a nest were observed:

Date and time of observation

Breeding area name (developed by URS or obtained from Coyle's data)

Observer information (name and qualifications)

Weather conditions (temperature, cloud cover, wind direction, precipitation)

Number of Adults observed

Number of Sub-adults observed

Behavior observed

Status of breeding area

Number of young in or fledging near nest

Nest aspect

GPS coordinates

Nest condition, habitat description, and land use

3.8.4.1 Bald and Golden Eagles Impacts/Mitigation

No Action Alternative – The No Action Alternative would not impact bald or golden eagles.

Proposed Action – The USFWS' overall management objective for gold eagle and bald eagle populations is to ensure no declines in breeding populations of either species. Numerous relatively minor disruptions to eagle behaviors from multiple activities, even if spatially or temporally distributed, may lead to disturbance that would not have resulted from fewer or more carefully sited activities. The accumulation of multiple land development projects or siting of multiple infrastructures that may be hazardous to eagles can cumulatively reduce the availability of alternative sites suitable for breeding, feeding, or sheltering, resulting in a greater than additive risk of take to eagles.

For ground surveys, USFWS recommends surveying a one-mile wide evaluation corridor to identify golden eagle nests. As previously described, URS conducted ground surveys on July 25-27, 2012.

The proposed project is located within areas of recorded suitable bald and golden eagle habitat. No evidence of bald or golden eagle nests was observed during the ground surveys conducted on May 24-25, June 12, July 5, and July 25, 2012. No golden or bald eagles were observed during any of the Felix USA site visits. Marathon plans to initiate construction before the start of the nesting season to avoid potential impacts to bald and golden eagles. Therefore, no impacts to bald or golden eagles are anticipated to result from the proposed project. The Proposed Action is not anticipated to result in the take of bald or golden eagles. If a bald or golden eagle nest is sighted within 0.5 miles of the project area during construction, construction activities shall cease and the USFWS shall be notified for advice on how to proceed. If eagles are observed demonstrating behaviors that would indicate agitation or if Marathon's activities are causing interference with breeding, feeding, or sheltering (indicating potential take of bald or golden eagles), URS, Marathon and BIA will work in conjunction with USFWS to avoid the potential take by modifying or temporarily suspending the activity or apply for a take permit.

3.8.5 Migratory Birds and Other Wildlife

The Migratory Bird Treaty Act (MBTA), 916 U.S.C. 703–711, provides protection for 1,007 migratory bird species, 58 of which are legally hunted. The MBTA regulates impacts to these species such as direct mortality, habitat degradation, and/or displacement of individual birds. The MBTA defines "taking" to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof, except when specifically permitted by regulations.

The proposed project study area lies in the central flyway of North America. As such, this area is used as resting grounds for many birds on their spring and fall migrations, as well as nesting and breeding grounds for many waterfowl species. In addition, the project study area provides suitable habitat for several game and non-game wildlife species. The grasslands, wooded draws, and shrubs located within the project study area provide cover for species such as whitetail deer, turkey, coyote, badger, sharp-tailed grouse, and non-game grassland and woodland birds. Badland ecotypes, like those observed around the northern portion of the project study area, provide excellent primary habitat for mule deer, mountain lion, and bobcat. During the field resource surveys, turkey vultures (several), sharp-tailed grouse (several), whitetail deer (1), grasshopper sparrow (several), crows (several), mourning doves (several), a meadow

vole, and a northern harrier were observed in or around the project study area. Several cattle were also observed grazing.

3.8.5.1 Migratory Birds and Other Wildlife Impacts/Mitigation

No Action Alternative – The No Action Alternative would not impact migratory birds or other wildlife

Proposed Action – Due to the presence of suitable habitat at the project site for many wildlife and avian species, ground clearing, drilling, and long-term production activities associated with the proposed project may impact individuals by displacing animals from suitable habitat. Marathon anticipates completing construction outside the migratory bird nesting season (February 1 through July 15) which will avoid impacts to migratory birds during the breeding/nesting season. In the event that construction will need to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests will be conducted by a qualified biologist within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to USFWS and BIA.

While many species of wildlife may continue to use the project area for breeding and feeding and continue to thrive, the activities associated with oil and gas development may displace animals from otherwise suitable habitats. As a result, wildlife may be forced to utilize marginal habitats or relocate to unaffected habitats where population density and competition increase. Consequences of such displacement and competition may include lower survival, lower reproductive success, lower recruitment, and lower carrying capacity leading ultimately to population-level impacts. Therefore, the proposed project may impact individuals and populations within these wildlife species, but is not likely to result in a trend towards listing of any of the wildlife species identified.

The proposed site is located on an upland area that is at a considerably higher elevation (approximately 450 feet) than the Lake Sakakawea shoreline. Additionally, the distance to Lake Sakakawea is approximately 1.3 miles. This distance, the vegetative screening provided by trees and shrubs, along with the topographic features of the area, should assist in providing sight and sound buffers for shoreline-nesting birds.

During drilling activities, the noise, movements, and lights associated with the drilling are expected to deter wildlife from accessing the area. In addition, the cuttings pit would be used primarily for solid material storage, and it is expected that very minimal free fluid will be present in the pit. The absence of exposed liquids in the pit would minimize their attractiveness to wildlife. Upon completion of drilling operations, the cuttings pit would be netted with State and Federal approved nets. These would remain in place with proper maintenance until the closure of the cuttings pit.

Further, design considerations in regards to the pads and the access road will be utilized to minimize potential habitat degradation. The pads have been positioned in a tiered design atop a bluff and have been orientated in a way to avoid wooded drainages. Existing two-track roads were also utilized where possible to minimize new disturbance. Other unique habitats such as clay buttes, hillside shrubs, and surface drainages have been avoided. The on-site storage tanks and heater/treater would be surrounded by an impermeable berm that would act as secondary containment to guard against possible spills. The berm would be designed to hold 100% of the capacity of the largest storage tank plus a full day's production. As an additional containment measure, Marathon will berm the entire perimeter of each well pad.

Marathon will also place excess embankment and topsoil stockpiles on and around each pad in such a manner that will provide additional protection from migration of fluids, should they escape the pad. Other BMPs will be utilized to reduce wind and water erosion of soil resources, as well as the implementation of a semi-closed mud/cuttings system with an on-site cuttings pit during drilling.

Additionally, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species will be implemented during the construction and ongoing operation phases. These measures will include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining open pits and ponds that are free from oil, and netting the cuttings pit with netting that has a maximum mesh size of 1.5 inches. As a result, adverse impacts to migratory birds are not anticipated.

3.9 Cultural Resources

Historic properties, or cultural resources, on federal or tribal lands are protected by many laws, regulations and agreements. The National Historic Preservation Act of 1966 (16 USC 470 et seq.) at Section 106 requires, for any federal, federally assisted or federally licensed undertaking, that the federal agency take into account the effect of that undertaking on any district, site, building, structure or object that is included in the National Register of Historic Places (National Register) before the expenditure of any federal funds or the issuance of any federal license. Cultural resources is a broad term encompassing sites, objects, or practices of archaeological, historical, cultural and religious significance. Eligibility criteria (36 CFR 60.6) include association with important events or people in our history, distinctive construction or artistic characteristics, and either a record of yielding or a potential to yield information important in prehistory or history. In practice, properties are generally not eligible for listing on the National Register if they lack diagnostic artifacts, subsurface remains or structural features, but those considered eligible are treated as though they were listed on the National Register, even when no formal nomination has been filed. This process of taking into account an undertaking's effect on historic properties is known as "Section 106 review," or more commonly as a cultural resource inventory.

The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery, and preservation of significant scientific, prehistoric, archaeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally licensed, or federally-funded project.

The area of potential effect (APE) of any federal undertaking must also be evaluated for significance to Native Americans from a cultural and religious standpoint. Sites and practices may be eligible for protection under the American Indian Religious Freedom Act of 1978 (42 USC 1996). Sacred sites may be identified by a tribe or an authoritative individual (Executive Order 13007). Special protections are afforded to human remains, funerary objects, and objects of cultural patrimony under the Native American Graves Protection and Repatriation Act (NAGPRA, 25 USC 3001 et seq.).

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 is triggered by the possession of human remains or cultural items by a federally-funded repository or by the discovery of human remains or cultural items on federal or tribal lands and provides for the inventory, protection, and return of cultural items to affiliated Native American groups. Permits are required for intentional excavation and removal of Native American cultural items from federal or tribal lands.

The American Indian Religious Freedom Act of 1978 requires consultation with Native American groups concerning proposed actions on sacred sites on federal land or affecting access to sacred sites. It establishes federal policy to protect and preserve for American Indians, Eskimos, Aleuts, and Native Hawaiians the right to free exercise of their religion in the form of site access, use and possession of sacred objects, as well as the freedom to worship through ceremonial and traditional rites. The Act requires federal agencies to consider the impacts of their actions on religious sites and objects important to these peoples, regardless of eligibility for listing on the NRHP.

In accordance with 16 U.S.C. 470hh(a), information concerning the nature and location of archaeological resources and traditional cultural properties, and detailed information regarding archaeological and cultural resources, is confidential. Such information is exempt from the Freedom of Information Act and is not included in this EA.

Whatever the nature of the cultural resource addressed by a particular statute or tradition, implementing procedures invariably include consultation requirements at various stages of a federal undertaking. The MHA Nation has designated a Tribal Historic Preservation Officer (THPO) by Tribal Council resolution, whose office and functions are certified by the National Park Service. The THPO operates with the same authority exercised in most of the rest of North Dakota by the State Historic Preservation Officer (SHPO). Thus, BIA consults and corresponds with the THPO regarding cultural resources on all projects proposed within the exterior boundaries of the FBIR.

A cultural resource inventory of this well pad and access road was conducted by personnel of URS Corporation, using an intensive pedestrian methodology. Approximately 50 acres were inventoried between May 24 and July 5, 2012 (Glaab 2012). Three archaeological sites were located, of which one is evaluated as **not eligible**, one is evaluated as **eligible**, and one may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register. As the lead federal agency, and as provided for in 36 CFR 800.5, on the basis of the information provided, BIA reached a determination of **no historic properties affected** for this undertaking, as the eligible and potentially eligible archaeological sites will be avoided. This determination was communicated to the THPO on September 5, 2012; however, the THPO did not respond within the allotted 30 day comment period.

3.9.1 Cultural Resources Impacts/Mitigation

No Action Alternative – The No Action Alternative would not impact cultural resources.

Proposed Action – During the Class III inventory, four new isolated finds and three new archaeological sites that may possess the quality of integrity and meet at least one of the criteria (36 CFR 60.6) for inclusion on the National Register were identified. URS has recommended one of the sites as *unevaluated* for the NRHP and further testing is warranted. An additional site has been recommended *Not Eligible* for the NRHP due to lack of artifact density, diversity, and sediment depth potential. The third site has been recommended as *Eligible* for the NRHP on the basis of the uniqueness of the site and strong depth potential. URS consulted with Marathon and Marathon survey contractors regarding the location of the *unevaluated* and *Eligible* sites within the project corridor. Marathon re-routed the access road to avoid both sites with the appropriate distance buffer (100 feet). Isolated finds do not receive recommendations for the National Register according to standards set forth by the State Historical Society of North Dakota (SHSND). Marathon has instructed URS archaeological staff and the MHA traditional cultural

practitioner to conduct construction monitoring of the identified cultural sites on BIA lands during construction. Further, Marathon will fence the sites during construction with high visibility fencing. As such, cultural resources impacts are not anticipated. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA. All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.

3.10 Socioeconomics

This section examines community characteristics such as population, housing, demographics, employment, and economics trends in the region. Socioeconomic conditions depend on the character, habits, and economic conditions of people living within the proposed project area. Business, employment, transportation, utilities, etc. are factors that affect the social climate of a community. Other factors that distinguish the social habits of one particular area from another include the geography, geology, and climate of the area.

The FBIR is home to six major communities, consisting of New Town, White Shield, Mandaree, Four Bears, Twin Buttes, and Parshall. These communities provide small business amenities such as restaurants, grocery stores, and gas stations; however, they lack the larger shopping centers that are typically found in larger cities of the region such as Minot and Bismarck. According to 2006-2010 US Census Bureau American Community Survey (ACS) data, educational/health/social assistance is the largest industry on the FBIR, followed by the arts, entertainment, recreation, accommodation, and food services industry. Public administration, agriculture, retail, manufacturing and construction also make up a significant portion of the industries represented on the FBIR. In addition, several businesses are located on the FBIR, including Northrop Manufacturing, Mandaree Enterprise Corporation, Three Affiliated Tribes Lumber Construction Manufacturing Corporation, and Uniband.

While the economy of North Dakota, including the FBIR, has historically depended on agriculture, 2010 Census Bureau data indicated that the major employers in the state are government (16.6%), health care and social assistance (11.9%) and retail (10.8%). Energy development and extraction, power generation, and services related to those industries have become increasingly important to the state's economy in recent years and many service sector jobs have been created to support those industries.

Current population and percent change from 2000 to 2010 for Dunn County, FBIR, and the state are provided in ***Table 5***. All three areas have undergone population growth, with Dunn County seeing the most noticeable increase (6.6%). These increases can be attributed to more employment opportunities in western North Dakota associated with oil and gas development. Native Americans continue to be the predominant group on the FBIR, while they are considered a minority across the rest of the state.

Per capita income, median household income, the unemployment rate, and poverty rates for Dunn County, FBIR and the state are presented in ***Table 6***. Median household and per capita income remain at higher levels for the state, while Dunn County reported the lowest percentage of individuals living below the poverty level. The FBIR reported unemployment rate and poverty rates significantly higher than the state average.

Several paved state highways provide access to the reservation including ND Highways 22 and 23 and Highway 1804. These highways provide access to larger communities such as Bismarck, Minot, Dickinson, and Williston. Paved and gravel BIA roadways serve as primary connector routes within the reservation. In addition, networks of rural gravel roadways are located throughout reservation boundaries providing access to residences, oil and gas developments, and agricultural land. Major commercial air service is provided out of Bismarck and Minot, with small-scale regional air service provided out of New Town and Williston.

Table 5. Demographic Trends

Location	Population in 2010	% of State Population	% Change 2000-2010	Predominant Race	Predominant Minority
Dunn County	3,536	0.55%	+6.6%	White	American Indian and Alaskan Native
Fort Berthold Reservation	6,341	0.98%	+4.1%	American Indian and Alaskan Native	White
Statewide	**646,844**	-	**+1.1%**	**White**	**American Indian and Alaskan Native**

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Table 6. Employment and Income

Location	Per Capita Income	Median Household Income	Unemployment Rate	Individuals Living Below Poverty Level
Dunn County	$24,832	$48,707	3.6%	8.6%
Fort Berthold Reservation	$18,059	$41,658	10.4%	26.0%
Statewide	**$25,803**	**$62,920**	**3.6%**	**12.3%**

Source: U.S. Census Bureau, 2006-2010 American Community Survey

3.10.1 Socioeconomic Impacts/Mitigation

No Action Alternative – The No Action alternative would not adversely impact the socioeconomic conditions in the project area. However, the No Action alternative would not permit the development of oil and gas resources within the spacing units, which could have positive effects on employment and income through the creation of jobs and payment of leases, easement, and/or royalties to Tribal members.

Proposed Action – The Proposed Action is not anticipated to substantially impact the socioeconomic conditions in the project area, but it does have the potential to yield beneficial impacts. Implementation of the Proposed Action would likely result in direct and indirect economic benefits associated with industrial and commercial activities in the area, including the surrounding counties, the FBIR, and the state. Direct impacts would include increased spending by contractors and workers for materials, supplies, food, and lodging in Dunn County and the surrounding area, which would be subject to sales and lodging taxes. Other state, local, and tribal tax payments and fees would be incurred as a result of the implementation of the Proposed Action. Wages due to employment would also impact per capita income for those that were previously unemployed or underemployed. Indirect benefits would include increased spending from increased oil and gas production, as well as an increase in generated taxes from short-term operations. Mineral severance and royalty taxes, as well as other relevant county and tribal taxes on production would also grow directly and indirectly as a result of increased industrial activity in the oil and gas industry.

3.11 Public Health and Safety

Health and safety concerns associated with this type of development include hydrogen sulfide (H_2S) gas and hazardous materials used or generated during well installation or production.

H_2S is extremely toxic in concentrations above 500 parts per million, but it has not been found in measureable quantities in the Bakken and Three Forks Formations. However, before reaching the Bakken and Three Forks, drilling would penetrate the Mission Canyon Formation, which is known to contain varying concentrations of H_2S. Contingency plans submitted to the BLM comply fully with the relevant portions of Onshore Oil and Gas Order No. 6 to minimize potential for gas leaks during drilling. Emergency response plans protect both the drilling crew and the general public within proximity of the well. Precautions would include automated sampling and monitoring by drilling personnel stationed at each well site.

During drilling and completion operations, it is expected that truck traffic rates will be high for a short period of time. Although the rate of tanker truck trips depends upon production, it can be estimated that approximately two trucks per day will access each well pad during the production period. Trucks for normal production operations would use the existing 2nd Street and the proposed access road. Produced water would be transported to an approved disposal site. All traffic would be confined to approved routes and would conform to established load restrictions and speed limits for state and BIA roadways. Haul permits would be obtained as required.

Spills of produced water, oil, or other fluids would be cleaned up and disposed of in accordance with appropriate regulations. Sewage would be contained in a portable chemical toilet during drilling. All trash would be stored in a trash bin and hauled to an appropriate landfill during and after the drilling and completion operations.

3.11.1 Public Health and Safety Impacts/Mitigation

No Action Alternative – The No Action Alternative would not public health and safety.

Proposed Action – Project design and operational precautions would minimize the likelihood of impacts from H_2S gases and hazardous materials as described below.

H_2S Gases.

It is unlikely that the Proposed Action would result in release of H_2S in dangerous concentrations; however, Marathon will submit H_2S Contingency Plans to the BLM as part of the site APDs. These plans establish safety measures to be implemented throughout the drilling process to prevent accidental release of H_2S into the atmosphere. The Contingency Plans are designed to protect persons living and/or working within 3,000 feet (0.57 miles) of each well location and include emergency response procedures and safety precautions to minimize the potential for an H_2S gas leak during drilling activities. Satellite imagery revealed that there are no residences/buildings within 3,000 feet of the proposed sites.

Hazardous Materials.

The EPA specifies chemical reporting requirements under the Superfund Amendments and Reauthorization Act of 1986, as amended. No materials used or generated by this project for production, use, storage, transport, or disposal are on either the Superfund list or on the EPA's list of extremely hazardous substances in 40 CFR 355.

The SPCC (Spill Prevention, Control, and Countermeasure) rule includes EPA requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC Plans. As part of the Proposed Action, Marathon would prepare a SPCC Plan.

Safety hazards posed from increased traffic during the drilling phase are anticipated to be short-term and minimal for the proposed site. It is anticipated that approximately 30 to 40 trips, over the course of several days, would be required to transport the drilling rig and associated equipment to each proposed project site. Additional trips would be required to support pad/road construction and hydraulic fracturing. If commercial operations are established at the proposed well sites following drilling activities, the pump(s) would be checked daily and oil and water hauling activities would commence. Oil would be hauled using a semi tanker trailer, typically capable of hauling 140 barrels of oil per load. Traffic to and from the project site would depend upon the productivity of the wells. A 1,000 barrel per day well would require approximately seven tanker visits per day, while a 300 barrel per day well would require approximately two visits per day.[1] Produced water would also be hauled from the site using a tanker, which would typically haul 110 barrels of water per load. The number of visits would be dependent upon daily water production.[2] Established load restrictions for state and BIA roadways would be followed and haul permits would be acquired as appropriate.

---

[1] A typical Bakken oil well initially produces at a high rate and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 500 to 1,000 BOPD (barrels of oil per day) could be expected, dropping to 200 to 400 BOPD after several months.

[2] A typical Bakken oil well initially produces water at 200 bbls per day and then declines rapidly over the next several months to a more moderate rate. In the vicinity of the proposed project areas, initial rates of 200 BWPD (barrels of water per day) could be expected, dropping to 30 to 70 BWPD after several months.

3.12 Environmental Justice

Per Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, measures must be taken to avoid disproportionately high adverse impacts on minority or low-income communities.

Generally, the Three Affiliated Tribes qualify for environmental justice consideration as both a minority and low-income population. ***Table 5*** and ***Table 6*** summarize relevant data regarding minority populations in the analysis area. The population of North Dakota is predominantly Caucasian. Tribal members compromise 5.0% of North Dakota's population and 10.9% of the population of Dunn County.

According to 2006-2010 U.S. Census Bureau data, the FBIR and has lower than the statewide average of per capita income and median household income. Dunn County and the state of North Dakota both have the same unemployment rate, while FBIR's rate of unemployment was substantially greater.

3.12.1 Environmental Justice Impacts/Mitigation

No Action Alternative – The No Action Alternative would not result in disproportionately high adverse impacts on minority or low-income communities.

Proposed Action – The Proposed Action would not require relocation of homes or businesses, cause community disruptions, or cause disproportionately high adverse impacts to members of the Three Affiliated Tribes. The proposed project has not been found to pose significant impacts to any other critical element (public health and safety, water, wetlands, wildlife, soils, or vegetation) within the human environment. The proposed project is also not anticipated to result in disproportionately adverse impacts to non-Tribal minority or low-income populations.

Oil and gas development of the Bakken Formation is occurring both on and off the FBIR. Employment opportunities related to oil and gas development may lower the unemployment rate and increase the income levels for individuals living within the FBIR. In addition, the Three Affiliated Tribes and allotted owners of mineral interests may receive income from oil and gas development on the FBIR in the form of royalties, if drilling and production are successful, as well as from Tribal Employee Rights Office (TERO) taxes on construction of drilling facilities. The Proposed Action offers many positive consequences for tribal members, while recognizing the Environmental Justice concerns.

3.13 Infrastructure and Utilities

The FBIR's infrastructure consists of roads, bridges, subsurface and above ground utilities, and facilities for water, wastewater, and solid waste.

Known utilities and infrastructure within the vicinity of the proposed project includes paved (ND Highway 8) and gravel (2nd Street and other oil and gas access roads) roadways. There are no known water pipelines in the vicinity of the proposed project. Due to the presence of existing well pads in the area, oil and gas gathering lines may also be present.

3.13.1 Infrastructure and Utilities Impacts/Mitigation

No Action Alternative – The No Action Alternative would not impact infrastructure or utilities.

Proposed Action – The Proposed Action would also require construction of a new access road. The newly constructed road (approximately 11,815 feet in length) will be constructed to provide access to the Felix USA well pads. The access road would extend north from the existing 2nd Street roadway on private surface for approximately 7,345 feet, where it would then enter the FBIR, extending an additional 4,470 feet to the proposed Felix USA well pads. This access road corridor (from 2nd Street to the SW ¼ NE ¼ of Section 20, Township 146 North, Range 92 West) will also be used to access Marathon's proposed Point USA well pad (covered in a separate EA). In addition, vehicular traffic associated with construction, operation, and maintenance of the proposed action would increase the overall traffic on the local roadway network. To minimize potential impacts to the roadway conditions and traffic patterns in the area, all haul routes used would either be private roads or roads that have been approved for this type of transportation use by the local governing tribal, township, county, and/or state entities. Marathon would follow Dunn County, BIA, and North Dakota Department of Transportation rules and regulations regarding rig moves and oversize/ overweight loads on state and county roads used as haul roads. All contractors are required to permit their oversize/overweight roads through these entities. Marathon's contractors would be required to adhere to all local, county, tribal, and state regulations regarding rig moves, oversize/overweight loads, and frost restrictions.

The proposed project may also require the installation of supporting electrical lines. Electrical lines would be buried. In addition, if commercially recoverable oil and gas are discovered as a result of drilling the wells, natural gas gathering systems may need to be installed. It is expected that electric lines and other pipelines would be constructed within the proposed 130 foot ROW, or additional NEPA analysis and BIA approval would be completed prior to construction of these utilities. Other utility modifications would be identified during design and coordinated with the appropriate utility company.

Drilling operations at the proposed project site may generate produced water. In accordance with the BLM Gold Book and BLM Onshore Oil and Gas Order Number 7, produced water would be disposed of via subsurface injection, or other appropriate methods that would prevent spills or seepage. Produced water may be trucked to nearby oil fields where injection wells are available.

3.14 Cumulative Impacts

Cumulative impacts result from the incremental consequences of an action "when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Effects of an action may be minor when evaluated in an individual context, but these effects can add to other disturbances and collectively may lead to a measureable environmental change. By evaluating the impacts of the proposed action with the effects of other actions, the relative contribution of the proposed action to a projected cumulative impact can be estimated.

3.14.1 Past, Present, and Reasonably Foreseeable Actions

Oil and gas development in western North Dakota has occurred with varying intensity for the past 100 years. Gas development began in the area in 1909, and the first recorded oil well was drilled in 1920. North Dakota's oil production has boomed twice prior to the current boom; first in the 1950s, peaking in the 1960s, and again in the 1970s, peaking in the 1980s. North Dakota is currently experiencing its third

oil boom, which has already far surpassed the previous booms in magnitude. This oil boom is occurring both within and outside the FBIR. It should be noted that BIA is currently developing a programmatic EA for oil and gas development on the FBIR.

According to the NDIC, as of August 22, 2012, there were approximately 893 active and/or confidential oil and gas wells within the boundaries of the FBIR. Existing oil and gas wells within 1-mile, 5-miles, 10-miles, and 20-miles of the project area are listed in ***Table 7***. Existing oil and gas development has been occurring for several years on private lands outside the boundary of the FBIR, such that many more wells currently exist outside the Reservation, as depicted in ***Figure 20. Cumulative Impacts Map.***

Table 7. Summary of Active and Proposed Wells

Distance from Site	Number of Active or Proposed Wells	
	Within the FBIR Boundary	Outside the FBIR Boundary
1 mile radius	0	0
5 mile radius	2	36
10 mile radius	64	108
20 mile radius	330	325

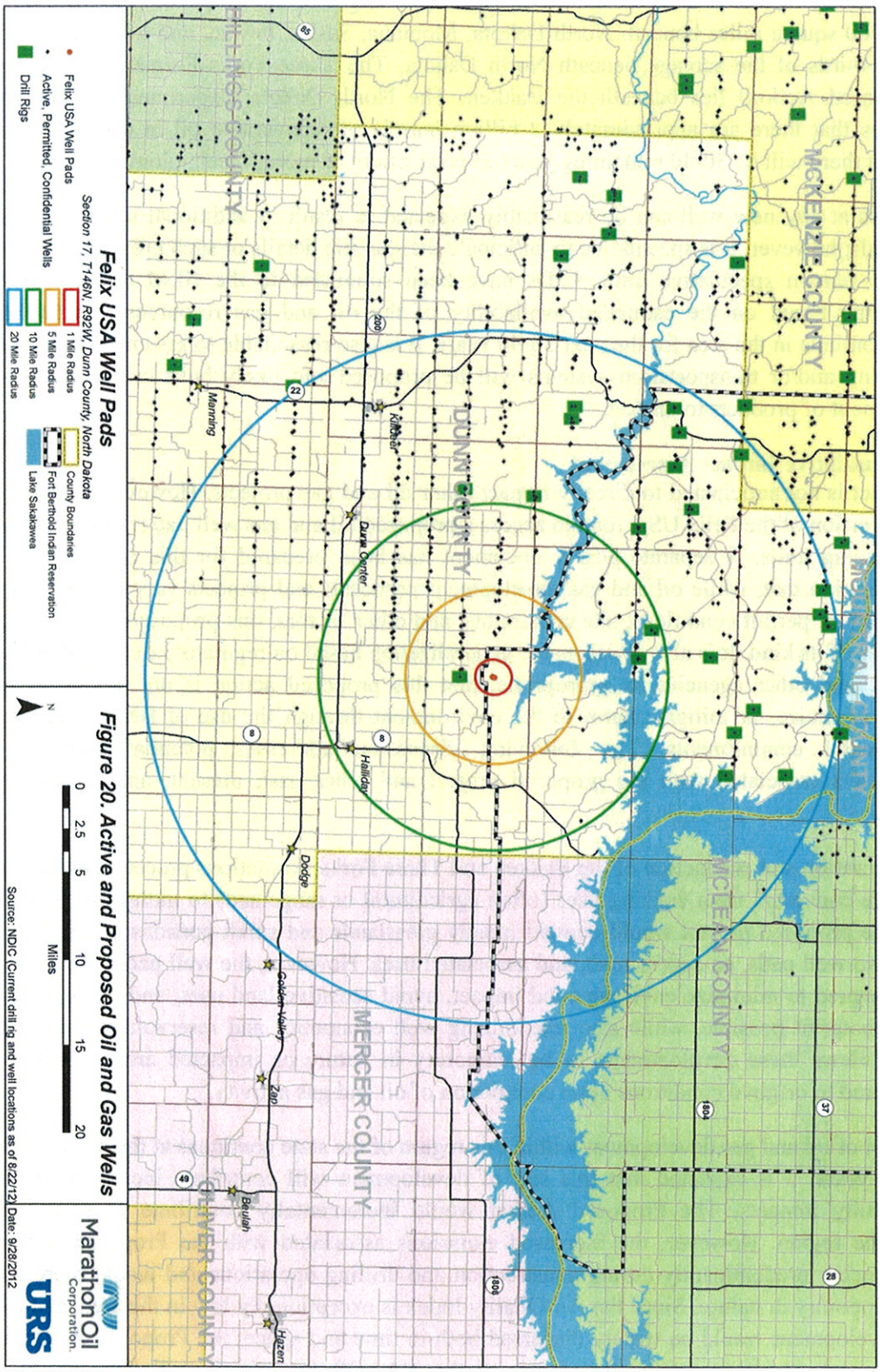


Figure 20. Cumulative Impacts Map

As mentioned previously in this EA, the Bakken Formation (the target of the Proposed Action) covers approximately 25,000 square miles beneath North Dakota, Montana, Saskatchewan, and Manitoba, with approximately two-thirds of the acreage beneath North Dakota. The Three Forks Formation (also the target of the Proposed Action) lies beneath the Bakken. The North Dakota Department of Mineral Resources estimates that there are approximately 2 billion barrels of recoverable oil in each of these Formations and that there will be 30-40 remaining years of production, or more if technology improves.

Commercial success at any new well can be reasonably expected to result in additional nearby oil/gas exploration proposals; however, it is speculative to anticipate the specific details of such proposals. While such developments remain speculative until APDs have been submitted to the BLM or BIA, it is reasonable to assume based on the estimated availability of the oil and gas resources that further development will continue in the area for the next 30-40 years. It is also reasonable to assume that natural gas and oil gathering and/or transportation systems will be proposed and likely built in the future to facilitate the movement of products to market.

3.14.2 Cumulative Impact Assessment

The proposed project is not anticipated to directly impact other oil and gas projects. However, Marathon does plan to use a portion of the Felix USA road to access a proposed oil and gas well pad (Point USA) to develop nearby spacing units. A separate NEPA document has been prepared for this action. It is a reasonable generalization that, while oil and gas development proposals and projects vary based on the developer, well location, permit conditions, site constraints, and other factors, this proposed action is not unique among others of its kind. It is also a reasonable generalization based on regulatory oversight by the BIA, BLM, NDIC, and other agencies as appropriate, that this proposed action is not unique in its attempts to avoid, minimize, or mitigate harm to the environment through the use of BMPs and site-specific environmental commitments. The following discussion addresses potential cumulative environmental impacts associated with the proposed project and other past, present, and reasonably foreseeable actions.

As oil and gas exploration and production of the Bakken and Three Forks Formations proceed, lands atop these formations are converted from existing uses (often agricultural or rangeland) to industrial, energy-producing uses. The proposed project would convert mostly grasslands and small portions of shrubland and woodland to two well pads, an access road, and associated uses. However, the well pads, and access road have been designed to minimize environmental impact, avoid sensitive land uses, and maintain the minimum impact footprint possible, while also maximizing well economics and reservoir drainage. In addition, the BIA views these developments to be temporary in nature as impacted areas would be reclaimed and restored to original conditions upon completion of oil and gas activity.

If the pace and level of oil and gas development within this region of the state continues at the current rate over the next few years, it is expected that this sort of development will contribute incrementally to cumulative air quality impacts. The Proposed Action would incrementally contribute to emissions occurring within the region. However, the increased emissions associated with the Proposed Action would, in general, occur predominantly during construction and drilling operations and would therefore be localized and temporary in nature. Since the Air Quality Index is exceptionally low in the area, and the expected future development would be widely dispersed both in time and space, the Proposed Action is not expected to impact attainment status based any of the NAAQS for criteria pollutants or other

regulated air emissions. Therefore, the contribution of the proposed project to air emissions is not expected to be significant.

The potential for cumulative impacts to threatened and endangered species comes to those listed species that may be affected by the proposed project or candidate species that may be impacted by the proposed project. The proposed project occurs within the central flyway through which whooping cranes migrate. Continual development (e.g., agriculture, oil and gas, and wind) within the central flyway has compromised whooping crane habitat both through direct impacts via conversion of potential habitat to other uses and indirect impacts due to disrupting the use of potential stopover habitat, as whooping cranes prefer isolated areas and are known to avoid large-scale development. However, the proposed project, when added to other development directly and indirectly impacting whooping cranes and their habitat, is not anticipated to significantly contribute to cumulative impacts occurring to the whooping crane population.

As previously stated, habitat for the interior least tern, pallid sturgeon, and piping plover is primarily associated with Lake Sakakawea and its shoreline. When added to other past, present, and reasonably foreseeable projects, such as oil and gas wells and water intake structures on Lake Sakakawea, the proposed project may have an indirect cumulative impact on potential habitat (Lake Sakakawea and its shoreline) for these species due to potential leaks or spills. However, due to the implementation of additional containment measures and cuttings pit parameters for the proposed project, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Furthermore, electrical lines, if installed, would be buried to prevent the potential for electrical line strikes by the interior least tern and piping plover. Therefore, it is unlikely the project would contribute to cumulative impacts to the interior least tern, pallid sturgeon, and piping plover.

The proposed project, when added to previously constructed and reasonably foreseeable oil and gas wells, would contribute to habitat loss and fragmentation associated with construction of the well pads, access road, and associated infrastructure. The North Dakota Parks and Recreation Department notes in its undated publication, "North Dakota Prairie: Our Natural Heritage" that approximately 80% of the state's native prairie has been lost to agriculture, with most of the remaining areas found in the arid west; ongoing oil and gas activity has the potential to threaten remaining native prairie resources. While many species of wildlife may continue to use the project area for breeding and feeding and continue to thrive, the activities associated with oil and gas development may displace animals from otherwise suitable habitats. As a result, wildlife may be forced to utilize marginal habitats or relocate to unaffected habitats where population density and competition increase. Consequences of such displacement and competition may include lower survival, lower reproductive success, lower recruitment, and lower carrying capacity leading ultimately to population-level impacts. In particular, species that rely on native prairie for breeding, feeding, and sheltering, such as the Dakota skipper and Sprague's pipit, may experience population impacts due to the cumulative loss of habitat through conversion and fragmentation.

The Proposed Action and other similar actions are carefully planned to avoid or minimize these impacts. Multiple components of the process used by the BIA to evaluate and approve such actions, including biological and botanical surveys, on-site assessments with representatives from multiple agencies and entities, public and agency comment periods on this EA, and the use of BMPs and site-specific environmental commitments are in place to ensure that environmental impacts associated with oil and gas development are minimized. The practice of utilizing existing roadways to the greatest extent practicable,

and sharing roadways to access other well pad developments, further minimizes impacts to wildlife habitats and prairie ecosystems. The proposed project utilizes an existing two-track trail for the majroity of the proposed access road. Further, the proposed project has been sited to avoid sensitive areas such as surface water, wetlands, and riparian areas. Reclamation activities are anticipated to minimize and mitigate disturbed habitat.

The Proposed Action, along with other oil and gas wells proposed and drilled in the Bakken and Three Forks Formations, requires infrastructure and utilities to provide needed resource inputs and accommodate outputs such as fresh water, power, site access, transportation for products to market, disposal for produced water and other waste materials. As with the Proposed Action, many other wells currently being proposed and/or built are positioned to make the best use of existing roads and to minimize the construction of new roads; however, some length of new access roads are commonly associated with new wells. The contribution of the proposed project and other projects to stress on local roadways used for hauling materials may result in a cumulative impact to local roadways. However, abiding by permitting requirements and roadway restrictions with the jurisdictional entities are anticipated to offset any cumulative impact that may result from the proposed project and other past, present, or future projects. BMPs would be implemented to minimize impacts of the proposed project.

The proposed action has been planned to avoid impacts to resources such as wetlands, floodplains, surface water, cultural resources, and threatened and endangered species. Unavoidable impacts to these or other resources would be minimized and/or mitigated in accordance with applicable regulations.

3.15 Irreversible and Irretrievable Commitment of Resources

Removal and consumption of oil and/or gas from the Bakken and Three Forks Formations would be an irreversible and irretrievable commitment of resources. Other potential resource commitments include acreage devoted to disposal of cuttings, soil lost through erosion (wind and water), cultural resources inadvertently destroyed, wildlife mortality as the result of vehicle collisions or construction activity, and energy expended during construction and operation.

3.16 Short-Term Use versus Long-Term Productivity

Short-term development activities would not significantly detract from long-term productivity and use of the project area. The area dedicated to the well pads and access road would be unavailable for livestock grazing, wildlife habitat, or other uses. However, allottees and private landowners with surface rights would be compensated for loss of productive acreage and project footprints would shrink considerably once the wells are drilled and non-working areas are reclaimed and reseeded. Successful and ongoing reclamation of the landscape would reestablish the land's use for wildlife and livestock grazing, stabilize the soil, and reduce the potential for erosion and sedimentation. The primary long-term resource loss would be the extraction of oil and gas resources from the Bakken Formation, which is the purpose of this project.

3.17 Permits

Marathon will be required to acquire the following permits prior to construction:

- Application for Permit to Drill – BLM
- Application for Permit to Drill – NDIC
- Section 10 Permit - USACE

3.18 Environmental Commitments, Mitigation, and Monitoring

The following environmental commitments have been made by Marathon Oil Company:

- Topsoil will be segregated and stored on-site to be used in the reclamation process. All disturbed areas would be re-contoured to original elevations as close as possible as part of the reclamation process.
- BMPs (including bio-logs and straw waddles placed outside of the pad near drainages and within the wooded draw located southeast of the Felix USA 8-1H well pad to act as additional containment against spills) will be implemented to minimize wind and water erosion of soil resources. Soil stockpiles will be positioned to help divert runoff around each well pad.
- The proposed well pads and access road will avoid surface waters. The proposed project will not alter stream channels or significantly change drainage patterns.
- The proposed wells will be cemented and cased to isolate potable aquifers from potentially productive hydrocarbon and disposal/injection zones.
- Wetlands and riparian areas will be avoided.
- Disturbed vegetation will be re-seeded in-kind upon completion of the project, and a noxious weed management plan would be implemented. The re-seeded site would be maintained until such time that the vegetation is consistent with surrounding undisturbed areas and the site is free of noxious weeds. Seed will be obtained from a BIA/BLM approved source.
- Marathon will control noxious weeds prior to and after construction (where present) through approved chemical or mechanical methods.
- The proposed well pads and access road will avoid impacts to cultural resources. If cultural resources are discovered during construction or operation, work shall immediately be stopped, the affected site secured, and BIA and THPO notified. In the event of a discovery, work shall not resume until written authorization to proceed has been received from the BIA.
- The access road will be located at least 100 feet away from any identified cultural resources. The boundaries of these 100-foot "exclusion zones" would be marked with high visibility fencing during construction as an extra measure to ensure that inadvertent impacts to cultural resources are avoided. In addition, during construction of the access road, well pad, and utilities, Marathon will have no disturbance closer than 100 feet from any identified cultural resources. A third party cultural monitor will be present during construction activities near any identified cultural sites on BIA lands or areas identified by THPO.
- All project workers are prohibited from collecting artifacts or disturbing cultural resources in any area under any circumstances.
- Marathon will ensure all contractors working for the company will adhere to all local, county, tribal, and state regulations and ordinances regarding rig moves, oversize/overweight loads, and frost law restrictions.
- Utility modifications will be identified during design and coordinated with the appropriate utility company.
- Disposal areas will be properly fenced to prevent human or animal access.
- An H_2S Contingency Plan will be submitted to the BLM as part of the APD
- Established load restrictions for state, county, and BIA roadways will be followed and haul permits would be acquired as appropriate.
- Suitable mufflers will be put on all internal combustion engines and certain compressor components to mitigate noise levels.
- The pumping units, tanks, and associated facilities will be painted in earth tones, based on standard colors recommended by the BLM, to allow them to better blend in with the natural background color of the surrounding landscape.

- BMPs (including bio-logs and straw waddles placed outside of the pad near drainages) will be used during construction to ensure contaminants do not move off site.
- The cuttings pits will be netted while not actively being used.
- A semi-closed mud/cuttings system with an on-site cuttings pit would be used during drilling. Drill cuttings would be stabilized before being placed in the reinforced lined cuttings pit. The reinforced lining of the cuttings pit would have a minimum thickness of 20 mil to prevent seepage and contamination of underlying soil. Any minimal fluids remaining in drill cuttings pit would be removed and disposed of in accordance with BLM and NDIC rules and regulations. All liquids from drilling would be transported off-site. The drill cuttings pit would be reclaimed to BLM and North Dakota Industrial Commission (NDIC) standards and timeframes immediately upon finishing completion operations and surface sloped, when practicable, to promote surface drainage away from the reclaimed area.
- The drill cuttings pits would be bermed to prevent surface water from entering the pit.
- Prior to its use, each cuttings pit would be fenced on the non-working side. The access side would be fenced and netted immediately following drilling and completion operations in order to prevent wildlife and livestock from accessing the pit.
- On each pad, all cut slopes would be bermed to prevent run-on.
- After well completion, the area of pad disturbance would be reduced in size, if feasible, per recommendations and consultation with the BIA and BLM.
- If a whooping crane is sighted within one-mile of the project site or associated facilities while it is under construction, all work will cease within one-mile of that part of the project and the USFWS and BIA will be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.
- All construction activities will be completed outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction will need to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests will be conducted by a qualified biologist within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to the USFWS and BIA.
- If a bald or golden eagle nest is sighted within 0.5 miles of the project area during construction, construction activities shall cease and the USFWS shall be notified for advice on how to proceed. If eagles are observed demonstrating behaviors that would indicate agitation or if Marathon's activities are causing interference with breeding, feeding, or sheltering (indicating potential take of bald or golden eagles), URS, Marathon and BIA will work in conjunction with USFWS to avoid the potential take by modifying or temporarily suspending the activity or apply for a take permit.Measures implemented during construction to avoid the taking of migratory bird species will include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining open pits and ponds that are free from oil, and netting the cuttings pit with netting that has a maximum mesh size of 1.5 inches.
- The storage tanks and heater/treaters will be surrounded by an impermeable berm that will act as primary containment to guard against possible spills. The berm would be designed to hold 100% of the capacity of the largest storage tank plus a full day's production. As an additional containment measure, Marathon will berm the entire perimeter of each well pad.
- Re-seeding of native species shall occur on stockpile areas and slope areas during reclamation.
- Electrical lines will be buried within the approved ROW to prevent the potential for bird strikes.

- Marathon will take precautions to reduce the threat for wildfires by watering down the pad sites prior to and during construction.

CHAPTER 4 – CONSULTATION AND COORDINATION

4.1 Agency Coordination

The BIA must make efforts to solicit the opinions and concerns of all stakeholders regarding the proposed project. For the purpose of this EA, a stakeholder is considered any agency, municipality, or individual person to which the Proposed Action may affect either directly or indirectly in the form of public health, environmental, or socioeconomic concerns. To initiate early communication and coordination, an early notification package to tribal, federal, state, and local agencies and other interested parties was distributed on August 6, 2012. This scoping package included a brief description of the proposed project, as well as a location map. Pursuant to Section 102(2) (D) (IV) of NEPA, a solicitation of views was requested to ensure that social, economic, and environmental effects were considered in the development of this project. In addition, a separate scoping package was sent to the USFWS. This scoping package discussed project impacts in regards to threatened, endangered, and candidate species, migratory birds, and bald and golden eagles.

At the conclusion of the 30-day comment period, ten responses were received. These comments provide valuable insight into the evaluation of potential environmental impacts. The comments were referenced and incorporated where appropriate within the environmental impact categories addressed in this document. ***The Appendix contains all project scoping materials and responses.***

4.2 Public Involvement

Provided the BIA approves this document and determines that no significant environmental impacts would result from the proposed action, a Finding of No Significant Impact (FONSI) will be issued. The FONSI is followed by a 30-day public appeal period. BIA will advertise the FONSI and public appeal period by posting notices in public locations throughout the FBIR. No construction activities may commence until the 30-day public appeal period has expired.

CHAPTER 5 – LIST OF PREPARERS

This chapter identifies the names and qualifications of the principal individuals contributing information to this EA. In accordance with Part 1502.6 of the Council on Environmental Quality regulations for implementing NEPA, the efforts of an interdisciplinary team comprising technicians and experts in various fields were required to accomplish this study.

URS prepared this EA under a contractual agreement between Marathon Oil Company and URS Corporation. A list of individuals with the primary responsibility for conducting this study, preparing the documentation, and providing technical reviews is contained in ***Table 8.***

Table 8. List of Preparers

Preparers			
Affiliation	**Name**	**Title**	**Project Role**
Bureau of Indian Affairs	Marilyn Bercier	Regional Environmental Scientist	Review of Draft EA and recommendation to Regional Director regarding FONSI or EIS
	Mark Herman	Environmental Engineer	
Marathon Oil Company	Luke Franklin	Senior HES Professional	Project development, alternatives, document review
	Darrell Nodland	Operations Specialist	Project development, alternatives, document review
URS Corporation	David Jacobson	Senior Environmental Scientist	Senior review
	Michael Thomas	Senior Environmental Project Manager	Senior review
	John Cannon	Environmental Planner	Environmental field resources surveys, impact assessment, client coordination, agency coordination, GIS mapping, principal author
	Rigden Glaab	Archaeologist	Cultural resources surveys
	Maggie Voth	GIS Specialist	GIS analysis
WH Smith and Associates	John "Ike" Dolinar	Survey Manager	Land Survey, Final Plats

CHAPTER 6 – REFERENCES

Arthur, J.D., B. Bohm, and M. Layne. 2008. *Hydraulic Fracturing Consideration for Natural Gas Wells of the Marcellus Shale.* Cincinnati, Ohio: Ground Water Protection Council.

Beitisch, R. (2010, April 30). Three Forks formation to yield lots of oil in North Dakota. *The Bismarck Tribune.* Retrieved from http://www.bismarcktribune.com/news/state-and-regional/article_368dcb38-53ef-11df-a6c8-001cc4c03286.html

Bryce, S., J.M. Omermik, D.E. Pater, M. Ulmer, J. Schaar, J. Freeouf, R. Johnson, P. Kuck, and S.H. Azevedo. 1998. Ecoregions of North Dakota and South Dakota. Jamestown, North Dakota: Northern Prairie Wildlife Research Center Online. Available online at http://www.npwrc.usgs.gov/resource/habitat/ndsdeco/nodak.htm

Bureau of Land Management (BLM) 2009. Air Resources BMPs – Best Management Practices for Fluid Minerals. Available online at http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/technical_information.html

Coyle, A.M. (2010). Golden eagle nests [Updated Data File]. Retrieved from North Dakota Game and Fish.

Fort Berthold Housing Authority. 2008. Mandan, Hidatsa, Arikara Website. Available online at http://www.mhanation.com/main/history_economic_social.html. Accessed November 2009.

Glaab, Rigden
(2012) A Class III Cultural Resources Inventory of the Felix USA and Point USA Well Pads and Access Road in Dunn County, North Dakota. URS Corporation for Marathon Oil Corporation, Dickinson, ND.

Guadalupe-Blanco River Authority. (2009, April 29). *Major research gives insight into the needs of whooping cranes.* Retrieved from http://www.gbra.org/News/2009042901.aspx

High Plains Regional Climate Center. (2012). Ten year climate summary. Retrieved at: http://www.hprcc.unl.edu/stations/index.php?address=dunn+center&distance=20&searchby=Search+By+Location&begin_year=2007&end_year=2007&action=search

Johnson, S. (2010, February). Nesting in numbers: active bald eagles nests up in North Dakota. *North Dakota Outdoors*, 14–17. Retrieved from http://gf.nd.gov/multimedia/ndoutdoors/issues/2010/feb/docs/nest-numbers.pdf

Klausing, R.L. 1979. Groundwater Resources of Dunn County, North Dakota. Bulletin 68 – Part III. North Dakota Geological Survey.

National Geographic. (n.d.). *Golden eagle.* Retrieved September 8, 2010, from http://animals.nationalgeographic.com/animals/birds/golden-eagle.html

National Park Service. 2010. Visibility Protection. Available online at http://www.nature.nps.gov/air/regs/visibility.cfn. Accessed November 10, 2011.

Natural Resources Conservation Service (NRCS). 2012. Web Soil Survey. Soil Survey Staff, NRCS, United States Department of Agriculture. Available online at http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

North Dakota Department of Agriculture. (n.d.). *Noxious weeds team.* Retrieved November 15, 2010, from http://www.agdepartment.com/Programs/Plant/NoxiousWeeds.html

North Dakota Department of Agriculture. *County and City Listed Noxious Weeds.* Revised February, 2012. Retrieved from http://www.nd.gov/ndda/files/resource/CountyandCityListedNoxiousWeedsFeb2012.pdf

North Dakota Department of Health. (2011, November). *Annual Report: North Dakota Air Quality Monitoring Data Summary 2010.* Bismarck, ND: North Dakota Department of Health

North Dakota Department of Health. (2010, June). *Annual Report: North Dakota Air Quality Monitoring Data Summary 2009.* Bismarck, ND: North Dakota Department of Health

North Dakota Game and Fish Department. (2011, May) *Potential Impacts of Oil and Gas Development on Select North Dakota Natural Resources: A Report to the Director.* Retrieved at: http://gf.nd.gov/sites/default/files/publications/specialty-publications/directors-report-oil-gas-may-2011.pdf

North Dakota Geological Survey. (1997) Surface Geology Vector data file of North Dakota. Retrieved from : http://web.apps.state.nd.us/hubdataportal/srv/en/main.home

North Dakota Industrial Commission (September 19, 2012) *Director's Cut.* https://www.dmr.nd.gov/oilgas/directorscut/directorscut-2012-09-19.pdf

North Dakota Parks and Recreation Department. (n.d.). *North Dakota prairie: our natural heritage.* North Dakota Parks and Recreation Department, U.S. Department of the Interior, U.S. Fish and Wildlife Service. Jamestown, ND: Northern Prairie Wildlife Research Center Online. Retrieved from http://www.npwrc.usgs.gov/resource/habitat/heritage/index.htm

North Dakota State Water Commission. 2012. NDSW MapService. Available online at http://mapservice.swc.nd.gov/

North Dakota State Water Commission. (2010). *Query water permits* [Data file]. Retrieved November 19, 2010 from http://www.swc.state.nd.us/4dlink7/4dcgi/permitsearchform/ Permits

North Dakota State Water Commission and U.S. Geological Survey. (2010a). *USGS digital elevation models for North Dakota* [Data file]. Retrieved from http://www.nd.gov/gis/

North Dakota State Water Commission and U.S. Geological Survey. (2010b) *USGS hydrography dataset for North Dakota* [Data file]. Retrieved from http://nhd.usgs.gov/

Three Affiliated Tribes. (2009, August 21). Fort Berthold Reservation: Home of the Three Affiliated Tribes. *Fargo Forum*. Retrieved from http://legacy.inforum.com/specials/DyingTongues/graphics/demographics.pdf

United States. (2007, May 30). *Whooping crane recovery plan revised.* Retrieved from http://www.fws.gov/news/NewsReleases/showNews.cfm?newsId= DD912DFC-CAC2-6024-897401985ACEFFAB

U.S. Department of Agriculture – Natural Resource Conservation Service. (2006). National Land Cover Dataset. Retrieved at: http://www.mrlc.gov/index.asp

U.S. Department of Agriculture. (2006). *Soil survey for Dunn County, North Dakota.* U.S. Department of Agriculture, Soil Conservation Service. U.S. Government Printing Office

U.S. Department of Agriculture. (2010). *Spatial and tabular data of the soil survey for Dunn County, North Dakota.* Retrieved from http://soildatamartnrcs.usda.gov/

U.S. Department of the Interior and U.S. Department of Agriculture. (2007) Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071/REV 07. Bureau of Land Management. Denver, Colorado. 84pp.

U.S. Environmental Protection Agency (EPA). 2004. *Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs Study.* Available online at http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_coalbedmethanestudy.cfm

U.S. Environmental Protection Agency (EPA). 1999. Emission Inventory Improvement, Volume II. Chapter 10. Preferred and Alternative Methods for Estimating Air Emissions from Oil and Gas Field Production and Processing Operations. Available online at http://www.epa.gov/ttnchiel/eiip/techreport/volume02/ii10.pdf.

U.S. Environmental Protection Agency (EPA). 2010. National Ambient Air Quality Standards (NAAQS). Available online at http://epa.gov/air/criteria.html.

U.S. Fish & Wildlife Service. (n.d.). *Piping plover.* Retrieved August 14, 2012, from http://www.fws.gov/mountainprairie/ species/birds/pipingplover/

U.S. Fish & Wildlife Service. (2007, June). *Bald eagle fact sheet: Natural history, ecology, and history of recovery.* Retrieved August 14, 2012, from http://www.fws.gov/midwest/eagle/recovery/biologue.html

U.S. Fish & Wildlife Service. (2008, December 18). *Least tern* (Sterna antillarum). Retrieved August 14, 2012, from http://www.fws.gov/northdakotafieldoffice/endspecies/species/least_tern.htm

U.S. Fish & Wildlife Service. (2010, June 1). *Gray wolves in the Northern Rocky Mountains.* Retrieved August 14, 2012, from http://www.fws.gov/mountain-prairie/species/mammals/wolf/

U.S. Fish and Wildlife Service. (2010, September). *Endangered and threatened wildlife and plants; 12-month finding on a petition to list Sprague's pipit as endangered or threatened throughout its range*. Federal Register. Vol. 75, No. 178.

U.S. Fish & Wildlife Service. (2010, September 14). *Least tern (interior population)*. Retrieved August 13, 2012, from http://www.fws.gov/midwest/endangered/birds/tern.html

U.S. Fish & Wildlife Service. (2010, September 22). *Fact sheet: pallid sturgeon (*Scaphiryhynchus albus*)*. Retrieved August 14, 2012, from http://www.fws.gov/midwest/endangered/fishes/palld_fc.html

U.S. Fish & Wildlife Service. (2010, October 6). *County occurrence of endangered, threatened, and candidate species and designated critical habitat in North Dakota*. Retrieved August 14, 2012, from http://www.fws.gov/northdakotafieldoffice/county_list.htm

U.S. Geological Survey Northern Prairie Wildlife Research Center. (2004, 1 January). *North Dakota GAP bird potential habitat maps* [Data file]. Retrieved July 19, 2012, from http://www.nd.gov/gis/

U.S. Geological Survey Northern Prairie Wildlife Research Center. (2006a, 3 August). *The cranes status survey and conservation action plan whooping crane (*Grus americana*)*. Retrieved August 13, 2012, from http://www.npwrc.usgs.gov/resource/ birds/cranes/grusamer.htm

U.S. Geological Survey Northern Prairie Wildlife Research Center. (2006, 3 August). *Hawks, eagles, and falcons of North Dakota*. Retrieved August 13, 2012, from http://www.npwrc.usgs.gov/ resource/birds/hawks/intro.htm

U.S. Geological Survey Northern Prairie Wildlife Research Center. (2006, 24 August). *Ecoregions of North Dakota and South Dakota*. Retrieved from http://www.npwrc.usgs.gov/resource/habitat/ndsdeco/index.htm

Wyoming Game and Fish Department. (2010, March). *Recommendations for development of oil and gas resources within important wildlife habitats*. Version 5.0. Retrieved from http://gf.state.wy.us/downloads/pdf/og.pdf

Appendix

Solicitation of Views – Mailing List

SOV MASTER LIST

Save as new file for each project and edit accordingly with project specific contacts

CTitle	First	Last	Title	Department	Agency	Address	City	State	Zip
Mr.	Weldon	Loudermilk	Regional Director		Bureau of Indian Affairs	115 4th Ave. SE	Aberdeen	SD	57401
Ms.	Marilyn	Bercier	Regional Environmental Scientist	Division of Environmental, Safety and Cultural Resource Management	Bureau of Indian Affairs	115 4th Ave. SE, Suite 400	Aberdeen	SD	57401
Mr.	Chris	McLaughlin	Environmental Protection Specialist		Bureau of Indian Affairs	202 Main Street	New Town	ND	58763
Mr.	Jeffrey	Desiarlais	Environmental Protection Specialist		Bureau of Indian Affairs	202 Main Street	New Town	ND	58763
Mr.	Richard	Nelson	Chief, Resource Management	Dakotas Area Office	Bureau of Reclamation	PO Box 1017	Bismarck	ND	58502-1017
Mr.	Steve	Obenauer	Manager	Bismarck Airports District Office	Federal Aviation Administration	2301 University Drive, Bldg 23B	Bismarck	ND	58504
Mr.	Dan	Cimarosti	Manager	ND Regulatory Office	US Army Corps of Engineers	1513 S. 12th St.	Bismarck	ND	58504
Mr.	Charles	Sorensen	Natural Resource Specialist	Riverdale Field Office	US Army Corps of Engineers	PO Box 527	Riverdale	ND	58565
Sir		*or Madam*	Attn: CENWO-PM-AC	Omaha District, Env. Resources & MRRP Plan Formulation	US Army Corps of Engineers	1616 Capitol Ave	Omaha	NE	68102
Ms.	Mary	Podoll	State Conservationist	NRCS	US Department of Agriculture	220 East Rosser Ave	Bismarck	ND	58501
Mr.	Gerald	Paulson	Director, Transmission Linest Substations	ND Maintenance Office	US Department of Energy Western Area Power Admin.	PO Box 1173	Bismarck	ND	58502-1173
Mr.	Dave	Kyner			FEMA, Region VIII	Denver Federal Center, Building 71	Denver	CO	80225
Mr.	Larry	Svoboda	Director	NEPA Program, Region 8	US Environment Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
Mr.	Jeffrey	Towner	Field Supervisor	ND Field Office	US Fish & Wildlife Service	3425 Miriam Ave.	Bismarck	ND	58501
Mr.	Nick	Chevance	Regional Environmental Coordinator	Midwest Region	National Park Service	601 Riverfront Drive	Omaha	NE	68102
Mr.	Scott	Davis	Executive Director		Indian Affairs Commission	600 E. Blvd. Ave. 1st Floor, Judicial Wing, Rm 117	Bismarck	ND	58505-0300
Mr.	Greg	Wiche	Director	Water Resources Division	US Geological Survey	821 E. Interstate Ave.	Bismarck	ND	58501
Mr.	Edward	Murphy	State Geologist		ND Geological Survey	600 East Boulevard Ave	Bismarck	ND	58505
Mr.	L. David	Glatt	Chief	Environmental Health Section Gold Seal Center	ND Department of Health	918 E. Divide Ave., 4th floor	Bismarck	ND	58501-1947
Mr.	Steve	Dyke	Conservation Section Supervisor		ND Game & Fish Department	100 Bismarck Expressway	Bismarck	ND	58501-5095
Mr.	Merl	Paaverud	Director		State Historical Society of North Dakota	612 East Boulevard Ave	Bismarck	ND	58505
Mr.	Mark	Zimmerman	Director		ND Parks & Recreation Dept.	1600 E. Century Ave., Suite 3	Bismarck	ND	58503-0649
Mr.	Todd	Sando	State Engineer		ND State Water Commission	900 E. Blvd. Ave.	Bismarck	ND	58505-0850
Mr.	Bill	Boyd	Construction Manager		Midcontinent Cable Company	719 Memorial Hwy	Bismarck	ND	58601
Mr.	Doug	Dixon	General Manager	Badlands Region	Montana Dakota Utilities	PO Box 1406	Williston	ND	58802-1406
Mr.	George	Berg	Manager		NoDak Electric Coop., Inc.	Box 13000	Grand Forks	ND	58208-3000
Mr.	Ken	Miller		Land Department	Northern Border Pipeline Company	13710 FNB Parkway	Omaha	NE	68154-5200
Ms.	Mary	Massad	Manager/CEO		Southwest Water Authority	4665 2nd St. W.	Dickinson	ND	58601
Mr.	David C.	Schelkoph	CEO		West Plains Electric Coop., Inc.	PO Box 1038	Dickinson	ND	58602-1038
Sir		*or Madam*	Manager		Xcel Energy	PO Box 2747	Fargo	ND	58108-2747
Sir		*or Madam*	Manager of Engineering Services		McKenzie Electric Cooperative	PO Box 649	Watford City	ND	58854
Sir		*or Madam*	Manager of Engineering Services		McLean Electric Cooperative	PO Box 399	Garrison	ND	58540
Sir		*or Madam*	Manager		Mountrail-Williams Electric Cooperative	355 Main St	New Town	ND	58763
Sir		*or Madam*	District Engineer	Dickinson District	ND Department of Transportation	1700 Third Ave West, Suite 101	Dickinson	ND	58601
Mr.	Lonny	Bagley	Field Office Manager	North Dakota Field Office	Bureau of Land Management	99 23rd Ave W, Suite A	Dickinson	ND	58601
Mr.	Mike	Nash	Assistant Field Office Manager	Division on Mineral Resources	Bureau of Land Management	99 23rd Ave W, Suite A	Dickinson	ND	58601
Mr.	Robert	Shepard	Tribal Chairman		Sisseton-Wahpeton Sioux Tribe	PO Box 509	Sisseton	SD	57262-0267
Mr.	Roger	Yankton	Tribal Chairman	Ft. Totten Tribal Business Office	Spirit Lake Sioux Tribe	PO Box 359	Ft. Totten	ND	58325
Mr.	Charles	Murphy	Tribal Chairman		Standing Rock Sioux Tribe	PO Box D	Fort Yates	ND	58538
Mr.	Marvin	Danks	Director		Fort Berthold Rural Water District	404 Frontage Road	New Town	ND	58763
Mr.	Elgin	Crows Breast	Tribal Historic Preservation Officer		Three Affiliated Tribes	HC3 Box 2	New Town	ND	58763
Mr.	Tex	Hall	Tribal Chairman		Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Merle	St. Claire	Tribal Chairman		Turtle Mountain Chippewa	PO Box 900	Belcourt	ND	58316-0900
Mr.	Damon	Williams	Tribal Attorney		Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Fred	Fox	Director	Energy Department	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Ms.	V. Judy	Brugh	Representative	Four Bears Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Arnold	Strahs	Representative	Mandaree Segment	Three Affiliated Tribes	PO Box 665	Mandaree	ND	58757
Mr.	Scott	Eagle	Representative	NewTown/Little Shell Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Mervin	Packineau	Chairman	Parshall/Lucky Mound Segment	Three Affiliated Tribes	PO Box 468	Parshall	ND	58770
Mr.	Frank	White Calfe	Representative	White Shield Segment	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Barry	Benson	Representative	Twin Buttes Segment	Three Affiliated Tribes	70879 E Ave NW	Halliday	ND	58636
Mr.	Fred	Poitra		Fish and Wildlife Division	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Sir		*or Madam*	Director	Natural Resources Division	Three Affiliated Tribes	404 Frontage Road	New Town	ND	58763
Mr.	Roger	Hovda	Operations Manager		Reservation Telephone Cooperative	PO Box 68	Parshall	ND	58770-0068
Mr.	Glenn	Eckelberg	Chairperson	County Commission	Dunn County	205 Owens Street	Manning	ND	58642
Mr.	Reinhard	Hauck	Auditor		Dunn County	205 Owens Street	Manning	ND	58642
Mr.	Darrell	Nodland	Operations Specialist		Marathon Oil Company	3172 Highway 22 North	Dickinson	ND	58601

Solicitation of Views – General Agency Letter

URS

1000 East Calgary Avenue, Suite 1
Bismarck, ND 58503
Phone: (701) 221-4140
Fax: (701) 221-4155

August 6, 2012

<<Name>>
<<Title>>
<<Organization>>
<<Address>>
<<City>> <<State>> <<Zip Code>>

Re: Marathon Oil Company
Four Proposed Oil and Gas Multiple-Well Pads and Production Facility Pad
Fort Berthold Indian Reservation
Dunn County, North Dakota

Dear Interested Party:

On behalf of Marathon Oil Company (Marathon), URS Corporation (URS) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM regarding the development of four well pads and a production facility pad supporting the drilling and completion of up to 16 oil and gas wells located in Dunn County, North Dakota on the Fort Berthold Indian Reservation.

The proposed action would advance the exploration and production of oil and gas resources from the Bakken and Three Forks Formations. The proposed surface locations for the four well pads and production facility pad are summarized below, and illustrated in the enclosed ***Project Location Map***.

- **Felix USA 8-1TFH** – NW ¼ NE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M.
- **Felix USA 8-1H** – NW ¼ NE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M.
- **Jim Voigt USA 7-1TFH** – SE ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M.
- **Jim Voigt USA 7-1H** – NW ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M.
- **Jim Voigt USA Production Facility Pad** – SW ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M.

URS

Each of the four well pads will initially support a single oil and gas well and, based on the evaluation of each well, potentially three additional wells on each pad. To minimize the footprint of the Jim Voigt USA well pads, a production facility pad will be constructed south of the well pads to house the central tank battery, heater/treater, and flare pit. Oil and gas pipelines will be constructed within the roadway corridors connecting the production facility pad to the Jim Voigt USA well pads. The layout of the Felix USA well pads will be in a tiered design to minimize disturbances to the topography of the site. An access road, approximately 200 feet in length will connect the Felix USA pads.

The well pads and production facility pad have been positioned to utilize existing roadways and two-track trails for access to the extent possible. A new access road (approximately 11,815 feet in length) will be constructed to provide access to the Felix USA well pads. The access road will extend north from the existing 2nd Street roadway on private surface for approximately 7,345 feet, where it would then enter the Fort Berthold Indian Reservation, extending an additional 4,470 feet to the proposed Felix USA well pads. This access road corridor (from 2nd Street to the SW ¼ NE ¼ of Section 20, Township 146 North, Range 92 West) will also be used to access Marathon's proposed Point USA well pad. In addition, a 200 foot access road will be constructed to connect the Felix USA pads. Development of the Felix USA access road would also include a 150 foot wide utility corridor centered on the access road centerline. In addition, a new access road will be constructed to provide access into the Jim Voigt USA pad area. The new access road will extend east on private surface from an existing Hunt Oil Co. road located along the section line between Sections 13 and 14, Township 146 North, Range 93 West, 5th P.M. for approximately 7,850 feet, where it would then enter the Fort Berthold Indian Reservation. The access road would extend an additional 450 feet to the northeast to the proposed Jim Voigt USA Production Facility Pad. From the production facility pad, two additional access road segments will be constructed to access each of the Jim Voigt USA pads (1,600 feet north to the Jim Voigt USA 7-1H pad, and 860 feet northeast to the Jim Voigt USA 7-1TFH pad). Development of the Jim Voigt USA access roads would also include a 130 foot wide utility corridor centered on the access road centerline. Construction of the proposed project is scheduled to begin in Fall 2012.

To ensure that all social, economic, and environmental issues are analyzed accurately, we solicit your views and comments on the proposed action. We are interested in existing or proposed developments that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee, or otherwise value that might be adversely impacted.

Please provide your comments by **September 6, 2012** so that they may be addressed in the EA document. If you would like further information regarding this project, please contact me at (701) 221-4149. Questions for the BIA can be directed to Marilyn Bercier, Regional Environmental Scientist, or Mark Herman, Environmental Engineer, at (605) 226-7656. Thank you for your cooperation.

Sincerely,
URS Corporation

John Cannon
Environmental Planner

Enclosure (Project Location Map)

Solicitation of Views – USFWS Letter

URS

1000 East Calgary Avenue, Suite 1
Bismarck, ND 58503
Phone: (701) 221-4140
Fax: (701) 221-4155

August 7, 2012

Mr. Jeffrey Towner
U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, North Dakota 58501-7926

Re: Marathon Oil Company
Four Proposed Oil and Gas Multiple-Well Pads and Production Facility Pad
Fort Berthold Indian Reservation
Dunn County, North Dakota

Dear Mr. Towner:

On behalf of Marathon Oil Company (Marathon), URS Corporation (URS) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM). The proposed action includes approval by the BIA and BLM regarding the development of four well pads and a production facility pad supporting the drilling and completion of up to 16 oil and gas wells located in Dunn County, North Dakota on the Fort Berthold Indian Reservation.

The proposed action would advance the exploration and production of oil and gas resources from the Bakken and Three Forks Formations. The proposed surface locations for the four well pads and production facility pad are summarized below, and illustrated in the enclosed ***Project Location Map***.

- **Felix USA 8-1TFH** – NW ¼ NE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M.
- **Felix USA 8-1H** – NW ¼ NE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M.
- **Jim Voigt USA 7-1TFH** – SE ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M.
- **Jim Voigt USA 7-1H** – NW ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M.

- **Jim Voigt USA Production Facility Pad** – SW ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M.

Each of the four well pads will initially support a single oil and gas well and, based on the evaluation of each well, potentially three additional wells on each pad. To minimize the footprint of the Jim Voigt USA well pads, a production facility pad will be constructed south of the well pads to house the central tank battery, heater/treater, and flare pit. Oil and gas pipelines will be constructed within the roadway corridors connecting the production facility pad to the Jim Voigt USA well pads. The layout of the Felix USA well pads will be in a tiered design to minimize disturbances to the topography of the site. An access road, approximately 200 feet in length will connect the Felix USA pads.

The well pads and production facility pad have been positioned to utilize existing roadways and two-track trails for access to the extent possible. A new access road (approximately 11,815 feet in length) will be constructed to provide access to the Felix USA well pads. The access road will extend north from the existing 2nd Street roadway on private surface for approximately 7,345 feet, where it would then enter the Fort Berthold Indian Reservation, extending an additional 4,470 feet to the proposed Felix USA well pads. This access road corridor (from 2nd Street to the SW ¼ NE ¼ of Section 20, Township 146 North, Range 92 West) will also be used to access Marathon's proposed Point USA well pad. In addition, a 200 foot access road will be constructed to connect the Felix USA pads. Development of the Felix USA access road would also include a 130 foot wide utility corridor (to accommodate for oil and gas pipelines, electric, etc.). In addition, a new access road will be constructed to provide access into the Jim Voigt USA pad area. The new access road will extend east on private surface from an existing Hunt Oil Co. road located along the section line between Sections 13 and 14, Township 146 North, Range 93 West, 5th P.M. for approximately 7,850 feet, where it would then enter the Fort Berthold Indian Reservation. The access road would extend an additional 450 feet to the northeast to the proposed Jim Voigt USA Production Facility Pad. From the production facility pad, two additional access road segments will be constructed to access each of the Jim Voigt USA pads (1,600 feet north to the Jim Voigt USA 7-1H pad, and 860 feet northeast to the Jim Voigt USA 7-1TFH pad). Development of the Jim Voigt USA access roads would also include a 130 foot wide utility corridor. Construction of the proposed project is scheduled to begin in Fall 2012.

Seven preliminary site assessment surveys were conducted prior to the BIA EA on-site assessment to evaluate the development suitability of the well pads, production facility pad, and access road locations with regards to botanical, biological, migratory bird, threatened and endangered species, eagle, soils, and water resources. The surveys were conducted on May 24-25, June 12, July 5, and July 25-27, 2012. An approximate 22-acre study area surrounding both Felix USA wells, three approximate 10-acre study areas on each Jim Voigt USA pad, and a 200-foot wide access road/utility corridor was evaluated for the project area. ***Please refer to the enclosed Study Area Map.*** Per guidance from the United States Fish and Wildlife Service (USFWS), a ½-mile wide buffer around all areas of project disturbance (including disturbance areas on private surface) was used to evaluate the presence of eagles and eagle nests. Resources were evaluated using visual inspection with the aid of binoculars and pedestrian transects across the site. ***Please refer to the enclosed Eagle Habitat and Nest Locations map.***

The BIA-facilitated EA on-site assessment of the proposed well pads, production facility pad, and access roads was conducted on July 30, 2012. The BIA Environmental Protection Specialist and representatives from Marathon, William H. Smith and Associates, the Tribal Historic Preservation Office (THPO), Three Affiliated Tribes Fish and Wildlife Department, and URS were present. During the on-site assessment, construction suitability with respect to topography, topsoil stockpiling, surface drainage, erosion control, sloping, and other surface issues were considered. The following adjustments were made in the field with regards to pad and access road locations:

- Per BIA's request, the Felix USA access road near the Felix USA 8-1H pad was shifted to the east approximately 35 feet to avoid cutting into a steep slope.
- Per BIA's request, Marathon agreed to adjust the cut slope on the south end of the Felix USA 8-1TFH from 2:1 to a 1.5:1 slope to pull the disturbance area in from the adjacent clay butte. If Marathon only develops a single well from the pad, then a 2:1 slope on the south end will be sufficient.
- The southeast corner of the Jim Voigt USA 7-TFH pad was shifted to the south to avoid the drainage located east-northeast of the pad. The northwest corner was also rounded to avoid impacts to a nearby drainage.
- The entire Jim Voigt USA 7-1H well pad was shifted to the south approximately 400 feet to avoid a potentially unstable bluff. In addition, the southwest corner was rounded to minimize encroachment on an aspen grove.

The pad and access road adjustments were incorporated into the finalized design, and the BIA gathered site-specific information necessary to develop mitigation measures and best management practices (BMPs) to be incorporated in the final application for permit to drill (APD). Those present at the on-site assessment agreed that the adjusted pad and access road locations are positioned in areas that would minimize environmental impacts while maximizing development of the spacing units. In addition, Marathon has cooperatively developed environmental commitments with BIA that will further minimize harm to the environment. BMPs and other environmental commitments agreed to by Marathon to avoid, minimize, and/or mitigate environmental impacts are described at the end of this letter.

Topography

The proposed project is situated in the Northwestern Great Plains region of North Dakota. This area is characterized by semiarid rolling plains of shale, siltstone, and sandstone punctuated by occasional buttes and badlands. Native grasses persist in areas of broken topography, but they have largely been replaced throughout the region by crops well suited to erratic precipitation patterns.

The Felix USA and Jim Voigt USA access roads begin in the Missouri Plateau ecoregion. This is an area that was largely unaffected by glaciation and retains its original soils and complex stream drainage pattern. Crops such as spring wheat, alfalfa, oats and barley, as well as short grass prairie suitable for cattle grazing dominate the landscape. Extending towards the pads, both access roads descend into the Little Missouri Badlands ecoregion. This highly eroded landscape is characterized by clay buttes and ephemeral, wooded drainages that cut the landscape as they descend to the Little Missouri River. Vegetation is sparse and slumping is prevalent in this

landscape. Cattle grazing is the dominant land use. The Felix USA pads are situated on an upland bluff and have been tiered to preserve the topography of the landscape. ***Please refer to Photograph 1***. The Jim Voigt USA pads are situated on hills of open rangeland, set back from the main bluffs that descend to the lowlands of the Little Missouri Badlands. ***Please refer to Photograph 2.***

Photograph 1. Site overview of Felix USA 8-1TFH well pad, View North.

Botanical Resources

The Felix USA study area (consisting of both Felix USA pads and the access road corridor) largely consisted of native and non-native upland grasses and shrubs. Deciduous trees occur regularly in low lying areas, along hill slopes, and in intermittent drainages. Cattle grazing is evident along several areas of the access road corridor as well as the proposed well pad areas. Dominant plant species observed throughout the Felix USA study area include: prairie coneflower (*Ratibida columnifera*), purple coneflower (*Echinacea angustifolia*), silver sagebrush (*Artemisia cana*), western snowberry (*Symphoricarpos occidentalis*), little bluestem (*Schizachyrium scoparium*), silverleaf scurfpea (*Pediomelum argophyllum*), prairie sandreed (*Calamovilfa longifolia*), green needlegrass (*Stipa viridula*), sideoats grama (*Bouteloua curtipendula*), broom snakeweed (*Gutierrezia sarothrae*), stiff goldenrod (*Solidago rigida*) and rubber rabbitbrush (*Chrysothamnus nauseosus*). ***Please refer to Photograph 3.*** Bur oak (*Quercus macrocarpa*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), plains

cottonwood (*Populus deltoides*), quaking aspen (*Populus tremuloides*), chokecherry (*Prunus virginiana*), skunkbrush (*Rhus aromatic*) and silver buffaloberry (*Shepherdia argentea*) were all observed in wooded draws adjacent to and within the Felix USA study area.

Photograph 2. Site overview of Jim Voigt USA Production Facility Pad, View Northeast.

The Jim Voigt USA study area (consisting of all three Jim Voigt USA pads) also consisted largely of native and non-native upland grasses and shrubs. Similar to the Felix USA area, deciduous trees occur regularly in low lying areas, along hill slopes, and in intermittent drainages. Cattle grazing is evident along the western portion of the access road corridor on private surface, as well as the proposed pad areas. Dominant plant species observed throughout the Jim Voigt USA study area include: prairie coneflower (*Ratibida columnifera*), purple coneflower (*Echinacea angustifolia*), western snowberry (*Symphoricarpos occidentalis*), little bluestem (*Schizachyrium scoparium*), cudweed sagewort (*Artemisia ludoviciana*), prairie sandreed (*Calamovilfa longifolia*), green needlegrass (*Stipa viridula*), sideoats grama (*Bouteloua curtipendula*), stiff goldenrod (*Solidago rigida*), curlycup gumweed (*Grindelia squarrosa*) and rubber rabbitbrush (*Chrysothamnus nauseosus*). ***Please refer to Photograph 3.*** Bur oak (*Quercus macrocarpa*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), plains cottonwood (*Populus deltoides*), quaking aspen (*Populus tremuloides*), chokecherry (*Prunus virginiana*), skunkbrush (*Rhus aromatic*), silver buffaloberry (*Shepherdia argentea*), poison ivy

(*Toxicodendron rydbergii*), clover (*Trifolium* spp.), and red raspberry (*Rubus idaeus*) were all observed in wooded draws adjacent to and within the Jim Voigt USA study area.

A small wetland was observed along the western portion of the Jim Voigt USA access road. Small, dense communities of leafy spurge (*Euphorbia esula*) and scattered single occurrences of Canada thistle (*Cirsium arvense*), both of which are state listed noxious weeds in North Dakota, were observed along the access road corridors and throughout each study area. There are no threatened or endangered plant species listed for Dunn County, North Dakota.

Photograph 3. Typical well pad vegetation at Felix USA and Jim Voigt USA pads.

Biological Resources

The Felix USA and Jim Voigt USA study areas provide suitable habitat for several game and non-game wildlife species. The grasslands, wooded draws, and shrubs located within the project study areas provide cover for species such as whitetail deer, turkey, coyote, badger, sharp-tailed grouse, and non-game grassland and woodland birds. Badland ecotypes, like those observed around the northern portions of the Felix USA and Jim Voigt USA study areas, provide excellent primary habitat for mule deer, mountain lion, and bobcat. During the field resource surveys, turkey vultures (several), sharp-tailed grouse (several), whitetail deer (3), grasshopper sparrow (several), crows (several), golden eagles (2), mourning doves (several), a meadow vole, a

bullsnake, and a northern harrier were observed within the vicinity of the project areas. ***Please refer to Photograph 4.*** Several cattle were also observed grazing.

Photograph 4. Bullsnake observed on Jim Voigt USA 7-1H proposed well pad location.

The noise, movements, lights and other actions associated with drilling activities are expected to temporarily deter wildlife from entering the area. Additionally, the cuttings pits would be used exclusively for the storage of solid materials with minimal free fluid present. It is expected that the absence of fluid within the cuttings pits will reduce the attractiveness to wildlife species. In addition, state and federal approved nets will be utilized around the reserve pits immediately after the drill rig leaves a pad location. These nets will remain in place with proper maintenance until the closure of the reserve pits.

Further, design considerations in regards to the pads and the access roads will be utilized to minimize potential habitat degradation. Each pad has been positioned to avoid wooded draws to the extent possible. In several instances, Marathon will round pad corners to further avoid drainages. Existing two-track trails were also utilized where possible to minimize new disturbance. Other unique habitats such as clay buttes, hillside shrubs, and surface drainages have been avoided where feasible. Storage tanks and the heater/treater will surrounded by an impermeable berm that will act as a primary containment to guard against possible spills. The berm would be designed to hold 100% of the capacity of the largest storage tank plus a full day's

production. In addition, each pad (all four pads and the production facility pad) will have a full perimeter berm that would act as additional containment to guard against possible spills. Marathon will also place excess embankment and topsoil stockpiles on and around each pad in such a manner that will provide additional protection from migration of fluids, should they escape from a pad. Other BMPs will be utilized to reduce wind and water erosion of soil resources, as well as the implementation of a semi-closed mud/cuttings system with an on-site cuttings pit during drilling.

Marathon anticipates completing construction outside the migratory bird nesting season (February 1 through July 15) which will avoid impacts to migratory birds during the breeding/nesting season. In the event that construction will need to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests will be conducted by a qualified biologist within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to USFWS.

Additionally, all reasonable, prudent, and effective measures to avoid the taking of migratory bird species will be implemented during the construction and ongoing operation phases. These measures will include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining open pits and ponds that are free from oil, and netting the cuttings pits with netting that has a maximum mesh size of 1.5 inches.

Bald and Golden Eagles

Golden Eagles in North Dakota typically begin nesting in January and eggs are laid in late March, with young golden eagles fledging typically in mid-July. Golden eagles typically build large cliff nests and are commonly seen throughout the upper badlands and upper reaches of the Missouri River. Bald eagles in North Dakota initiate nesting in February and eggs are laid in mid-March, with young bald eagles fledging sometime in July. Bald eagles build large tree nests, preferably near water. Bald eagles can be seen in North Dakota most often along the Missouri River.

Ground surveys for eagle nests were conducted on May 24-25, June 12, July 5, and July 25-27, 2012. No eagle nests were observed within the ½-mile corridor around all areas of project disturbance. In addition, golden eagle research compiled by Dr. Anne Marguerite Coyle (previously of Dickinson State University) was obtained from the North Dakota Game and Fish Department. Dr. Coyle's data consists of a database of historic golden eagle nesting sites in North Dakota. According to Dr. Coyle's information (last updated in 2007), the closest recorded golden eagle nest is located approximately 1.0 mile northeast of the proposed Felix USA 8-1H well pad. Coyle's data indicates that this nesting site was last observed as an "occupied nest fair to good condition…" in 1985. The nest could not be located in 2003, 2004, 2005, and 2006. This historic nesting site was thoroughly searched with the aid of a GPS device and binoculars; however, the nest could not be located and has been determined to be destroyed. Two golden eagles were observed soaring over the SE ¼ of Section 13, Township 146 North, Range 93 West. 5th P.M. If a golden or bald eagle nest is observed within ½-mile of the Felix USA or Jim Voigt USA project areas during construction, construction activities shall cease and the USFWS shall

be notified for advice on how to proceed. ***Please refer to the enclosed Eagle Habitat and Nest Locations map.***

Threatened and Endangered Species
The proposed project occurs in Dunn County, North Dakota. Current federally listed endangered, threatened, and candidate species listed for Dunn County include:

Endangered
Interior least tern
Whooping crane
Black-footed ferret
Pallid sturgeon
Gray wolf

Threatened
Piping plover (Also includes piping plover critical habitat)

Candidate
Dakota skipper
Sprague's pipit

Suitable habitat for the interior least tern, pallid sturgeon, and piping plover is largely associated with Lake Sakakawea and its associated shoreline. Potential habitat for these species occurs approximately 1.3 miles north-northeast of the proposed Felix USA 8-1H well pad (the nearest point). The Felix USA pads are situated on upland bluffs of rangeland, while the Jim Voigt USA pads are situated on rolling rangeland that is set back from the main bluffs that descend to the lowlands of the Little Missouri Badlands. Lake Sakakawea and its shoreline sits approximately 360 feet below the Jim Voigt USA pads and 450 feet below the Felix USA pads. The topographic features of the area and distance from the shoreline should assist in providing sight and sound buffers for shoreline-nesting birds. Runoff patterns from each pad site are described below.

- **Felix USA 8-1TFH** – Runoff from the proposed pad would travel west towards a wooded ephemeral drainage where it would then travel north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of approximately 2.6 miles.
- **Felix USA 8-1H** – Runoff from the proposed pad would travel north, collecting in a wooded ephemeral drainage where it would then continue traveling north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 1.9 miles. In addition, runoff may travel east towards a wooded ephemeral drainage located east of the pad, continuing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 3.2 miles.
- **Jim Voigt USA 7-1TFH** – Runoff from the proposed pad would travel north via a wooded ephemeral drainage, where it would continue flowing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 2.6 miles.

- **Jim Voigt USA 7-1H** – Runoff from the proposed pad would travel east via a wooded ephemeral drainage, where it would continue flowing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 2.7 miles.
- **Jim Voigt USA Production Facility Pad** - Runoff from the proposed pad would travel southeast towards a wooded ephemeral drainage where it would then travel northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of approximately 3.2 miles.

Storage tanks and the heater/treater will surrounded by an impermeable berm that will act as a primary containment to guard against possible spills. The berm would be designed to hold 100% of the capacity of the largest storage tank plus a full day's production. In addition, each pad (all four pads and the production facility pad) will have a full perimeter berm that would act as additional containment to guard against possible spills. Marathon will also place excess embankment and topsoil stockpiles on and around each pad in such a manner that will provide additional protection from migration of fluids, should they escape from a pad. Other BMPs will be utilized to reduce wind and water erosion of soil resources, as well as the implementation of a semi-closed mud/cuttings system with an on-site cuttings pit during drilling. Where BIA determines necessary, pit and soil stockpiles will be used to divert drainage outside of the fill slopes. In addition, stabilization of drill cuttings before placement in the pit and the reinforced lining of the cuttings pit would diminish the potential for pit leaching. Due to the implementation of several containment measures and the cuttings pit parameters, the transfer of accidentally released fluids to Lake Sakakawea and its associated habitats is unlikely. Given the distance from the Lake through the existing drainage pathway at the nearest point (1.9 miles), construction methodologies, and the level of containment measures, numerous measures are in place to prevent the movement of accidentally released fluids to Lake Sakakawea. As a result, the proposed project may affect, but is not likely to adversely affect the pallid sturgeon. Recently, USFWS has indicated that interior least terns and piping plovers may travel significant distances from shoreline habitat to forage during the nesting season. As such, the proposed project may affect but is not likely to adversely affect the interior least tern and piping plover. The proposed project is not likely to destroy or adversely modify designated critical habitat for the piping plover.

The black-footed ferret historically could be found throughout the Rocky Mountains and Great Plains. Preferred habitat for the black-footed ferret includes areas around prairie dog towns, as ferrets rely on prairie dogs for food and live in prairie dog burrows. Black-footed ferrets require at least an 80-acre prairie dog town to survive. In North Dakota, the southwestern corner of the state provided suitable habitat and supported the black-footed ferret. However, this species has not been confirmed in North Dakota for over 20 years and is presumed extirpated. Due to a lack of suitable habitat and known populations, the proposed project is anticipated to have no effect to the black-footed ferret.

Historically, the gray wolf's preferred habitat includes biomes such as boreal forest, temperate deciduous forest, and temperate grassland. While the gray wolf is not common in North Dakota, occasionally individual wolves do pass through the state. The project site is located far from other known wolf populations and is positioned in habitats that have not supported the species in recent years. No wolves or indications of wolves were observed during the field surveys. Due to

a lack of preferred habitat characteristics and known populations, the proposed project is anticipated to have no effect to the gray wolf.

Whooping cranes use shallow, seasonally and semi-permanently flooded palustrine (marshy) wetlands for roosting, and various cropland and emergent wetlands for feeding. A small (less than 1 acre) emergent wetland was observed near the western portion of the Jim Voigt USA access road. Several high-use, man-made cattle ponds were observed outside of the project study areas. The majority of the project disturbance areas occur on upland rangeland with occasional wooded draws. Cattle grazing is prevalent. In addition, the proposed project is located in the Central Flyway where 95 percent of confirmed whooping crane sightings have occurred. Although preferred habitat characteristics are not prevalent in the area, emergent wetland habitat was present. As such, the proposed project may affect but is not likely to adversely affect the whooping crane. Per USFWS recommendations on previous projects of a similar nature, if a whooping crane is sighted within one-mile of any well site or associated facilities while under construction, all work will cease within one-mile of that part of the project and the USFWS will be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.

The preferred habitat for the Dakota skipper consists of undisturbed, flat, moist bluestem prairies and upland prairies with an abundance of wildflowers. The Felix USA and Jim Voigt USA pads consist of native and non-native upland grasses with abundant wildflowers. Cattle were present during the field surveys and grazing was evident. No Dakota skippers were observed during the field survey, which was conducted during the adult flight period for the species. Due to the presence of potential habitat for the Dakota skipper within the project areas, the proposed action may impact individuals or habitat. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species.

The Sprague's pipit is a small songbird found in prairie areas throughout the Northern Great Plains. Preferred habitat includes rolling, upland mixed-grass prairie habitat with high plant species diversity. The Sprague's pipit breeds in habitat with minimal human disturbance. The Felix USA and Jim Voigt USA sites consist of native and non-native upland grasses with high plant species diversity. Human disturbance at the site is minimal. Cattle were present during the field surveys and grazing was evident. No Sprague's pipit were observed during the field survey. Due to the presence of potential habitat for the Sprague's pipit within the project areas, the proposed action may impact individuals or habitat. An "effect determination" under Section 7 of the Endangered Species Act has not been made due to the current unlisted status of the species. Construction is anticipated to occur outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction will need to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests will be conducted by a qualified biologist within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to USFWS.

Water Resources

The Felix USA pads are situated on an upland bluff that descends to wooded drainages on nearly all sides. The Jim Voigt USA pads are situated on hills of open rangeland, set back from the

main bluffs that descend to the lowlands of the Little Missouri Badlands. Runoff patterns from each pad site are described below.

- **Felix USA 8-1TFH** – Runoff from the proposed pad would travel west towards a wooded ephemeral drainage where it would then travel north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of approximately 2.6 miles.
- **Felix USA 8-1H** – Runoff from the proposed pad would travel north, collecting in a wooded ephemeral drainage where it would then continue traveling north towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 1.9 miles. In addition, runoff may travel east towards a wooded ephemeral drainage located east of the pad, continuing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 3.2 miles.
- **Jim Voigt USA 7-1TFH** – Runoff from the proposed pad would travel north via a wooded ephemeral drainage, where it would continue flowing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 2.6 miles.
- **Jim Voigt USA 7-1H** – Runoff from the proposed pad would travel east via a wooded ephemeral drainage, where it would continue flowing northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of 2.7 miles.
- **Jim Voigt USA Production Facility Pad** - Runoff from the proposed pad would travel southeast towards a wooded ephemeral drainage where it would then travel northeast towards Wolf Chief Bay of Lake Sakakawea, for a total traveled distance of approximately 3.2 miles.

A small emergent wetland (less than 1 acre) was observed near the western portion of the Jim Voigt USA access road. Distances to wooded ephemeral drainages are provided on the enclosed ***Drainage Pathway and Distance to Wooded Draws map***. Each pad would be completely bermed to prevent runoff. Properly sized culverts will be implemented as necessary. Marathon will also place excess embankment and topsoil stockpiles on and around each pad in such a manner that will provide additional protection from migration of fluids, should they escape the pad. Additionally, straw waddles will be placed in wooded drainages adjacent or near to the proposed pad sites.

Best Management Practices

BMPs for soil and wind erosion would be implemented as needed to include over-seeding of cut areas and spoil piles, as well as the use of diversion ditches, silt fences, and/or mats. The alteration of drainages will be avoided to the extent possible. Each pad would be completely bermed to prevent runoff. In addition, where BIA determines necessary, pit and soil stockpiles will be used to divert drainage outside of the fill slopes. Properly sized culverts to maintain drainage along the access roads would also be installed where needed. Well pad corners would be rounded where feasible to minimize the overall footprint of the pad. Upon well completion, portions of each pad would be reclaimed to further avoid environmental areas of concern.

Summary of Environmental Commitments

Marathon has implemented the following measures in an effort to minimize and avoid potential environmental effects associated with the development of the proposed project.

- A semi-closed mud/cuttings system with an on-site cuttings pit would be used during drilling. Drill cuttings would be stabilized before being placed in the reinforced lined cuttings pit. The reinforced lining of the cuttings pit would have a minimum thickness of 20 mil to prevent seepage and contamination of underlying soil. Any minimal fluids remaining in the drill cuttings pit would be removed and disposed of in accordance with BLM and NDIC rules and regulations. All liquids from drilling would be transported off-site. The drill cuttings pit would be reclaimed to BLM and North Dakota Industrial Commission (NDIC) standards immediately upon finishing completion operations.
- Prior to its use, each cuttings pit would be fenced on the non-working sides. The access side would be fenced and netted immediately following drilling and completion operations in order to prevent wildlife and livestock from accessing the pit.
- On each pad, all cut slopes would be bermed to prevent run-on.
- Electrical lines will be buried to prevent the potential for bird strikes.
- All construction activities will be completed outside the migratory bird nesting season (February 1 through July 15) in order to avoid impacts to migratory birds during the breeding/nesting season. In the event that construction will need to take place during the migratory bird nesting season, a pre-construction survey for migratory birds or their nests will be conducted by a qualified biologist within five days prior to the initiation of all construction activities. The findings of these surveys would be reported to the USFWS.
- Measures implemented during construction to avoid the taking of migratory bird species will include: the use of suitable mufflers on all internal combustion engines; certain compressor components to mitigate noise; only utilizing approved roadways; placing wire mesh or grate covers over barrels or buckets placed under valves and spigots to collect dripped oil; maintaining open pits and ponds that are free from oil, and netting the cuttings pit with netting that has a maximum mesh size of 1.5 inches.
- Per USFWS recommendations on previous projects of a similar nature, if a whooping crane is sighted within one-mile of any well site or associated facilities while under construction, all work will cease within one-mile of that part of the project and the USFWS will be contacted immediately. In coordination with USFWS, work may resume after the bird(s) leave the area.
- The storage tanks and heater/treater will be surrounded by an impermeable berm that will act as primary containment to guard against possible spills. The berm would be designed to hold 100% of the capacity of the largest storage tank plus a full day's production. As an additional containment measure, Marathon will berm the entire perimeter of each pad.
- BMPs would be implemented to minimize wind and water erosion of soil resources and a semi-closed loop mud/cuttings system would be used during drilling. Where BIA determines necessary, pit and soil stockpiles will be used to divert drainage outside of the fill slopes.
- Per BIA's request, Marathon agreed to adjust the cut slope on the south end of the Felix USA 8-1TFH from 2:1 to a 1.5:1 slope to pull the disturbance area in from the adjacent clay butte. If Marathon only develops a single well from the pad, then a 2:1 slope on the south end will be sufficient.
- Marathon will spray for noxious weeds (if present) prior to and upon completion of construction.

- Cultural resources construction monitoring will occur at certain areas per the recommendation by THPO.
- Straw waddles will be placed in wooded drainages adjacent or near to the proposed pad sites.
- Marathon will obtain any necessary United States Army Corps of Engineers (USACE) permits prior to construction.

To ensure that all social, economic, and environmental issues are analyzed accurately, we solicit your views and comments on the proposed action, pursuant to Section 102(2) (D) (IV) of the National Environmental Policy Act of 1969, as amended. We are interested in existing or proposed developments that should be considered in connection with the proposed project. We also ask your assistance in identifying any property or resources that you own, manage, oversee, or otherwise value that might be adversely impacted.

Please provide your comments by **September 7, 2012** so that they may be addressed in the EA document. If you would like further information regarding this project, please contact me at (701) 221-4149 or via email at john.cannon@urs.com.

Sincerely,
URS Corporation

John Cannon
Environmental Planner

Enclosure (Maps)

Solicitation of Views – Agency Responses

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF

August 8, 2012

North Dakota Regulatory Office

URS Corporation
Attn: John Cannon
1000 E Calgary Avenue Suite 1
Bismarck, ND 58503

Dear Mr. Cannon:

This is in response to your letter dated August 6, 2012 on behalf of Marathon Oil Company, under the National Environmental Policy Act for the Bureau of Indian Affairs and Bureau of Land Management, requesting U.S. Army Corps of Engineers (Corps) comments concerning the development of four well pads and a production facility pad supporting the drilling and completion of up to 16 oil and gas wells located on the Fort Berthold Reservation in Dunn County, North Dakota.

The Felix USA 8-1TFH and Felix USA 8-1H will be located in Section 17, Township 146 North, Range 92 West.

The Jim Voigt USA 7-1TFH, 7-1H, and Production Facility Pad will be located in Section 18, Township 146 North, Range 92 West.

Corps Regulatory Offices administer Section 10 of the Rivers and Harbors Act (Section 10) and Section 404 of the Clean Water Act (Section 404). Section 10 regulates work in or affecting navigable waters. This would include work over, through, or under Section 10 waters. Section 10 waters in North Dakota are the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of the railroad track in Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Section 404 regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but is not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

For any proposed well where the well line and/or bottom hole is under or crosses under Lake Sakakawea, regardless of depth, we require that project proponent submit a completed permit application (ENG Form 4345) to the Corps. Include a location map and description of all work associated with the proposal, i.e., well bore, road construction, utility lines, etc. Send the completed application to the U.S. Army Corps of Engineers; North Dakota Regulatory Office; 1513 South 12th Street; Bismarck, North Dakota; 58504.

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter of phone at (701) 255-0015.

Sincerely,

Sam E. Werner

Sam Werner
Acting Regulatory Program Manager
North Dakota

Enclosure
ENG Form 4345

CF w/o encl
EPA Denver (Brent Truskowski)

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 EXPIRES: 31 August 2012

Public reporting burden for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses This Information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME: First - Middle - Last – Company – E-mail Address –	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) First - Middle - Last – Company – E-mail Address –
6. APPLICANT'S ADDRESS. Address - City – State – Zip – Country –	9. AGENT'S ADDRESS Address - City – State – Zip – Country –
7. APPLICANT'S PHONE NOs. W/AREA CODE. a. Residence b. Business c. Fax	10. AGENT'S PHONE NOs. W/AREA CODE a. Residence b. Business c. Fax

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____

APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)

13. NAME OF WATERBODY, IF KNOWN (if applicable)	14. PROJECT STREET ADDRESS (if applicable) Address
15. LOCATION OF PROJECT Latitude: °N Longitude: °W	City - State – Zip -

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality
Section – Township – Range –

17. DIRECTIONS TO THE SITE

18. Nature of Activity (Description of project, include all features)

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres

Or

Liner Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

24. Is Any Portion of the Work Already Complete? Yes ☐ No ☐ IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

Address –

City – State – Zip –

26. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT _____ DATE _____ SIGNATURE OF AGENT _____ DATE _____

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Instructions for Preparing a
Department of the Army Permit Application

Blocks 1 through 4. To be completed by Corps of Engineers.

Block 5. Applicant's Name. Enter the name and the E-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant Telephone Number(s). Please provide the number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by applicant, if an agent is to be employed.

Block 12. Proposed Project Name or Title. Please provide name identifying the proposed project, e.g., Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center.

Block 13. Name of Waterbody. Please provide the name of any stream, lake, marsh, or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Project Street Address. If the proposed project is located at a site having a street address (not a box number), please enter it here.

Block 15. Location of Proposed Project. Enter the latitude and longitude of where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality that the site is located in.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide description of the proposed project location, such as lot numbers, tract numbers, or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known

Block 18. Nature of Activity. Describe the overall activity or project. Give appropriate dimensions of structures such as wing walls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

Block 19. Proposed Project Purpose. Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

Block 20. Reasons for Discharge. If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

Block 21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards. Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

Block 22. Surface Areas of Wetlands or Other Waters Filled. Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

Block 23. Description of Avoidance, Minimization, and Compensation. Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

Block 24. Is Any Portion of the Work Already Complete? Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps permit, identity the authorization, if possible.

Block 25. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site. List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

Information regarding adjacent landowners is usually available through the office of the tax assessor in the county or counties where the project is to be developed.

Block 26. Information about Approvals or Denials by Other Agencies. You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

Block 27. Signature of Applicant or Agent. The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8½ x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.**

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

REPLY TO
ATTENTION OF

August 22, 2012

Planning, Programs, and Project Management Division

URS Corporation
Attention: Mr. John Cannon
1000 East Calgary Avenue, Suite 1
Bismarck, North Dakota 58503

Dear Mr. Cannon:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated August 6, 2012, regarding Marathon Oil Company's proposed development of 4 well pads and the drilling and completion of 16 oil and gas wells on the Fort Berthold Reservation in Dunn County, North Dakota. The Corps offers the following comments:

As a member of the Working Group established by Executive Order (EO) #13605 by President Barack Obama, the Departments of Interior and Defense support the safe discovery and development of domestic natural oil and gas resources and have the right to regulate such activities on public and Indian trust lands. Potential degradation to natural resources and the impact that the activities may have on the human environment should be considered in order to responsibly develop our oil and gas resources. The Working Group must address other members' concerns, including the Corps, to ensure the preservation of our natural resources and public health and safety. The Corps requests that the following comments be fully considered in the Environmental Assessment (EA) for the proposed project.

The Corps requests the Bureau of Indian Affairs (BIA) complete a thorough cumulative impact evaluation on the effects this action would have when combined with other past, present and reasonably foreseeable actions regarding oil and gas development on the Fort Berthold Reservation (40 CFR §1508.7). Since August of 2009, the Omaha District has received scoping letters requesting comments on the construction of over 500 wells. Many of these wells are very close to Lake Sakakawea, which is managed by the Corps. From a cumulative impacts perspective, the risk of adverse impacts to Lake Sakakawea may increase with the construction of each new well within such a close proximity to the lake. Alternative site locations which set back wells and locate them away from drainages that connect directly to the lake should be considered in the alternative analysis.

The Corps is aware of recent reports that describe environmental impacts associated with the use of open drilling waste pits in North Dakota. These open pits may be susceptible to flooding, which may potentially impact drinking water supplies, wildlife, soil and other water resources. Due to the proximity of the proposed wells to Lake Sakakawea, a significant drinking water resource, the Corps encourages the applicant to use a complete closed loop drilling system. A

complete closed loop drilling system may reduce or eliminate the discharge of toxic drilling wastes and their potential negative impacts to the environment.

The Corps is also aware that the BIA is currently developing a programmatic EA for oil and gas development on the Fort Berthold Reservation. The Corps requests Marathon Oil Company include some information about the programmatic evaluation in the site specific EA. It is important for the reader to know that an overarching analysis is currently underway that will address the scale and rapid development of oil and gas wells within this region.

In addition to the comments provided above, it is recommended for Marathon Oil Company to complete the following actions:

a. Your plans should be coordinated with the State water quality office in which the project is located to ensure compliance with Federal and State water quality standards and regulations mandated by the Clean Water Act and administered by the U.S. Environmental Protection Agency (EPA). Please coordinate with the North Dakota Department of Health concerning state water quality programs.

b. Consult with the U.S. Fish and Wildlife Service and the North Dakota Game and Fish Department regarding fish and wildlife resources. In addition, the North Dakota State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

c. Since the proposed project does not appear to be located within Corps owned or operated lands, we are providing no floodplain or flood risk information. To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area, please consult the following floodplain management office:

North Dakota State Water Commission
Attention: Jeff Klein
900 East Boulevard Avenue
Bismarck, North Dakota 58505-0850
jjkein@nd.gov
Telephone: 701-328-4898
Fax: 701-328-3747

Finally, any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided website

(http://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm) to determine if this project requires a 404 permit. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Bismarck Regulatory Office
Attention: CENWO-OD-R-ND/Cimarosti
1513 South 12th Street
Bismarck, North Dakota 58504

In addition, please update your records with our current mailing address:

U.S. Army Corps of Engineers, Omaha District
Planning Branch
Attention: CENWO-PM-AC
1616 Capitol Ave.
Omaha, Nebraska 68102-4901

I am forwarding a copy of this letter to the Chairman of the Three Affiliated Tribes, Chairman Tex Hall; Three Affiliated Tribes Director of Game and Fish, Mr. Fred Poitra; Three Affiliated Tribes Energy Director, Mr. Fred Fox; Three Affiliated Tribes Natural Resource Director, Ms. Annette Young Bird; Three Affiliated Tribes Tribal Historic Preservation Officer, Mr. Elgin Crows Breast all located at 404 Frontage Road, New Town, North Dakota 58763. If you have any questions, please contact John Shelman of my staff at (402) 995-2708.

Sincerely,

Brad Thompson
Chief, Environmental Resources and Missouri
River Recovery Program Plan Formulation Section

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
PO Box 1458
Bismarck, ND 58502-1458

September 11, 2012

URS
1000 East Calgary Avenue, Suite 1
Bismarck, North Dakota 58503

Dear Sirs:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated August 6, 2012, concerning the development of four well pads and a production facility pad supporting the drilling and completion of up to 16 oil and gas wells located in Dunn County, North Dakota.

Farmland Protection Policy Act

NRCS has a major responsibility with the Farmland Protection Policy Act (FPPA) in documenting conversion of farmland (i.e., prime, statewide importance and local importance) to non agriculture use. It appears your proposed project is not supported by federal funding, therefore; FPPA does not apply and no further action is needed.

Wetlands

The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose, or to have the effect of making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines for the installation of permanent structures where wetlands occur. If these guidelines are followed the impacts to the wetland will be considered minimal allowing USDA participants to continue to receive benefits. Following are the requirements:

- Disturbance to the wetland must be temporary.
- No drainage of wetland is allowed (temporary or permanent).
- Mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained.
- Temporary side cast material must be placed in such a manner not to be dispersed in the wetland.
- All trenches must be backfilled to the original wetland bottom elevation.

NRCS would recommend that impacts to wetlands be avoided.

If you have additional questions pertaining to FPPA, please contact Steve Sieler, Liaison Soil Scientist, NRCS, Bismarck, ND at 701-530-2019.

Sincerely,

WADE D. BOTT
State Soil Scientist

Helping People Help the Land

Jack Dalrymple, Governor
Mark A. Zimmerman, 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

August 28, 2012

John Cannon
URS
Suite 1
1000 East Calgary Ave.
Bismarck, ND 58503

Re: Marathon Oil Company, Four proposed Oil and Gas Multiple-Well Pads and Production Facility Pad – Fort Berthold Indian Reservation, Dunn County

Dear John Cannon,

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced proposal for the development of four well pads and a production facility pad supporting the drilling and completion of up to 16 oil and gas wells located in Dunn County, North Dakota on the Fort Berthold Indian Reservation.

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 occurrences in our database within or adjacent to 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 kgduttenhefner@nd.gov). Thank you for the opportunity to comment on this proposed project.

Sincerely,

Kathy Duttenhefner, Coordinator
Natural Resources Division

R.USNDNHI*2012_212KD8/29/2012DL9.6.2012

Play in our backyard!

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: http://swc.nd.gov

August 24, 2012

John Cannon
URS
1000 East Calgary Avenue STE 1
Bismarck, ND 58503

Dear Mr. Cannon:

This is in response to your request for review of environmental impacts associated with the Marathon Oil Company, Four Proposed Oil and Gas Multiple-Well Pads and Production Facility Pad, Fort Berthold Indian Reservation located in Dunn County, ND. Well pad and production facility pad will be located Felix USA 8-1TFH – NW ¼ NE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M. Felix USA 8-1H - NW ¼ NE ¼ of Section 17, Township 146 North, Range 92 West, 5th P.M. Jim Voigt USA 7-1TFH – SE ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M. Jim Voigt USA 7-1H – NW ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M. Jim Voigt USA Production Facility Pad – SW ¼ NW ¼ of Section 18, Township 146 North, Range 92 West, 5th P.M.

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

- There are no floodplains identified and/or mapped where this proposed project is to take place. The project takes place in an unmapped county. No floodplain permits are necessary from Dunn County relative to the National Flood Insurance Program.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

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

Sincerely,

Linda Weispfenning
Water Resource Planner

LW:dp/1570

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

August 13, 2012

Mr. John Cannon, Environmental Planner
URS Corporation
1000 East Calgary Avenue, Suite 1
Bismarck, ND 58503

Re: Marathon Oil Company
Four Proposed Oil and Gas Multiple Well Pads and
One Production Facility Pad
Fort Berthold Indian Reservation, Dunn County

Dear Mr. Cannon:

This department has reviewed the information concerning the above-referenced project submitted under date of August 6, 2012, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. Development of the production facilities and any access roads, well pads or pipelines should have a minimal effect on air quality provided measures are taken to minimize fugitive dust. However, operation of the wells has the potential to release air contaminants capable of causing or contributing to air pollution. We encourage the development and operation of the wells in a manner that is consistent with good air pollution control practices for minimizing emissions. Detailed guidance is available at www.ndhealth.gov/AQ/OilAndGasWells.htm.

   Any questions about air pollution control or permitting requirements should be addressed to Ms. Kathleen Paser at the U.S. Environmental Protection Agency, Region 8. She may be reached at (303) 312-6526 or Paser.Kathleen@epa.gov.

2. Aggregate to be used for road construction should not contain any erionite. Aggregate sources should be tested for erionite following guidelines found at www.ndhealth.gov/EHS/Erionite. For questions regarding erionite testing, please call Mark Dihle at 701-328-5188.

3. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that

may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

4. Oil and gas related construction activities located within tribal boundaries in North Dakota may be required to obtain a permit to discharge storm water runoff from the U.S. Environmental Protection Agency. Further information may be obtained from the U.S. EPA's website or by calling the U.S. EPA – Region 8 at (303) 312-6312. Also cities or counties may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

5. Projects that involve construction, drilling, completion and/or production of crude oil or natural gas wells should select locations that minimize the potential for environmental damage during development of the well and in the event of a spill, restrict fluids from reaching surface waters. Well placement should avoid close proximity to drainage areas and steep slopes. Environmental damage can be reduced by developing a spill response plan that emphasizes rapid deployment of prepositioned assets necessary to contain spills and subsequent cleanup. Proper surveillance and monitoring of pipelines is necessary for the early detection of leaks.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.
c: Mark Dihle, Division of Air Quality

NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

U.S. Department of Homeland Security
Region VIII
Denver Federal Center, Building 710
P.O. Box 25267
Denver, CO 80225-0267

FEMA

R8-Mitigation

August 23, 2012

URS
Mr. John Cannon, Environmental Planner
1000 East Calgary Avenue, Suite 1
Bismarck, ND 58503

Dear Mr. Cannon:

Thank you for your inquiry regarding your proposed projects on the Fort Berthold Indian Reservation, Felix USA 8-1TFH, Felix USA 8-1H, Jim Voigt USA 7-1TFH, Jim Voigt USA 7-1H and Jim Voigt USA Production Facility. FEMA's major concern is if the property is located within a mapped Special Flood Hazard Area any development in these areas requires further consideration.

I recommend that you contact the local Floodplain Manager for the Fort Berhold Indian Reservation Mr. Cliff Whitman at (701) 627-4805 to receive further guidelines regarding the impact that the project might have to the regulations and policies of the National Flood Insurance Program. It is essential that a Floodplain Ordinance Permit be issued prior to this project being started. Considering that floods are the most devastating of all natural disasters in this country, any efforts to reduce the impacts of that hazard is worthwhile.

Let me know if I can be of assistance and please feel free to contact me at 303-235-4721.

Sincerely,

David A. Kyner
NFIP Program Specialist

"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

August 14, 2012

John Cannon
Environmental Planner
URS Corporation
1000 East Calgary Avenue, Suite 1
Bismarck, ND 58503

Dear Mr. Cannon:

RE: Point USA
Felix USA 8-1TFH
Felix USA 8-1H
Jim Voight USA 7-1TFH
Jim Voight USA 7-1H
Jim Voight USA Production Facility Pad

Marathon Oil Company is proposing up to 23 oil and gas wells on five well pads and a production facility pad on the Fort Berthold Reservation in Dunn County, North Dakota.

Our primary concern with oil and gas development is the fragmentation and loss of wildlife habitat associated with construction of the well pads and access roads. We recommend that construction be avoided to the extent possible within native prairie, wooded draws, riparian corridors, and wetland areas.

We also suggest that botanical surveys be completed during the appropriate season and aerial surveys be conducted for raptor nests before construction begins.

Sincerely,

Greg Link
Chief
Conservation & Communication Division

js

United States Department of the Interior

BUREAU OF RECLAMATION
Dakotas Area Office
P.O. Box 1017
Bismarck, North Dakota 58502

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
DK-5000
ENV-6.00

AUG 15 2012

RECEIVED
AUG 16 2012
By

John Cannon
Environmental Planner
URS
1000 East Calgary Avenue, Suite 1
Bismarck, ND 58503

Subject: Solicitation for an Environmental Assessment by BIA for the Proposed Construction of Four Exploratory Oil and Gas Well Pads and Production Facility Pad for Marathon Oil on the Fort Berthold Indian Reservation in Dunn County, North Dakota

Dear Mr. Cannon:

This letter is written to inform you that we received your letter of August 6, 2012, and the information and map of your proposed well pad and wells have been reviewed by Bureau of Reclamation staff.

The proposed well pads are sited in:

Felix USA - 8-1TFH – NW¼ NE¼ Section 17, T146N, R92W Halliday NW, ND,

Felix USA - 8-1TFH - N¼ NE¼ Section 17, T146N, R92W Halliday NW, ND

Jim Voight - 7-1TFH - SE¼ NW¼ Section 18 , T146N, R92W Halliday NW, ND

Jim Voight - 7-1H - NW¼ NW¼ Section 18, T146N, R92W Halliday NW, ND

Jim Voight USA – Production Facility Pad - SW¼ SW¼ Section 18, T146N, R92W Halliday NW, ND, in Dunn County

There are no known federal Reclamation facilities in Sections 17, 18, T146N, R92W or adjacent to Sections 17 and 18. Please take note that municipal, rural, and industrial water lines commonly follow roads. Your map does not reveal access roads to the well pads.

Since construction is ongoing it is impossible to remain fully current on all pipelines. Therefore, Reclamation, as the lead federal agency for the Fort Berthold Rural Water System, requests that any work planned on the reservation be coordinated with Mr. Maynard Demaray, Fort Berthold Rural Water Director, Three Affiliated Tribes, 308 4 Bears Complex, New Town, North Dakota 58763.

Should you need to cross a Fort Berthold Rural Water System pipeline while accessing your proposed project or should you find need to relocate a Rural Water System pipeline, please contact our engineer Tom Thompson as Reclamation requests that you provide us an opportunity to review the designs for any relocations or crossings of federal Fort Berthold Rural Water lines. For your convenience, we have included the specification sheet for pipeline crossings as an initial example.

Thank you for providing your project information and an opportunity to comment on your proposal. If you have any further environmental questions, please contact me at 701-221-1287 or for engineering questions Tom Thompson, Civil Engineer, at 701-221-1220.

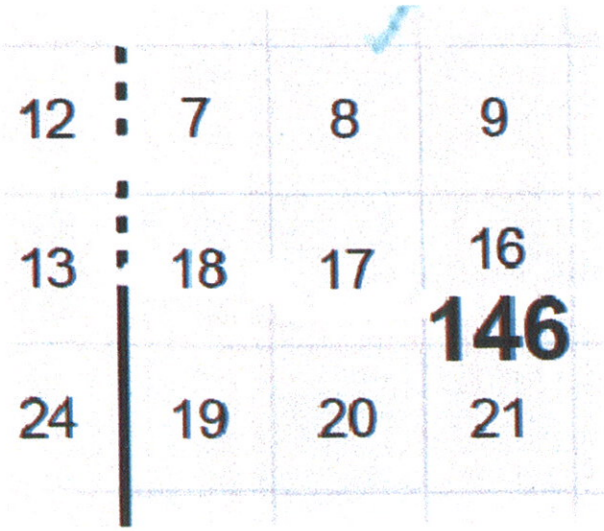
Sincerely,

Kelly B. McPhillips
Environmental Specialist

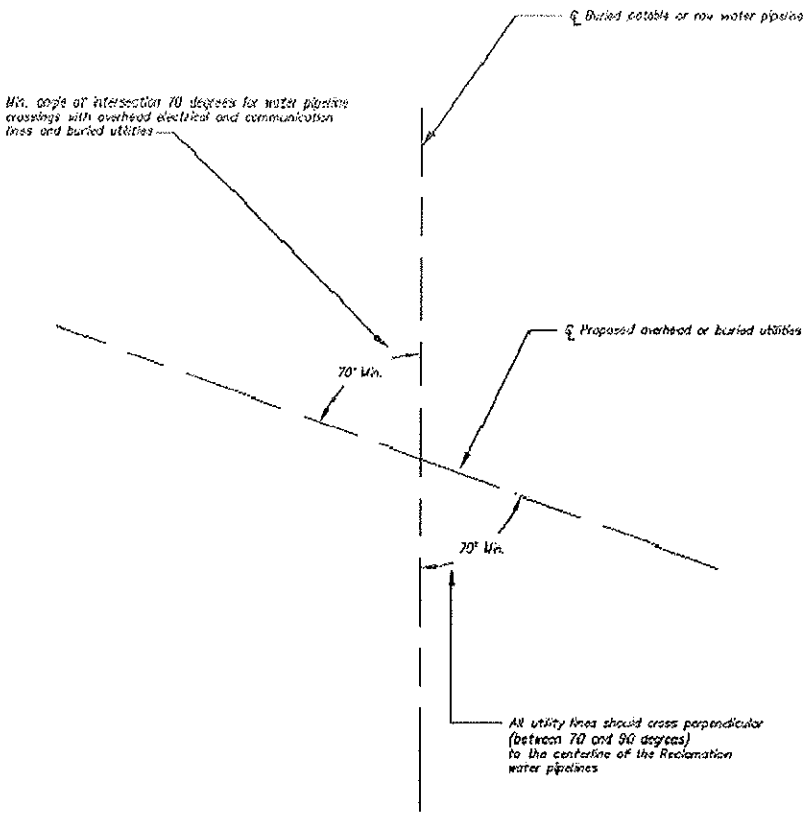
Enclosure

cc: Bureau of Indian Affairs
Great Plains Regional Office
Ms. Marilyn Bercier
Supervisory Environmental Protection Specialist
115 Fourth Avenue S.E.
Aberdeen, SD 57401

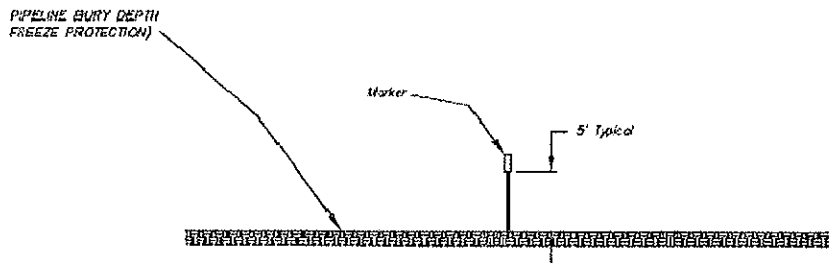
Mr. Maynard Demaray
Fort Berthold Rural Water Director
Three Affiliated Tribes
308 4 Bears Complex
New Town, ND 58763
(w/encl)

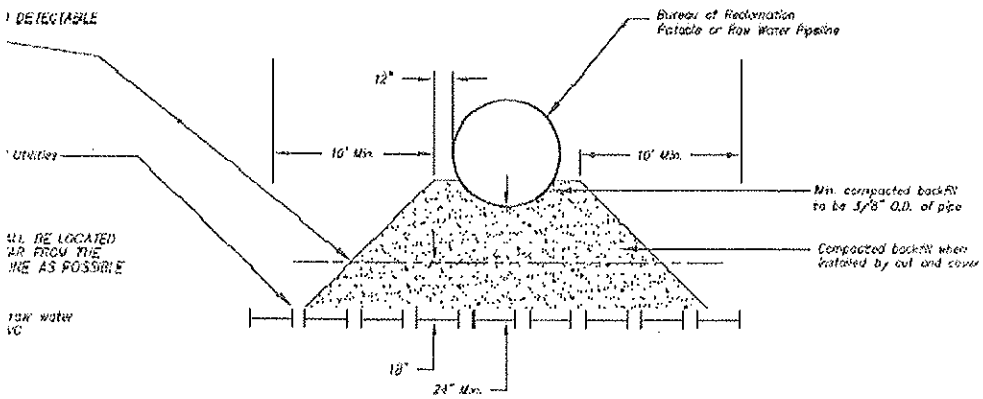


Section 17, T146N, R92W and Section 18, T146N, R92W, Halliday NW, ND, Dunn County



CROSSING PLAN





WE CROSSING

RECLAMATION
Managing Water in the West

ALWAYS THINK SAFETY

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

PICK-SLOAN MISSOURI RIVER BASIN PROGRAM
GARRISON DIVERSION GARRISON DIVERSION UNIT, N.DAK.

MR&I RURAL WATER SYSTEMS
STANDARD CROSSING AND CLEARANCE REQ.
POTABLE AND RAW WATER PIPELINES

DESIGNED B. Kohls
DRAWN B. Kohls
CHECKED D. Erbe
TECH. APPR.
APPROVED

BISMARCK, NORTH DAKOTA 07-30-2010

769-603-25480

SHEET 1 OF 1

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue S.E., Suite 400
Aberdeen, South Dakota 57401

IN REPLY REFER TO:
DESCRM
MC-208

SEP 0 5 2012

Elgin Crows Breast, THPO
Mandan, Hidatsa and Arikara Nation
404 Frontage Road
New Town, North Dakota 58763

Dear Mr. Crows Breast:

We have considered the potential effects on cultural resources of two oil well pads and access roads in Dunn County, North Dakota. Approximately 50 acres were intensively inventoried using a pedestrian methodology. Potential surface disturbances are not expected to exceed the area depicted in the enclosed report. Three archaeological sites (32DU1740, 32DU1741, 32DU1742) were located, of which 32DU1740 may possess the quality of integrity and meet at least one of the criteria (36 C.F.R. § 60.4) for inclusion on the National Register of Historic Places; 32DU1741 is evaluated as **not eligible**, and 32DU1742 is evaluated as **eligible** for inclusion on the National Register of Historic Places. No properties were located that appear to qualify for protection under the American Indian Religious Freedom Act (42 U.S.C. 1996 [1994]).

As the surface management agency, and as provided for in 36 C.F.R. § 800.5 (2005), we have reached a determination of **no historic properties affected** for these undertakings, as the eligible and potentially eligible archaeological sites will be avoided. Catalogued as **BIA Case Number AAO-3002/FB/12**, the proposed undertakings, locations, and project dimensions are described in the following report:

Glaab, Rigden
(2012) A Class III Cultural Resources Inventory of the Felix USA and Point USA Well Pads and Access Road in Dunn County, North Dakota. URS Corporation for Marathon Oil Corporation, Dickinson, ND.

If your office concurs with this determination, consultation will be completed under the National Historic Preservation Act and its implementing regulations. We will adhere to the Standard Conditions of Compliance.

If you have any questions, please contact Dr. Carson N. Murdy, Regional Archaeologist, at (605) 226-7656.

Sincerely,

Acting

Regional Director

Enclosure

cc: Chairman, Three Affiliated Tribes
Superintendent, Fort Berthold Agency

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

August 10, 2012

RECEIVED
AUG 14 2012
By

Mr. John Cannon
URS Corporation
1000 East Calgary Avenue, Suite 1
Bismarck ND 58503

ND SHPO REF. 12-1510 BIA/BLM/MHAN THPO Marathon Oil Company four proposed oil and gas multiple-well pads and production facility pad well pad in portions of [T146N R92W Sections 17 and 18] in MHAN, Dunn County, North Dakota

Dear Mr. Cannon,

We received your correspondence regarding ND SHPO REF. 12-1510 BIA/BLM/MHAN THPO Marathon Oil Company four proposed oil and gas multiple-well pads and production facility pad well pad in portions of [T146N R92W Sections 17 and 18] in MHAN, Dunn County, North Dakota. We request that a copy of cultural resource site forms and reports be sent to this office so that the cultural resources archives can be kept current for researchers.

Thank you for your consideration. Consultation is with MHAN THPO. If you have any questions please contact Susan Quinnell, Review & Compliance Coordinator at (701)328-3576 or squinnell@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)

c: Elgin Crows Breast, THPO MHAN
c: Justin Peters, BLM, Dickinson, ND

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

OCT 19 2012

John Cannon
Environmental Planner
URS Corporation
1000 East Calgary Avenue, Suite 1
Bismarck, North Dakota 58503

Re: Marathon Oil Company
Four Proposed Oil and Gas Multiple-Well Pads and
Production Facility Pad
Fort Berthold Indian Reservation
Dunn County, North Dakota
In response, please reference Tails # 2012-CPA-0809

Dear Mr. Cannon:

This is in response to your August 7, 2012, request for concurrence, regarding a proposed development of four well pads and a production facility pad supporting the drilling and completion of up to 16 oil and gas wells located in Dunn County, North Dakota on the Fort Berthold Reservation.

Specific locations for the proposed projects are:

Felix USA 8-1TFH & 8-1H: T. 146 N., R. 94 W., Section 17
Jim Voigt USA 7-1TFH, 7-1H, & Production Facility Pad: T. 146 N., R. 92 W., Section 18

We offer the following comments under the authority of and in accordance with the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 *et seq.*) (NEPA), the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*) (ESA), Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*) (MBTA), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250) (BGEPA), and Executive Order 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds."

Threatened and Endangered Species

In an e-mail dated August 6, 2012, the Bureau of Indian Affairs (BIA) designated John Cannon on behalf of URS Corporation (URS) to represent the BIA for informal Section 7 consultation under the ESA. Therefore, the U.S. Fish and Wildlife Service (Service) is responding to you as

the designated non-Federal representative for the purposes of ESA, and under our other authorities as the entity preparing the NEPA document for adoption by the BIA.

Your letter stated that the closest proposed well pad (Felix USA 8-1H) is located approximately 1.90 stream miles south of potential habitat for interior least tern (*Sternula antillarum*), pallid sturgeon (*Scaphirhynchus albus*), and piping plover (*Charadrius melodus*). A setback distance of 1.0 stream-mile is believed to be adequate to contain most spills before product can reach the lake through draws and drainages. The topographic features of the area and the distance from the shoreline (Felix USA 8-1H at 1.30 miles at the nearest point) should also assist in providing sight and sound buffers for plovers and terns. Additionally, Marathon Oil Company (Marathon) will implement a semi-closed drilling system for the proposed locations. To minimize or eliminate the potential for pit leaching, the dry and stackable drill cuttings would be placed in the earthen, 20 millimeter reinforced lined cutting pit. Marathon will implement secondary containment measures, including an impermeable containment berm to prevent hazardous runoff or spills containing storage tanks and the heater/treaters. The berm would be sized to hold 100% capacity of the largest storage tank plus one full day's production. Therefore, the Service concurs with your "may affect, is not likely to adversely affect" determination for interior least tern and piping plover.

The letter made a determination of "not likely to destroy or adversely modify designated critical habitat" for the piping plover. We believe that the determination intended is "may affect, is not likely to adversely affect," and we concur with this determination.

Your letter states that Marathon has committed to ceasing work on the proposed site if a whooping crane(s) (*Grus americana*) is sighted within 1.0 mile of the project area and immediately contacting the Service. Work may resume in coordination with the Service after the bird(s) leaves. Additionally, per BIA requirements, all new power lines must be buried. Therefore, the Service concurs with your "may affect, is not likely to adversely affect" determination for whooping crane.

As a matter of policy, the Service does not concur with "no effect" determinations. However, we acknowledge your "no effect" determination for the black-footed ferret (*Mustela nigripes*), gray wolf (*Canis lupus*) and pallid sturgeon.

The Dakota skipper (*Hesperia dacotae*) and Sprague's pipit (*Anthus spragueii*) are candidate species for listing under the ESA; therefore, an effects determination is not necessary for these species. No legal requirement exists to protect candidate species; however, it is within the spirit of the ESA to consider these species as having significant value and worth protecting. Although not required, Federal action agencies such as the BIA have the option of requesting a conference on any proposed action that may affect candidate species such as the Dakota skipper and Sprague's pipit.

Migratory Birds

The MBTA prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations.

While the MBTA has no provision for allowing incidental take, the Service realizes that some birds may be killed during project construction and operation even if all known reasonable and effective measures to protect birds are used. The Service Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and agencies that have taken effective steps to avoid take of migratory birds, and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent, and effective measures to avoid that take. Individuals, companies, or agencies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during construction or similar activities.

The letter states that Marathon will implement the following measures to avoid/minimize take of migratory birds:

- Construction will be completed outside of the migratory bird nesting season (Feb. 1-July 15). If construction cannot be completed outside of the migratory bird nesting season, Marathon will either:
    - Conduct a pre-construction survey for migratory birds or their nests five days prior to the initiation of construction activities.
    - Mow/grub the site prior to and throughout the nesting/breeding season in lieu of the pre-construction survey.

If active nests are identified, Marathon should cease construction, maintain a sufficient buffer around active nests to avoid disturbing breeding activities, and contact the Service. The Service recommends Marathon implement all practicable measures to avoid all take, such as suspending construction where necessary, and/or maintaining adequate buffers to protect the birds until the young have fledged. The Service further recommends that if you choose to conduct field surveys for nesting birds with the intent of avoiding take, that you maintain any documentation of the presence of migratory birds, eggs, and active nests, along with information regarding the qualifications of the biologist(s) performing the survey(s), and any avoidance measures implemented at the project site. Should surveys or other available information indicate a potential for take of migratory birds, their eggs, or active nests, the Service requests that you contact this office for further coordination on the extent of the impact and the long-term implications of the intended use of the project on migratory bird populations.

Bald and Golden Eagles

Bald and Golden Eagles are federally-protected under both the BGEPA and the MBTA. The BGEPA prohibits anyone without a permit issued by the Secretary of the Interior from taking bald eagles (*Haliaeetus leucocephalus*) or golden eagles, including their parts, nests, or eggs. The BGEPA provides criminal and civil penalties for persons who take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any

manner, any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. The BGEPA defines take as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. "Disturb" means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagles return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

The Service's overall management objective for golden eagle and bald eagle populations is to ensure no declines in breeding populations of either species. Numerous relatively minor disruptions to eagle behaviors from multiple activities, even if spatially or temporally distributed, may lead to disturbance that would not have resulted from fewer or more carefully sited activities. The accumulation of multiple land development projects or siting of multiple infrastructures that may be hazardous to eagles can cumulatively reduce the availability of alternative sites suitable for breeding, feeding, or sheltering, resulting in a greater than additive risk of take to eagles.

If your proposed activity is anticipated to result in take of bald or golden eagles, you must first apply for, and receive a permit to take prior to the taking. The determination of the likelihood of take will entail identifying the impacts of your proposed activity.
According to the Service's data, there is a documented golden eagle nest in proximity to your proposed activity. There may be additional eagle nests in proximity to the proposed activity.

Recommendations Specific to Bald Eagles

The size and shape of effective buffers vary depending on the topography and other ecological characteristics surrounding the nest site. In open areas where there are little or no forested or topographical buffers, such as in North Dakota, distance alone must often serve as the buffer. To avoid/minimize impacts to nesting bald eagles from construction activities, the Service recommends: (1) keeping a minimum ½-mile buffer between the activity and any bald eagle nest if no landscape buffer exists; (2) keeping a minimum 660-foot buffer and maintaining a landscape buffer or natural areas between the activity and around nest trees; and (3) avoiding activities during the bald eagle breeding season (February 1 – July 15). The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest sites and provide for alternative or replacement nest sites. The Service's May 2007, National Bald Eagle Management Guidelines contains detailed information on protecting bald eagles from disturbance due to human activity. The guidelines can be accessed on the Service's website at:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/NationalBaldEagleManagementGuidelines.pdf.

Recommendations Specific to Golden Eagles

Information available to the Service regarding all existing and recent breeding territory data indicates that golden eagles may be present in your proposed activity area. Therefore, we recommend that you make every effort to avoid impacts to golden eagles. If activities are planned within a golden eagle territory, an assessment of the potential for take of a golden eagle will need to be made in conjunction with this office. This entails identifying your proposed activities that may occur in a golden eagle breeding territory, and sharing that information with this office.

The Service recommends that surveys be conducted prior to any on-the-ground activities, to determine the extent of any golden eagle breeding territories in the area that may be affected by the proposed activity. The Service recommends that aerial nest surveys (preferably by helicopter) be conducted within a one-mile wide evaluation corridor or buffer to identify any occupied and unoccupied eagle nest sites in proximity to the proposed project area, including any proposed new access roads. Aerial surveys should be conducted between March 1 and May 15, before leaf-out, so that nests are visible, and so their status (active or inactive) can be determined. A nesting territory or inventoried habitat should be designated as unoccupied by golden eagles ONLY after at least two complete aerial surveys in a single breeding season. Aerial surveys should include the following:

1. Due to the ability to hover and facilitate observations of the ground, helicopters are preferred over fixed wing aircraft, although small aircraft may also be used. The Service requests that URS report any eagle nests found, as well as nests of any other raptors found during the survey. Whenever possible, two observers should be used to conduct the surveys.

2. Observations of any eagle nest sites should be recorded using GPS. The date, location, nest condition, activity status, and habitat should be recorded for each sighting.

3. We request that you share the qualifications of the biologist(s) conducting the survey, method of survey, and results of the survey with the Service.

Alternatively, URS could conduct ground surveys to identify golden eagle nests within a one-mile wide evaluation corridor or buffer between March 1 and May 15. However, be aware that ground surveys are much less reliable than aerial surveys, even during leaf-off conditions, and typically may miss 75% of eagle nests present. At least two ground observation periods lasting at least four hours or more are necessary to designate an inventoried habitat or territory as unoccupied as long as all potential nest sites and alternate nests are visible and monitored. If a golden eagle nest is observed, URS should contact the Service for further consultation.

Please note that maintenance of a minimum ½-mile buffer around active nests may not be adequate to ensure avoidance of take of golden eagles. If URS or the federal action agency, if applicable, in conjunction with the Service, determines that any level of take is anticipated, including take due to disturbance, you should work with this office to modify your activity to avoid the take, or apply for a take permit and include the following information:

1. Collect and synthesize relevant project and biological data.
2. Document project avoidance and minimization measures.
3. Quantify the anticipated take.
   Submit an application and furnish all required information.

Your email dated August 29, 2012, provided additional information about a pair of mature golden eagles (*Aquila chrysaetos*) observed doing a field survey on July 27, 2012. The Service is concerned that the project area could be a potential eagle breeding and foraging habitat, even though no nests were found in the seven days of ground surveys.

Thank you for the opportunity to comment on this project proposal. We request to review a copy of the draft Environmental Assessment for this project. The Environmental Assessment should include a section that addresses the concerns raised in this letter relative to the potential impacts to golden eagles, and BIA's assessment of the likelihood of take of golden eagles from the proposed project, in conjunction with this office. If you require further information or the project plans change, please contact Heidi Riddle of my staff at (701) 250-4481 or at the letterhead address.

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

cc: Bureau of Indian Affairs, Aberdeen, SD
Attn: M. Bercier
Bureau of Land Management, Dickinson, ND
ND Game & Fish Department, Bismarck, ND
Attn: G. Link

Final Plats

(Plat package for Felix USA 8-H and Felix USA 8-1TFH)

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

WELL LOCATION PLAT

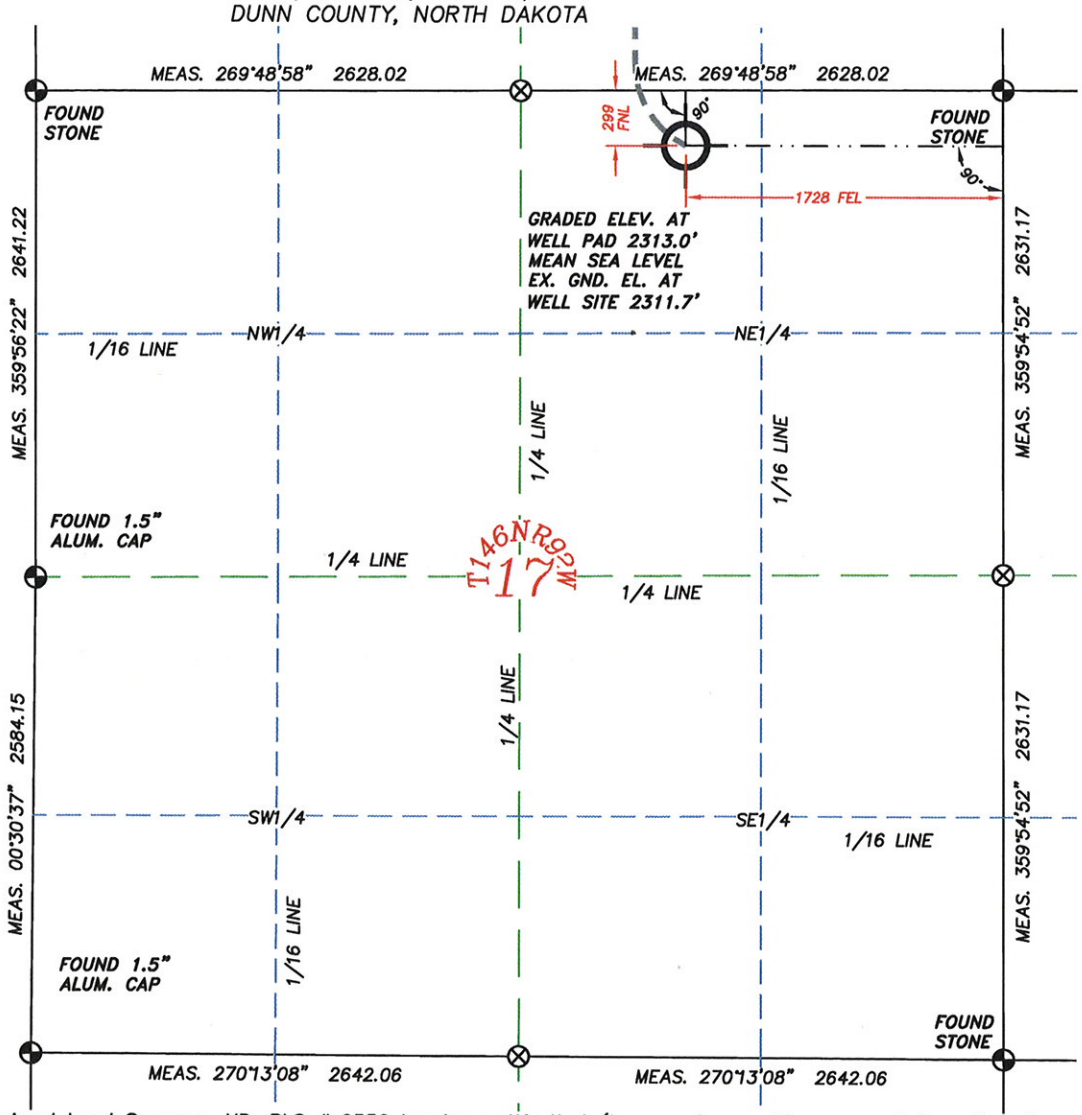
550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

Scale: 1"= 1000'

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1H
1728 FEET FROM THE EAST LINE AND 299 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1980 FEET FROM THE EAST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
FELIX USA 8-1H
(SURFACE HOLE LOCATION)
Lat. 47°28'19.06"
Long.102°25'30.33"W } NAD 83
Lat. 47.471962°
Long.102.425093°W
Elev. 2311.7' GROUND
Lat. 47°28'19.03"
Long.102°25'28.69"W } NAD 27
Lat. 47.471953°
Long.102.424636°W

MARATHON OIL COMPANY
FELIX USA 8-1H
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.62"
Long.102°25'34.13"W } NAD 83
Lat. 47.501005°
Long.102.426147°W
Lat. 47°30'03.59"
Long.102°25'32.48"W } NAD 27
Lat. 47.500997°
Long.102.425690°W



LEGEND

- FOUND OR SET CORNER
- CALCULATED CORNER
- NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1H being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 2 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2311.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution.
Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA
~SEAL~

JOB NO. 2010011
08/21/2012 CDC

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

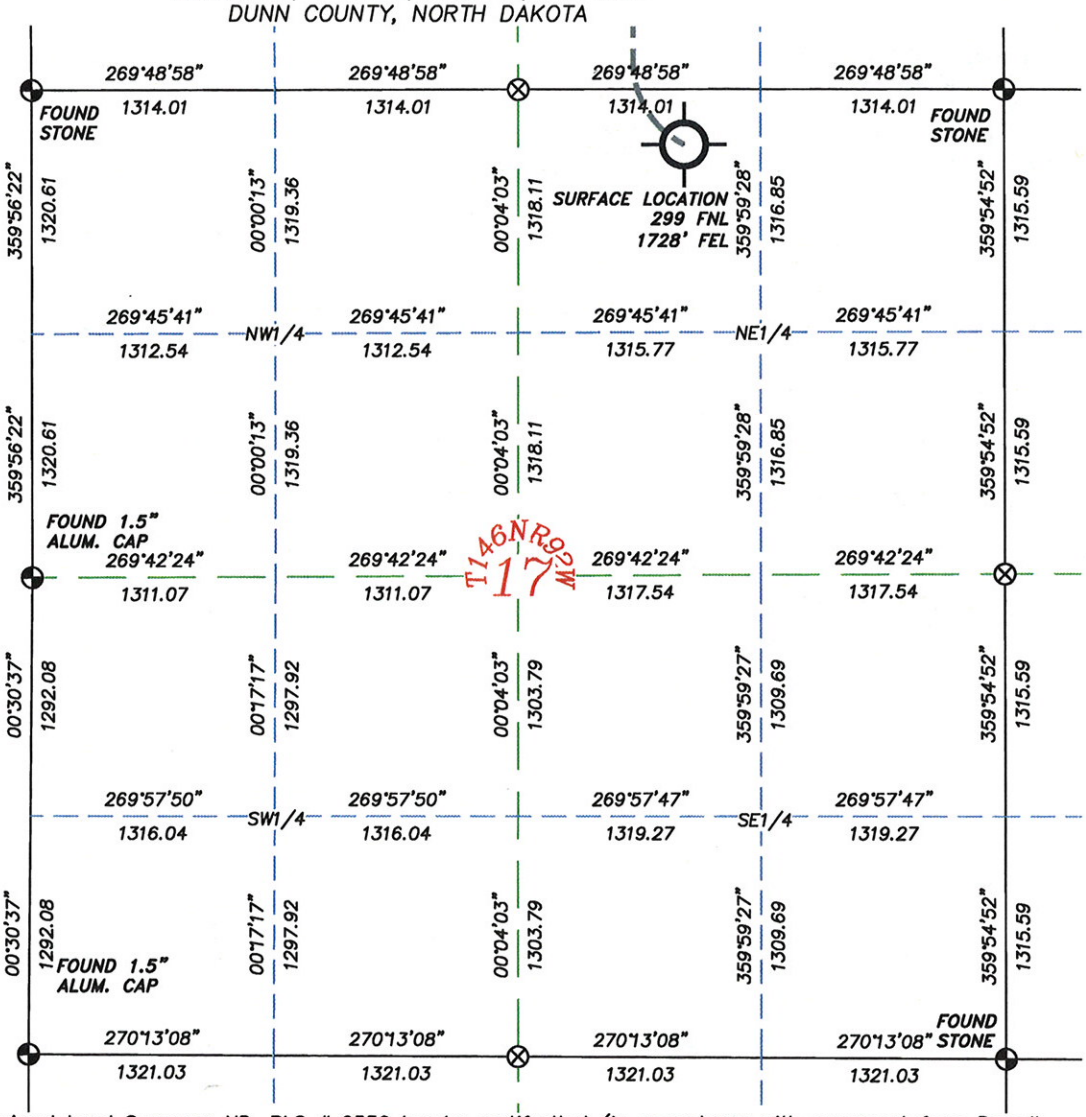
SURVEYING CONSULTANTS

550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

HORIZONTAL SECTION PLAT

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1H
1728 FEET FROM THE EAST LINE AND 299 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1980 FEET FROM THE EAST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

Scale: 1"= 1000'



MARATHON OIL COMPANY
FELIX USA 8-1H
(SURFACE HOLE LOCATION)
Lat. 47°28'19.06"
Long.102°25'30.33"W } NAD 83
Lat. 47.471962°
Long.102.425093°W
Elev. 2311.7' GROUND
Lat. 47°28'19.03"
Long.102°25'28.69"W } NAD 27
Lat. 47.471953°
Long.102.424636°W

MARATHON OIL COMPANY
FELIX USA 8-1H
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.62"
Long.102°25'34.13"W } NAD 83
Lat. 47.501005°
Long.102.426147°W
Lat. 47°30'03.59"
Long.102°25'32.48"W } NAD 27
Lat. 47.500997°
Long.102.425690°W

LEGEND

- ⊕ FOUND OR SET CORNER
- ⊗ CALCULATED CORNER
- ○ NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1H being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 2 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2311.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution.
Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA
~SEAL~

JOB NO. 2010011
08/21/2012 CDC

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

HORIZONTAL SECTION PLAT

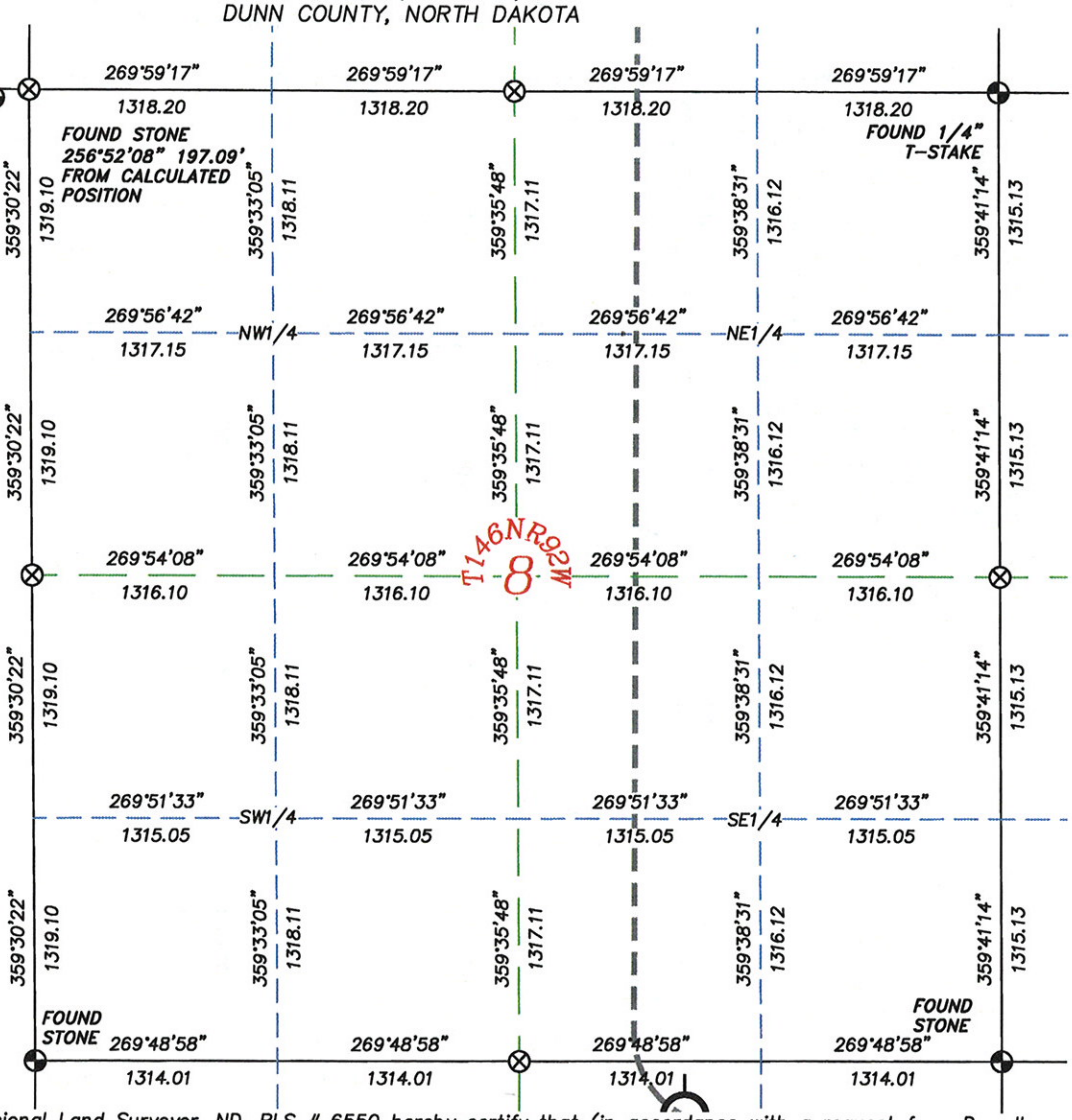
550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

Scale: 1"= 1000'

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1H
1728 FEET FROM THE EAST LINE AND 299 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1980 FEET FROM THE EAST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
FELIX USA 8-1H
(SURFACE HOLE LOCATION)
Lat. 47°28'19.06" (NAD 83)
Long.102°25'30.33"W (NAD 83)
Lat. 47.471962° (NAD 83)
Long.102.425093°W (NAD 83)
Elev. 2311.7' GROUND
Lat. 47°28'19.03" (NAD 27)
Long.102°25'28.69"W (NAD 27)
Lat. 47.471953° (NAD 27)
Long.102.424636°W (NAD 27)

MARATHON OIL COMPANY
FELIX USA 8-1H
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.62" (NAD 83)
Long.102°25'34.13"W (NAD 83)
Lat. 47.501005° (NAD 83)
Long.102.426147°W (NAD 83)
Lat. 47°30'03.59" (NAD 27)
Long.102°25'32.48"W (NAD 27)
Lat. 47.500997° (NAD 27)
Long.102.425690°W (NAD 27)



LEGEND

- FOUND OR SET CORNER
- CALCULATED CORNER
- NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1H being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 2 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2311.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution.
Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA
~SEAL~

JOB NO. 2010011
08/21/2012 CDC

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

HORIZONTAL SECTION PLAT

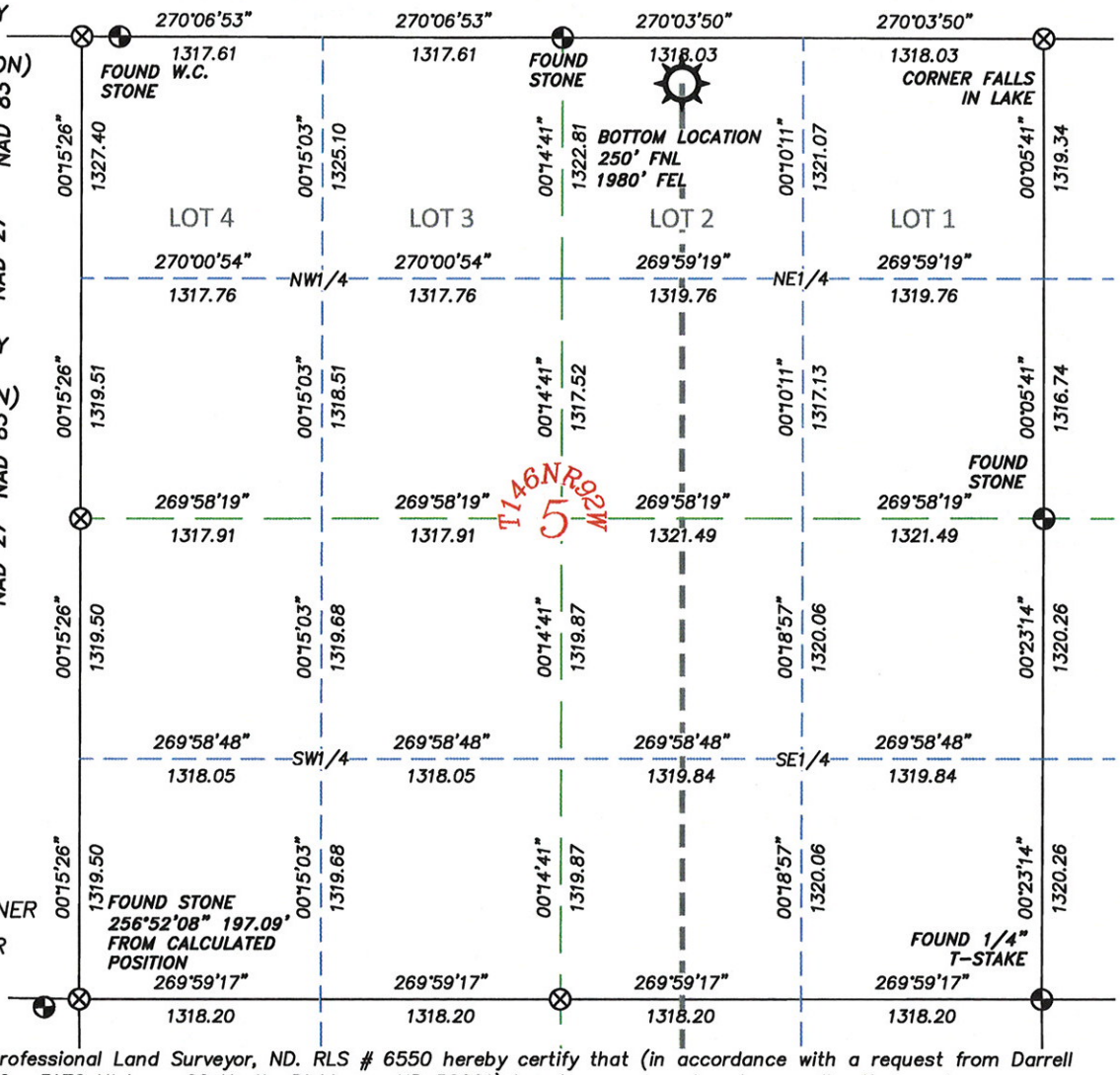
550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

Scale: 1"= 1000'

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1H
1728 FEET FROM THE EAST LINE AND 299 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1980 FEET FROM THE EAST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
FELIX USA 8-1H
(SURFACE HOLE LOCATION)
Lat. 47°28'19.06" } NAD 83
Long.102°25'30.33"W }
Lat. 47.471962° } NAD 83
Long.102.425093°W }
Elev. 2311.7' GROUND
Lat. 47°28'19.03" } NAD 27
Long.102°25'28.69"W }
Lat. 47.471953° } NAD 27
Long.102.424636°W }

MARATHON OIL COMPANY
FELIX USA 8-1H
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.62" } NAD 83
Long.102°25'34.13"W }
Lat. 47.501005° } NAD 83
Long.102.426147°W }
Lat. 47°30'03.59" } NAD 27
Long.102°25'32.48"W }
Lat. 47.500997° } NAD 27
Long.102.425690°W }



LEGEND

- FOUND OR SET CORNER
- CALCULATED CORNER
- NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1H being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 2 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2311.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution.
Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA
~SEAL~

JOB NO. 2010011
08/21/2012 CDC

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

BOTTOM HOLE LOCATION PLAT

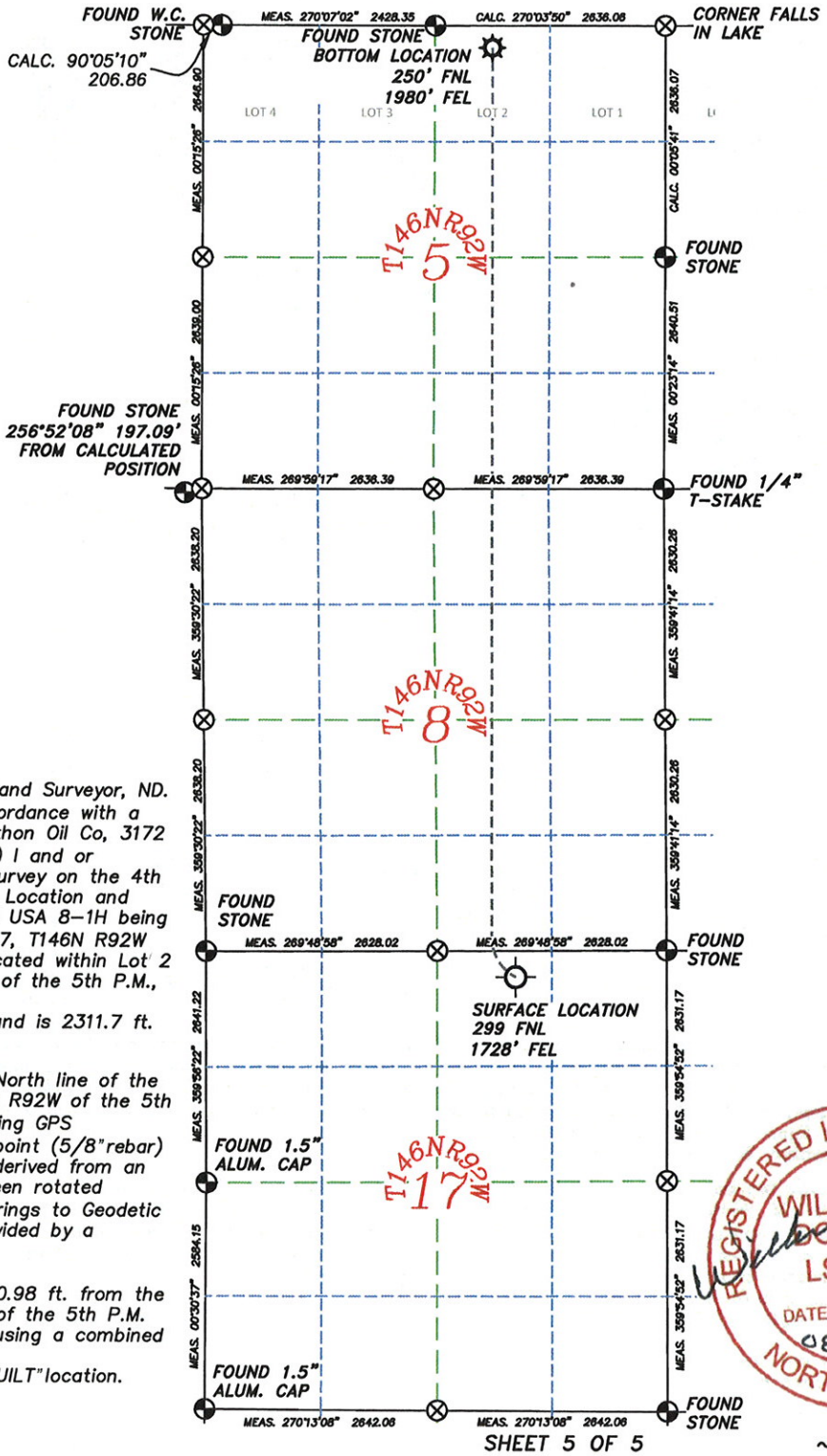
550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1H
1728 FEET FROM THE EAST LINE AND 299 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1980 FEET FROM THE EAST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

Scale: 1"= 2000'

MARATHON OIL COMPANY
FELIX USA 8-1H
(SURFACE HOLE LOCATION)
Lat. 47°28'19.06"
Long.102°25'30.33"W NAD 83
Lat. 47.471962°
Long.102.425093°W
Elev. 2311.7' GROUND
Lat. 47°28'19.03"
Long.102°25'28.69"W NAD 27
Lat. 47.471953°
Long.102.424636°W

MARATHON OIL COMPANY
FELIX USA 8-1H
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.62"
Long.102°25'34.13"W NAD 83
Lat. 47.501005°
Long.102.426147°W
Lat. 47°30'03.59"
Long.102°25'32.48"W NAD 27
Lat. 47.500997°
Long.102.425690°W



LEGEND

- FOUND OR SET CORNER
- CALCULATED CORNER
- NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1H being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 2 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2311.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution. Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

JOB NO. 2010011
08/21/2012 CDC

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA

~SEAL~

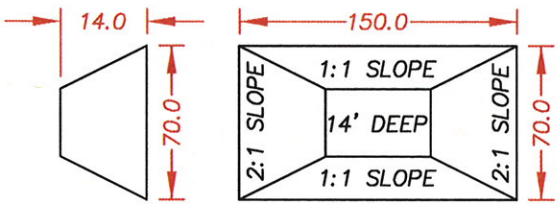
MARATHON OIL COMPANY
FELIX USA 8-1H
LOCATED WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

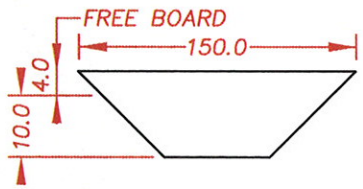
WELL SITE ELEVATION	2311.7
GRADED PAD ELEVATION	2313.0

EXCAVATION	27,583 CU. YDS. (CUT)
PLUS PIT	3,610 CU. YDS. (CUT)
	31,193 CU. YDS
EMBANKMENT	46,801 CU. YDS. (FILL)
PLUS SHRINKAGE (+30%)	14,040 CU. YDS. (FILL)
	60,842 CU. YDS.
STOCKPILE PIT	3,610 CU. YDS (SPOIL)
STOCKPILE TOP SOIL (8")	7,004 CU. YDS. (TOP SOIL-CUT)
ROAD EMBANKMENT & STOCKPILE FROM PAD	-33,259 CU. YDS. (SPOIL)
TOTAL CUT VOLUME	38,197 CU. YDS.
TOTAL FILL VOLUME	60,842 CU. YDS.
TOTAL SPOIL VOLUME	-29,649 CU. YDS.
DISTURBED AREA FROM PAD	6.48 ACRES
AREA INSIDE BARBED WIRE FENCE	8.18 ACRES

NOTE
ALL FILL END SLOPES ARE DESIGNED AT 2:1 SLOPES.
ALL CUT END SLOPES ARE DESIGNED AT 2:1 SLOPES.
ALL STOCKPILES ARE TO BE BUILT AT 3:1 SLOPES.

MARATHON H&P FLEX RIG PIT





WELL SITE LOCATION
1889 FEET FROM THE EAST LINE
840 FEET FROM THE NORTH LINE

CONFIDENTIALITY NOTES:
THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: N.T.S.
DATE: 08/19/2012	JOB NO: 2010011	SHEET 1 OF 8
REV:		

LOCATION:
FELIX USA 8-1H
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON,
NORTH DAKOTA 58601

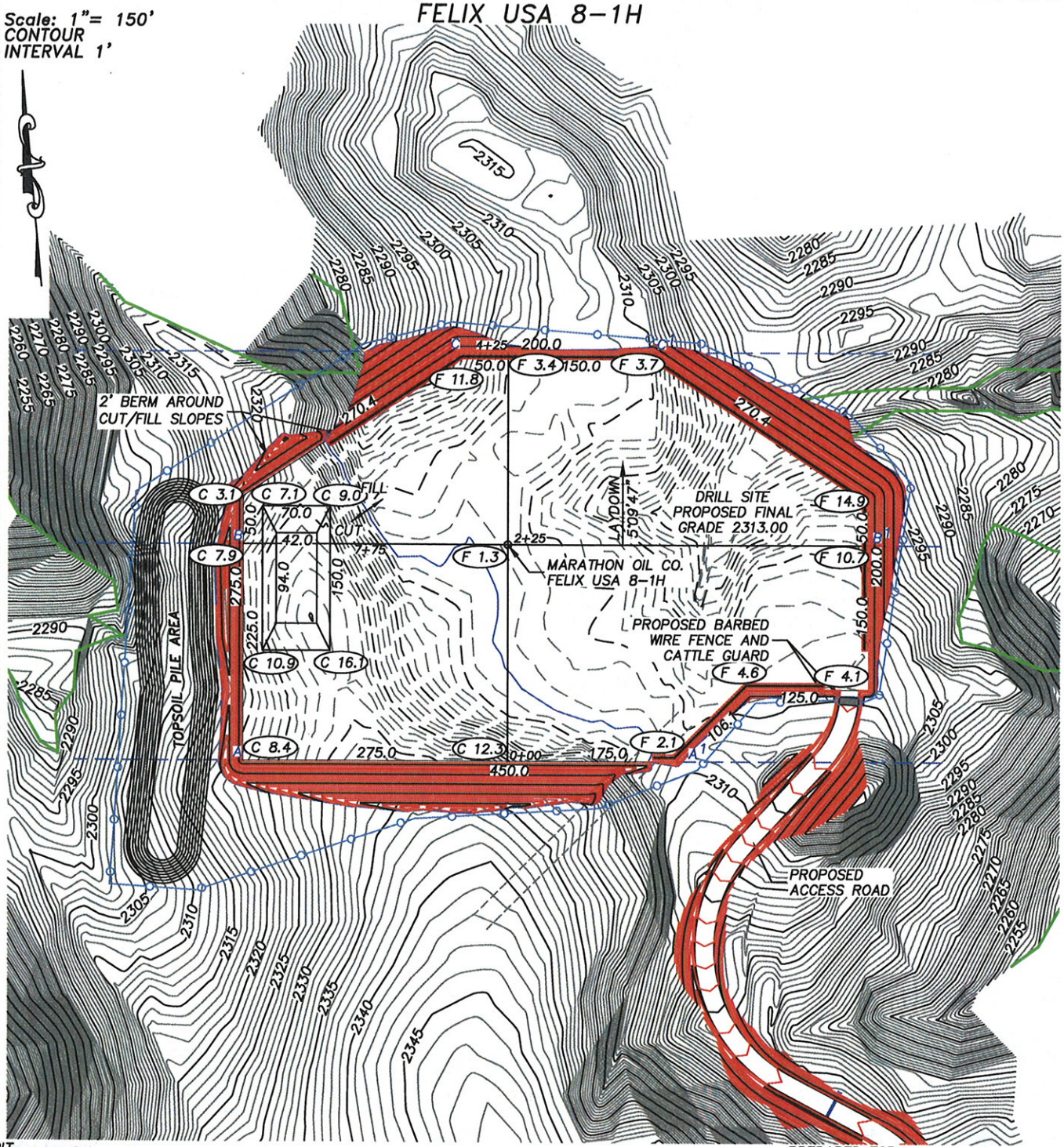
CONSTRUCTION DATA PAGE

WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
MARATHON OIL COMPANY
FELIX USA 8-1H

P.O. BOX 820
GREEN RIVER, WYOMING 82935

550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

Scale: 1"= 150'
CONTOUR
INTERVAL 1'



PIT
150' X 70' X 14'
SLOPE = 1:1 & 2:1
CAPACITY
17,361 BBLs FULL
10,676 BBLs WORKING
CAPACITY WITH 4'
FREE BOARD

JOB NO. 2010011
08/19/2012 CDC

CUT SLOPES: 2:1
FILL SLOPES: 2:1
QUANTITIES:
TOTAL CUT = 38,197 BANK CUBIC YARDS
TOTAL FILL = 60,842 BANK CUBIC YARDS
TOPSOIL AT 8 INCHES OF DEPTH = 7,004 BANK CUBIC YARDS
SPOIL = -29,649 BANK CUBIC YARDS
DISTURBED AREA = 282,264 SQ. FT. OR 6.48 ACRES

PREPARED FOR:
MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

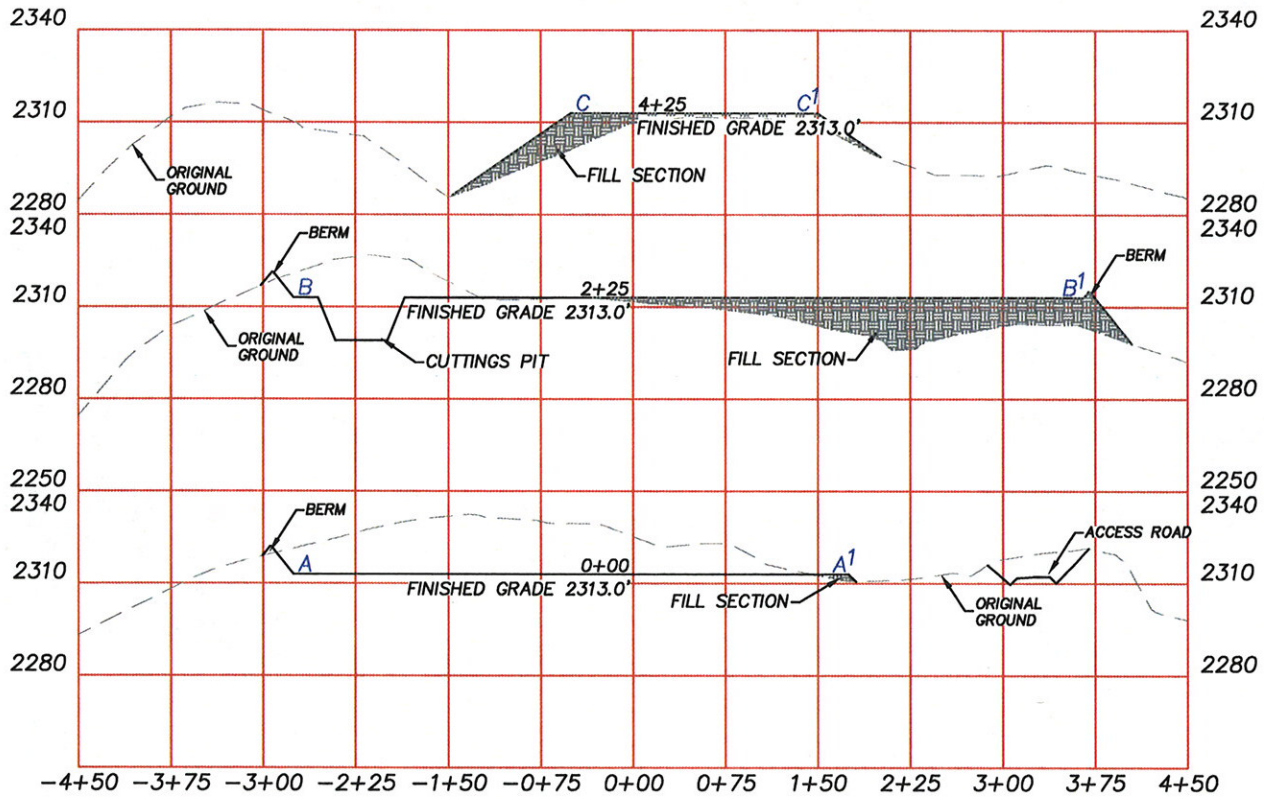
LOCATION:
FELIX USA 8-1 TFH
1889 FEL and 840 FNL
FALLS WITHIN THE NW/4 NE/4 SECTION 17,
T146N, R92W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS

P.O. BOX 820
GREEN RIVER, WYOMING 82935

550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

MARATHON OIL COMPANY
FELIX USA 8-1H



PIT
150' X 70' X 14'
SLOPE = 1:1 & 2:1
CAPACITY
17,361 BBLs FULL
10,676 BBLs WORKING
CAPACITY WITH 4'
FREE BOARD

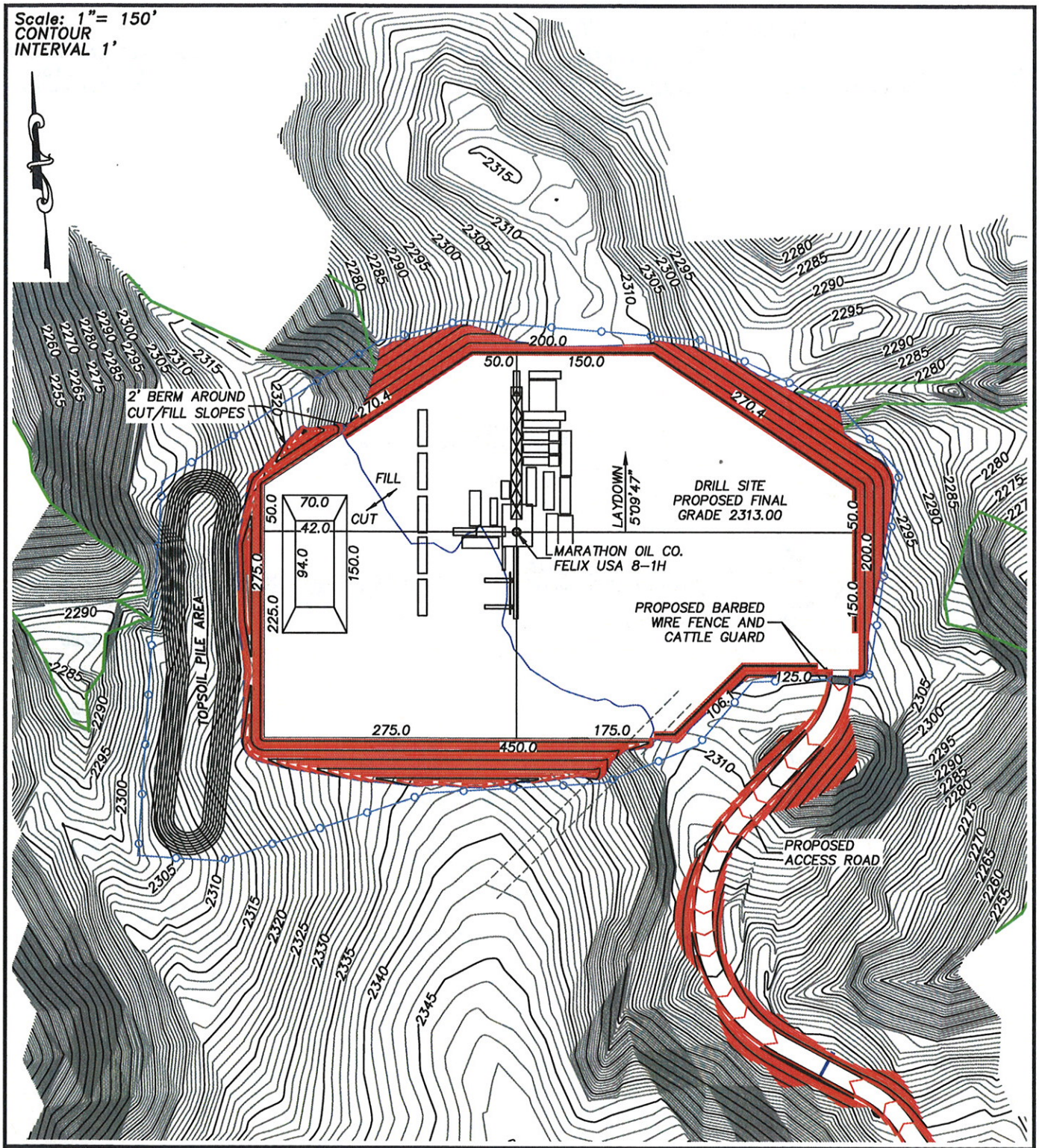
JOB NO. 2010011
08/19/2012 CDC

HORIZONTAL SCALE: 1"=150 FEET
VERTICAL SCALE: 1"=60 FEET

CUT SLOPES: 2:1
FILL SLOPES: 2:1
QUANTITIES:
TOTAL CUT = 38,197 BANK CUBIC YARDS
TOTAL FILL = 60,842 BANK CUBIC YARDS
TOPSOIL AT 8 INCHES OF DEPTH = 7,004 BANK CUBIC YARDS
SPOIL = -29,649 BANK CUBIC YARDS
DISTURBED AREA = 282,264 SQ. FT. OR 6.48 ACRES

PREPARED FOR:
MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

LOCATION:
FELIX USA 8-1 TFH
1889 FEL and 840 FNL
FALLS WITHIN THE NW/4 NE/4 SECTION 17,
T146N, R92W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA



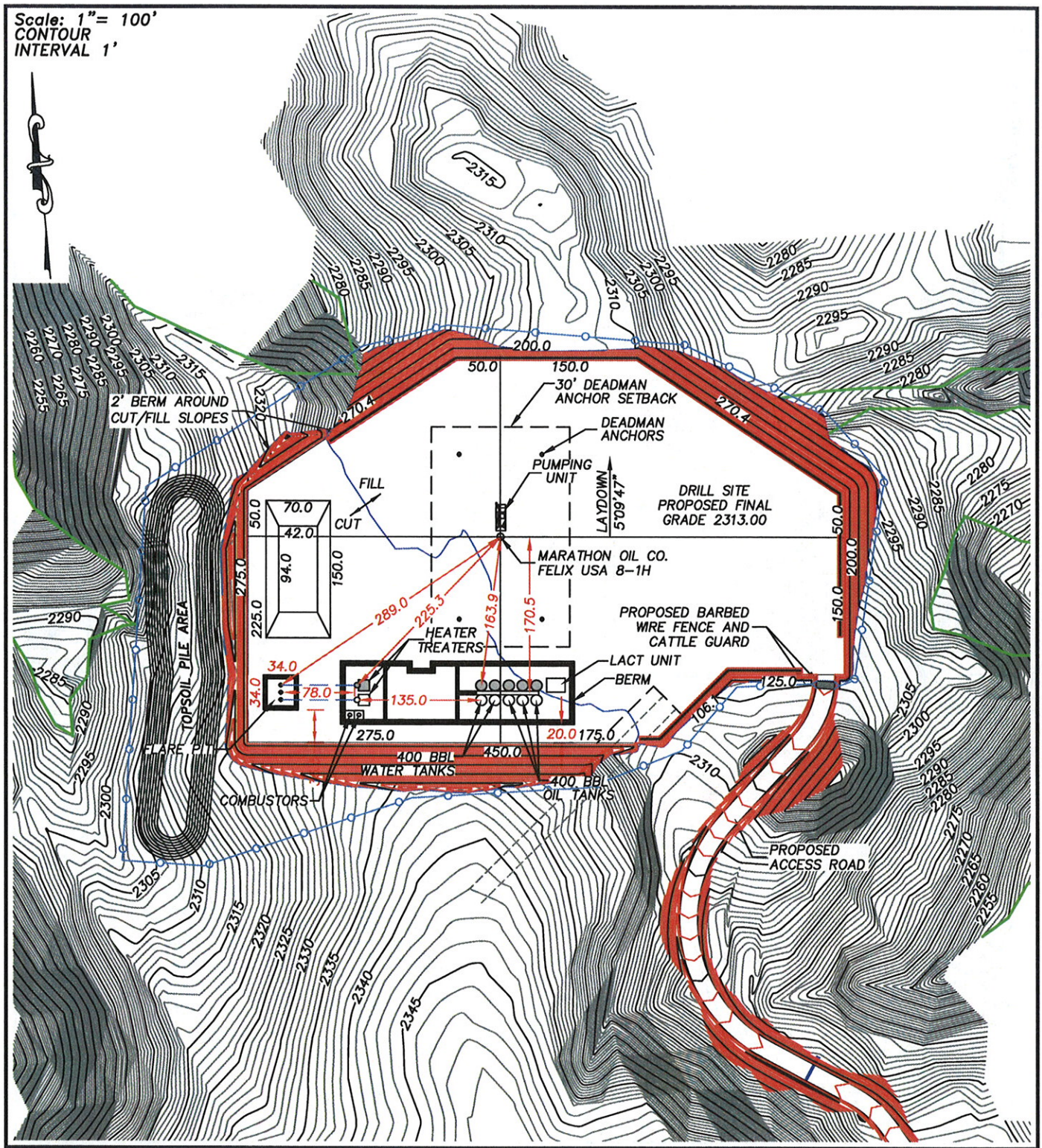
WILLIAM H. SMITH
& ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=100'
DATE: 08/19/2012	JOB NO: 2010011	SHEET 4 OF 8
REV:		

LOCATION:
FELIX USA 8-1H
WITHIN THE NW/4
NE/4 SECTION 17,
T 146 N, R 92 W,
5TH PM.
DUNN COUNTY,
NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON,
NORTH DAKOTA 58601

RIG LAYOUT
PAGE



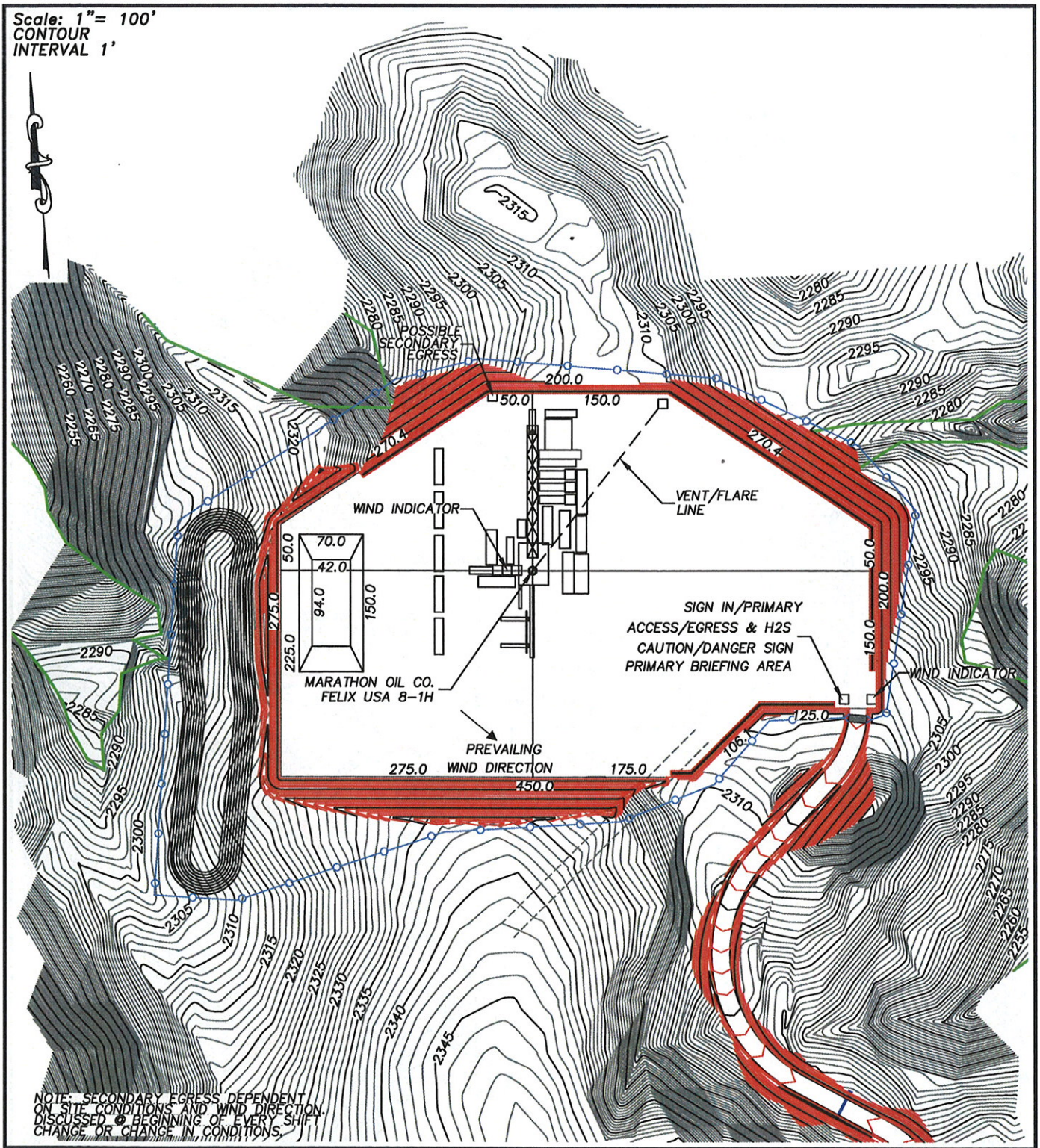
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=100'
DATE: 08/19/2012	JOB NO: 2010011	SHEET 5 OF 8
REV:		

LOCATION:
FELIX USA 8-1H
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

PRODUCTION FACILITIES LAYOUT PAGE



WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=100'
DATE: 08/19/2012	JOB NO: 2010011	SHEET 6 OF 8
REV:		

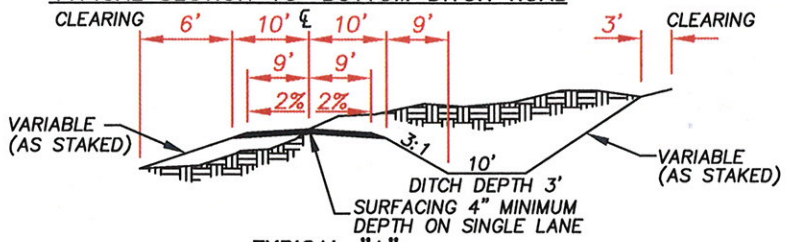
LOCATION:
FELIX USA 8-1H
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

H2S DRILLING OPERATIONS PAGE

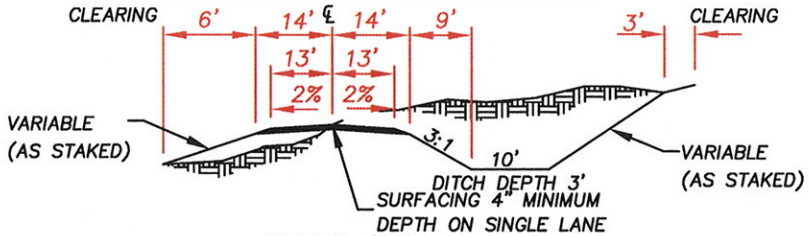
FELIX USA 8-1H
ROADWAY TYPICAL SECTIONS

TYPICAL SECTION 10' BOTTOM DITCH ROAD



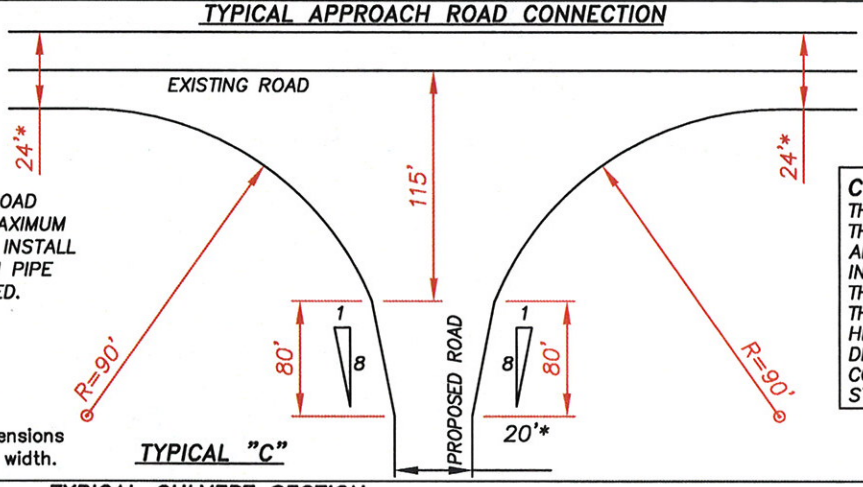
TYPICAL "A"

TYPICAL SECTION 10' BOTTOM DITCH ROAD



TYPICAL "B"

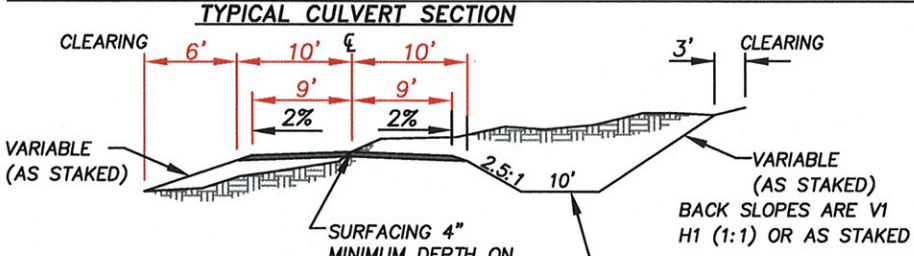
TYPICAL APPROACH ROAD CONNECTION



NOTE: * Dimensions are surfaced width.

TYPICAL "C"

TYPICAL CULVERT SECTION



FILL SLOPES ARE V1 H1.5 (1.5:1) OR AS STAKED

TYPICAL "D"

FILL SLOPES
3:1 UNDER 4' HEIGHT
2:1 OVER 4' HEIGHT
(–) SLOPES STEEPER THAN 2:1 WILL BE SUBJECT TO FS APPROVAL

CUT SLOPES
3:1 UNDER 10' HEIGHT
2:1 10' TO 20' HEIGHT
(–) VARIABLE OVER 20' HEIGHT W/FS APPROVAL

FILL WIDENING
2' TO 5' HIGH/ADD 1'
OVER 5' HIGH/ADD 2'

CURVE WIDENING
130 / R

CONFIDENTIALITY NOTES:
THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

DITCH WIDTH SHALL BE THE LARGER OF THE FOLLOWING:
A. STANDARD DITCH WIDTH.
B. 2 TIMES THE PIPE DIAMETER.
C. 4.25'

DITCH DEPTH SHALL BE:

CMP DIAMETER	DITCH DEPTH
18"	2.5'
24"	3.0'
36"	4.0'
48"	5.0'

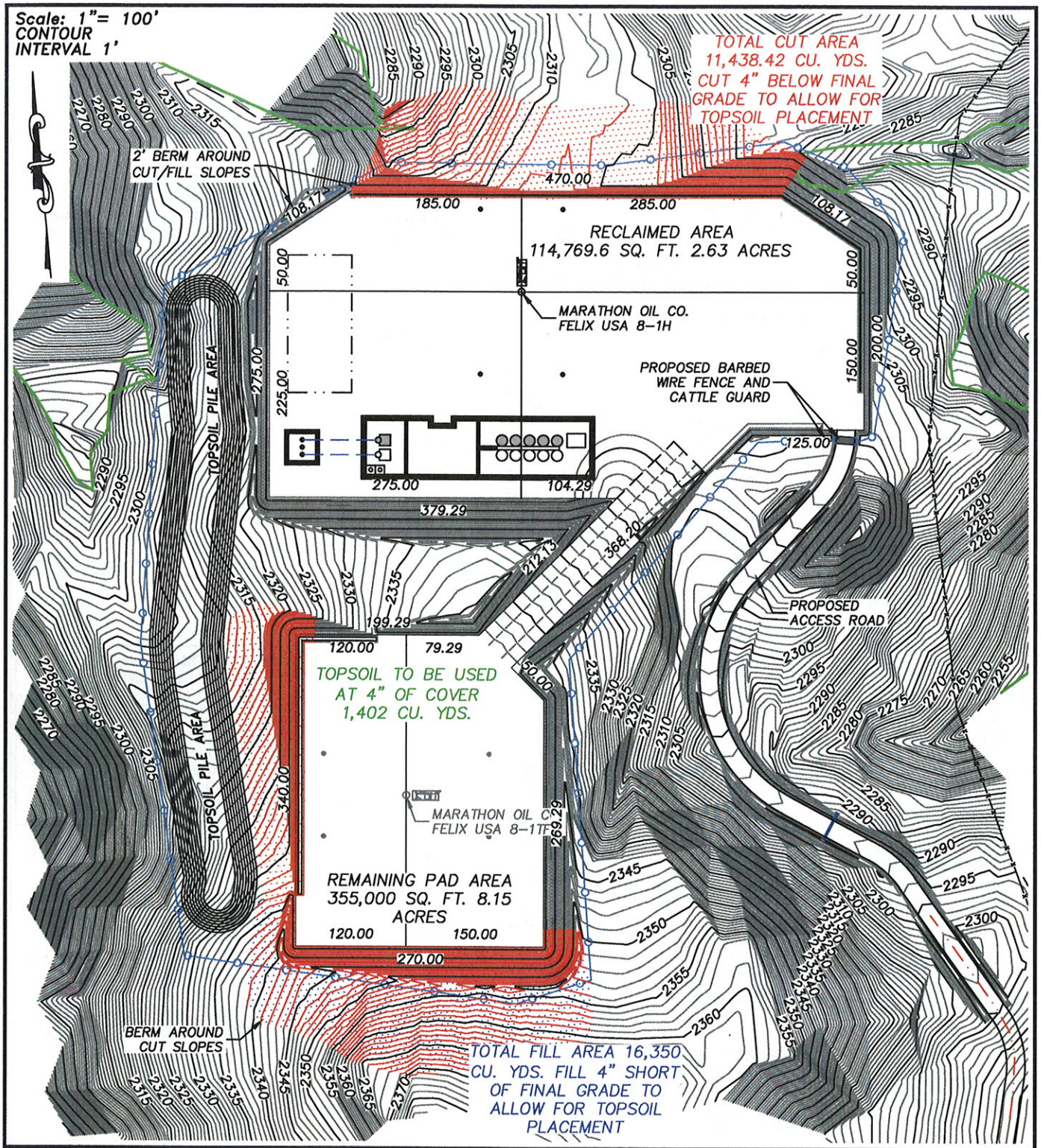
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: N.T.S.
DATE: 08/19/2012	JOB NO: 2010011	SHEET 7 OF 8

LOCATION:
FELIX USA 8-1H
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

TYPICAL ROADWAY DIAGRAM



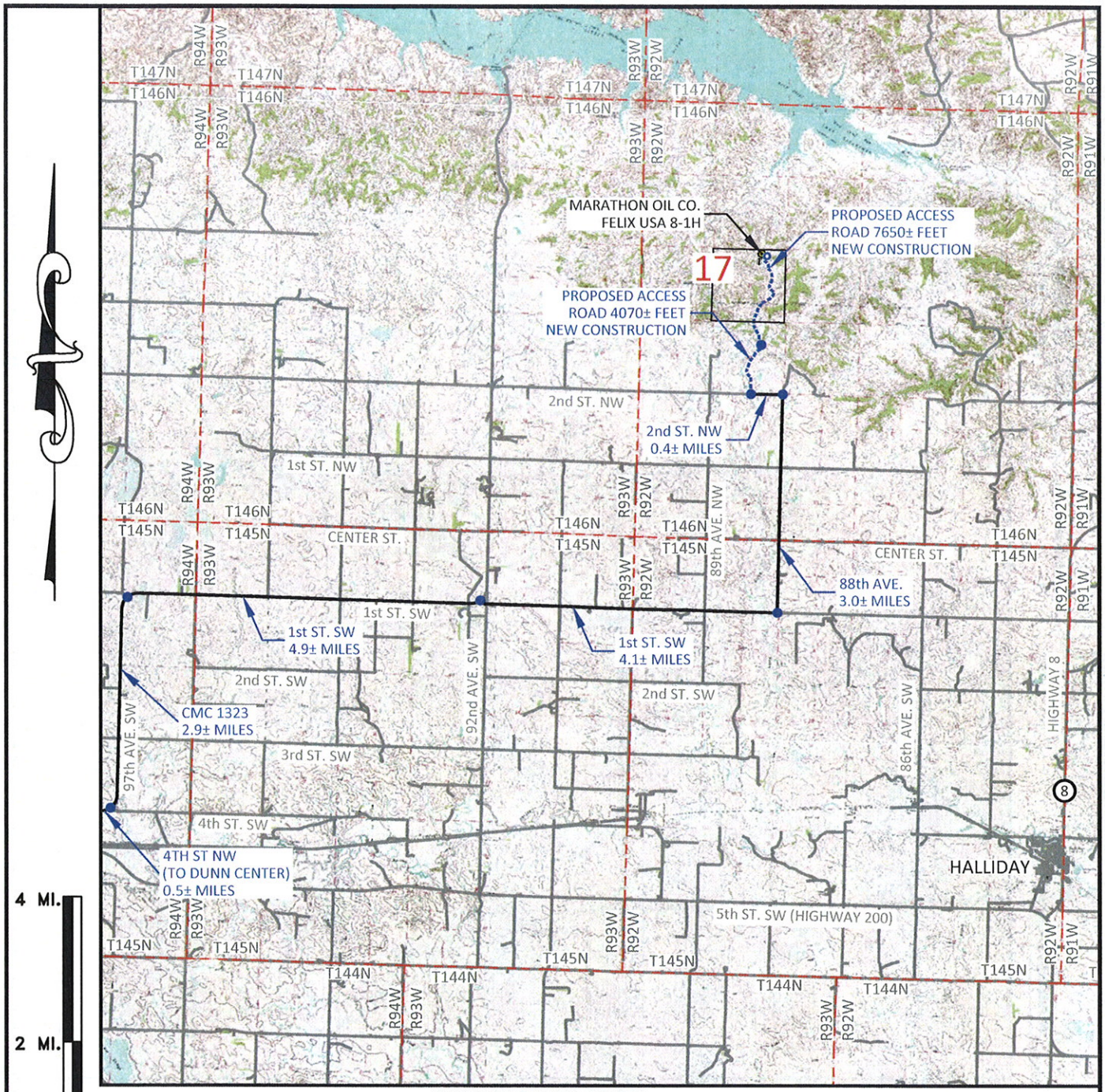
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=100'
DATE: 08/19/2012	JOB NO: 2010011	SHEET 8 OF 8
REV:		

LOCATION:
FELIX USA 8-1H
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

RECLAIMED PAD



4 MI.
2 MI.
1 MI.
0 1 MI. 2 MI. 4 MI.

LEGEND
EXISTING ROADS
PROPOSED ROADS

CONFIDENTIALITY NOTES:
THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

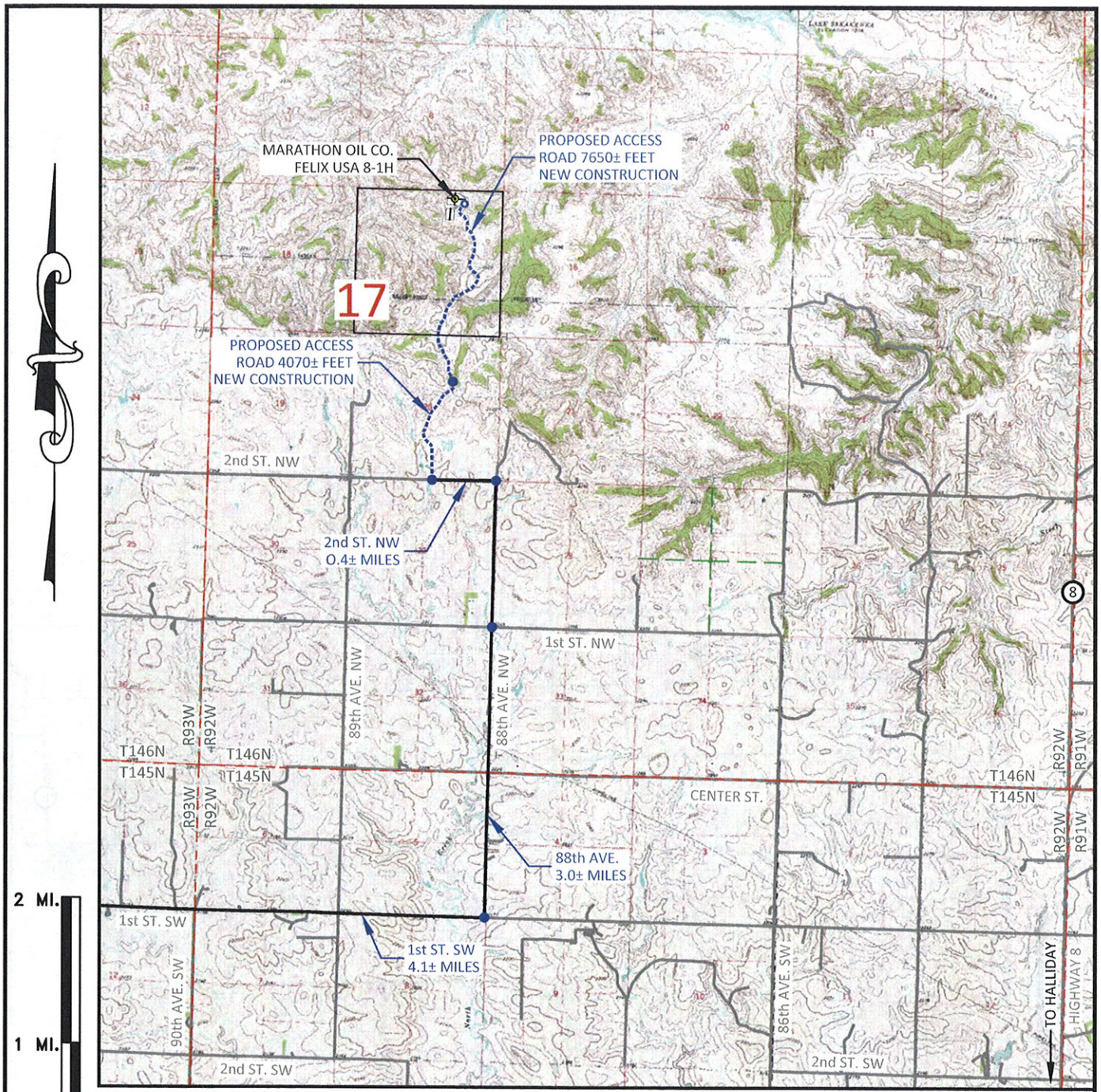
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=2 MILE
DATE: 08/18/2012	JOB NO: 2010011	SHEET 1 OF 3

LOCATION:
FELIX USA 8-1H
WITHIN THE NE/4 NW/4 SECTION 16, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

MAP "A"
COUNTY ACCESS ROUTE



CONFIDENTIALITY NOTES:
THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

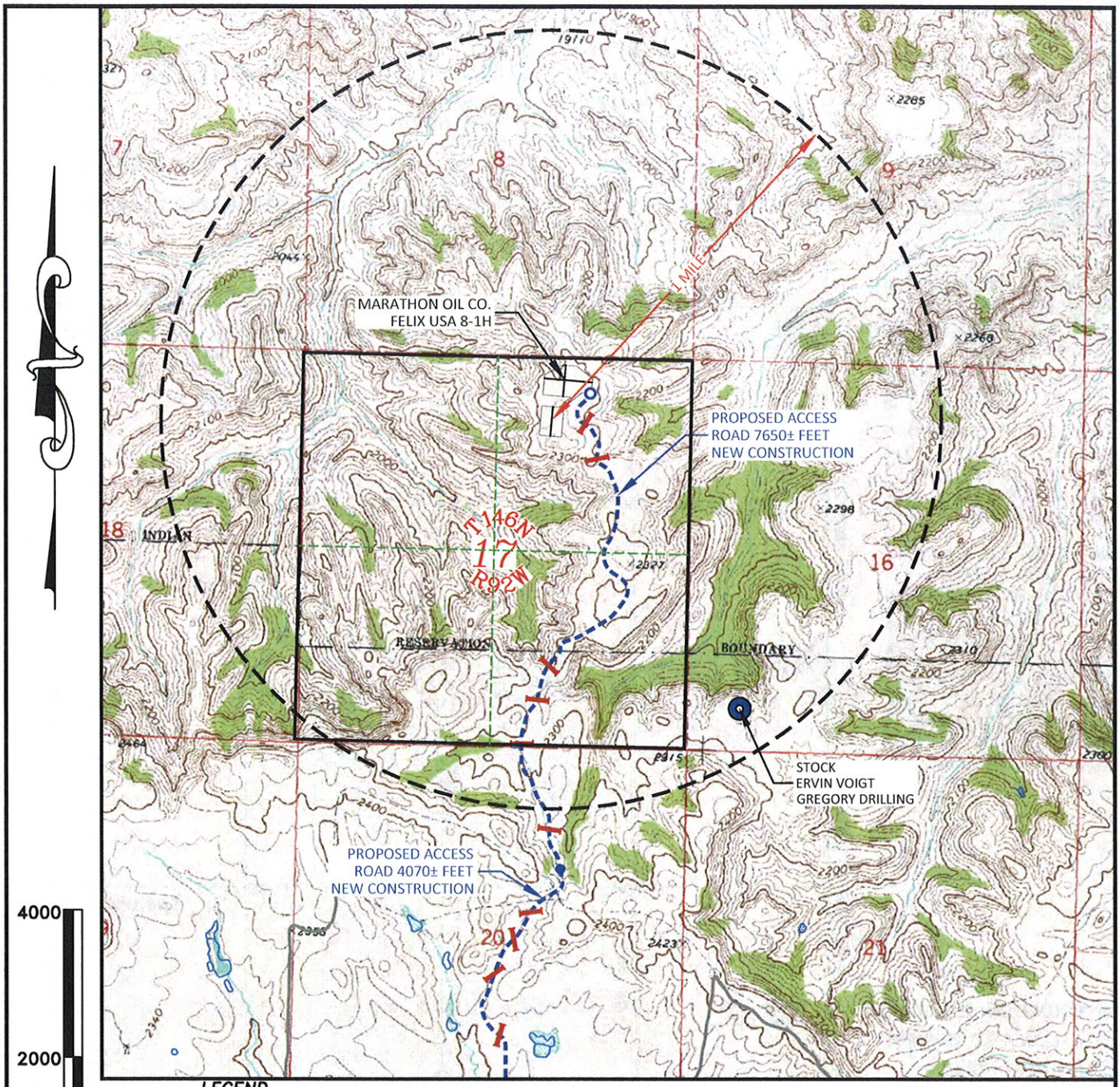
WILLIAM H. SMITH
& ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

LOCATION:
FELIX USA 8-1H
WITHIN THE NE/4
NW/4 SECTION 16,
T 146 N, R 92 W,
5TH PM.
DUNN COUNTY,
NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON,
NORTH DAKOTA 58601

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=1 MILE
DATE: 08/18/2012	JOB NO: 2010011	SHEET 2 OF 3

MAP "B"
QUAD ACCESS ROUTE



CONFIDENTIALITY NOTES:
THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=2000'
DATE: 08/18/2012	JOB NO: 2010011	SHEET 3 OF 3

LOCATION:
FELIX USA 8-1H
WITHIN THE NE/4 NW/4 SECTION 16, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON,
NORTH DAKOTA 58601

MAP "C"
ONE MILE RADIUS MAP

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

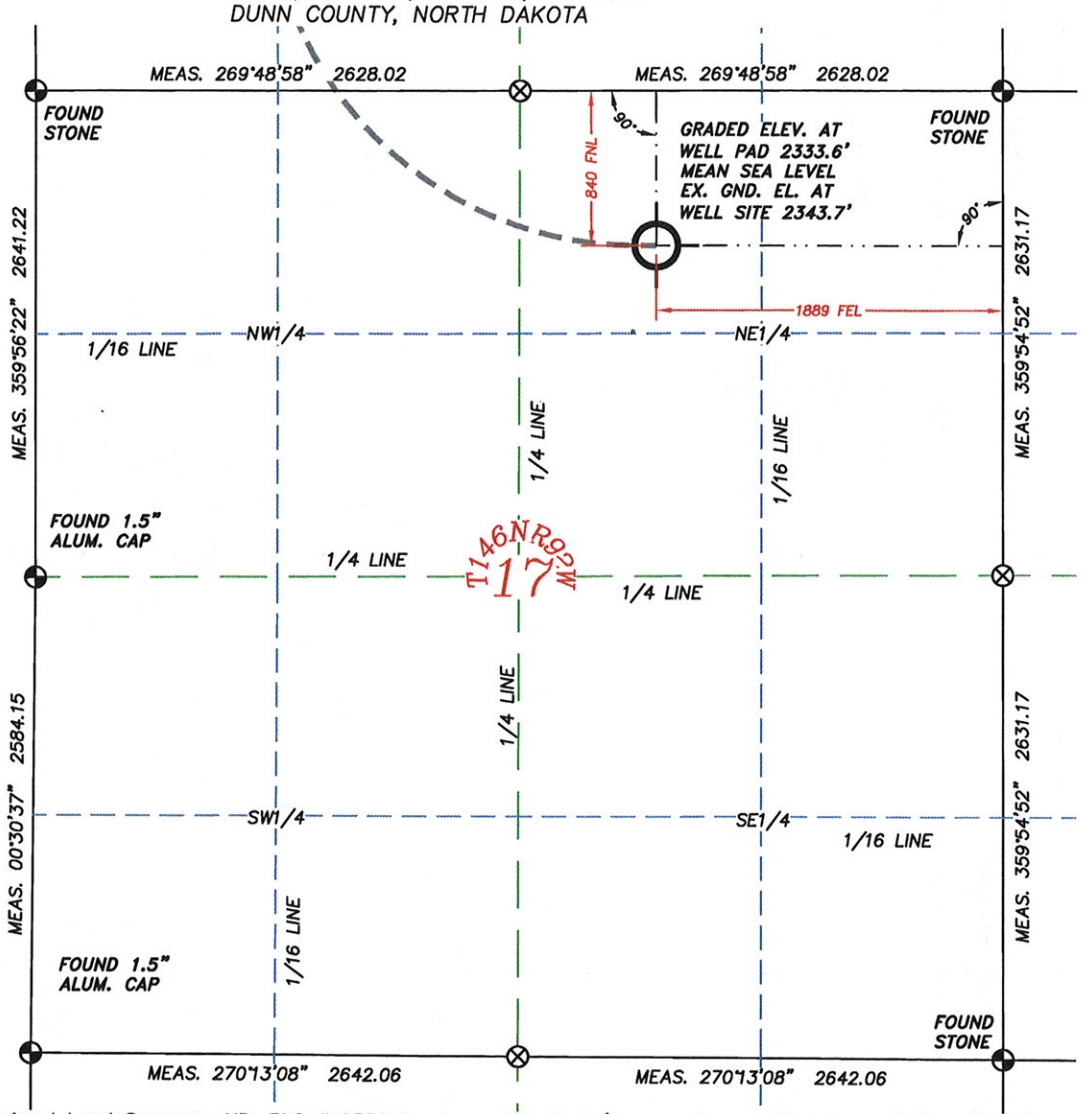
WELL LOCATION PLAT

Scale: 1"= 1000'

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1TFH
1889 FEET FROM THE EAST LINE AND 840 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1320 FEET FROM THE WEST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(SURFACE HOLE LOCATION)
Lat. 47°28'13.73"
Long.102°25'32.68"W NAD 83
Lat. 47.470480°
Long.102.425743°W
Elev. 2343.7' GROUND
Lat. 47°28'13.70"
Long.102°25'31.03"W NAD 27
Lat. 47.470471°
Long.102.425286°W

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.65"
Long.102°26'02.85"W NAD 83
Lat. 47.501014°
Long.102.434125°W
Lat. 47°30'03.62"
Long.102°26'01.20"W NAD 27
Lat. 47.501006°
Long.102.433667°W



LEGEND

- FOUND OR SET CORNER
- CALCULATED CORNER
- NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1TFH being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 3 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2343.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution.
Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA
~SEAL~

JOB NO. 2010011
08/21/2012 CDC

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

HORIZONTAL SECTION PLAT

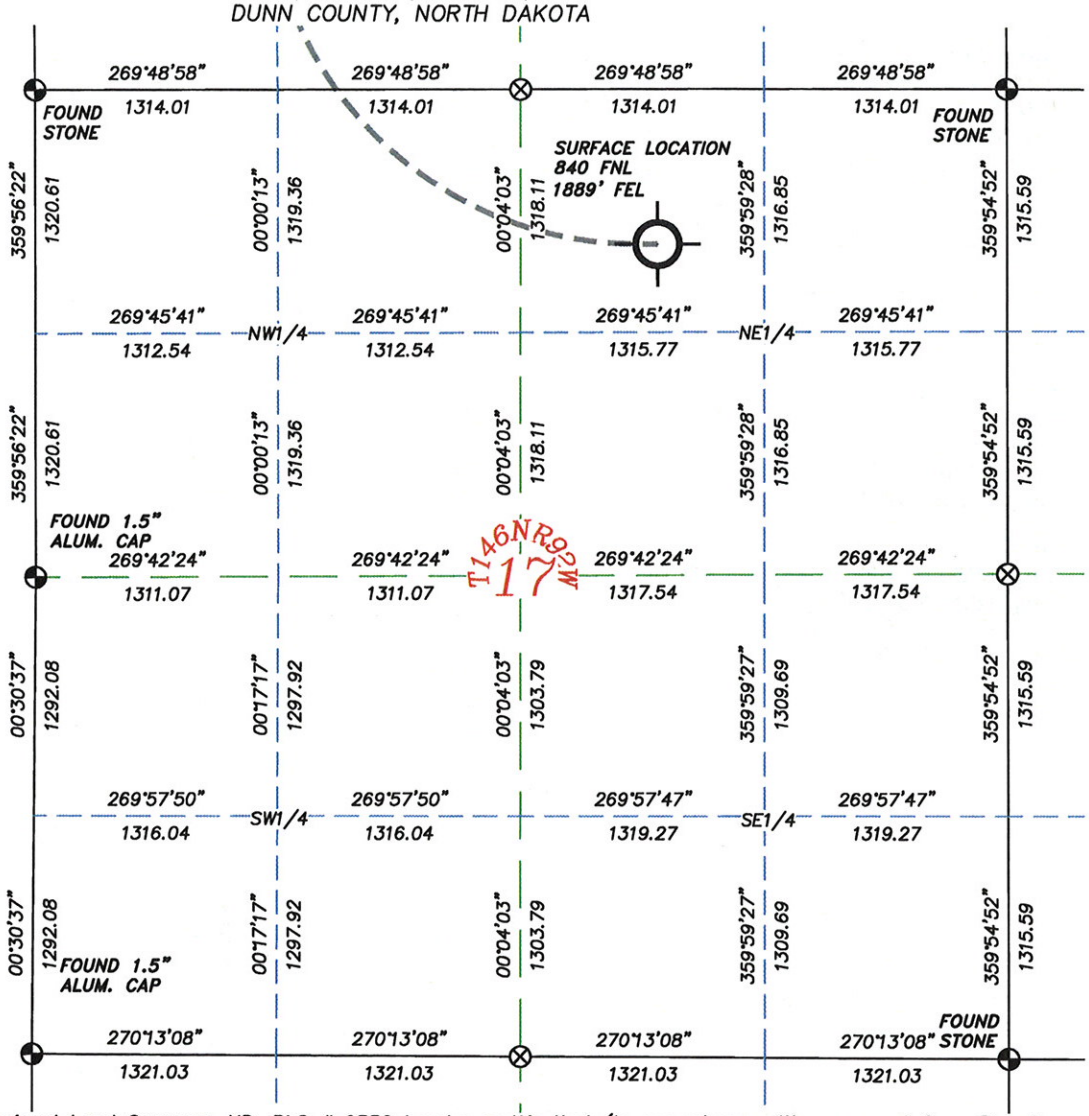
550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

Scale: 1"= 1000'

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1TFH
1889 FEET FROM THE EAST LINE AND 840 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1320 FEET FROM THE WEST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(SURFACE HOLE LOCATION)
Lat. 47°28'13.73"
Long.102°25'32.68"W NAD 83
Lat. 47.470480°
Long.102.425743°W
Elev. 2343.7' GROUND
Lat. 47°28'13.70"
Long.102°25'31.03"W NAD 27
Lat. 47.470471°
Long.102.425286°W

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.65"
Long.102°26'02.85"W NAD 83
Lat. 47.501014°
Long.102.434125°W
Lat. 47°30'03.62"
Long.102°26'01.20"W NAD 27
Lat. 47.501006°
Long.102.433667°W



LEGEND

- ⊕ FOUND OR SET CORNER
- ⊗ CALCULATED CORNER
- ○ NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1TFH being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 3 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2343.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution.
Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA
~SEAL~

JOB NO. 2010011
08/21/2012 CDC

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

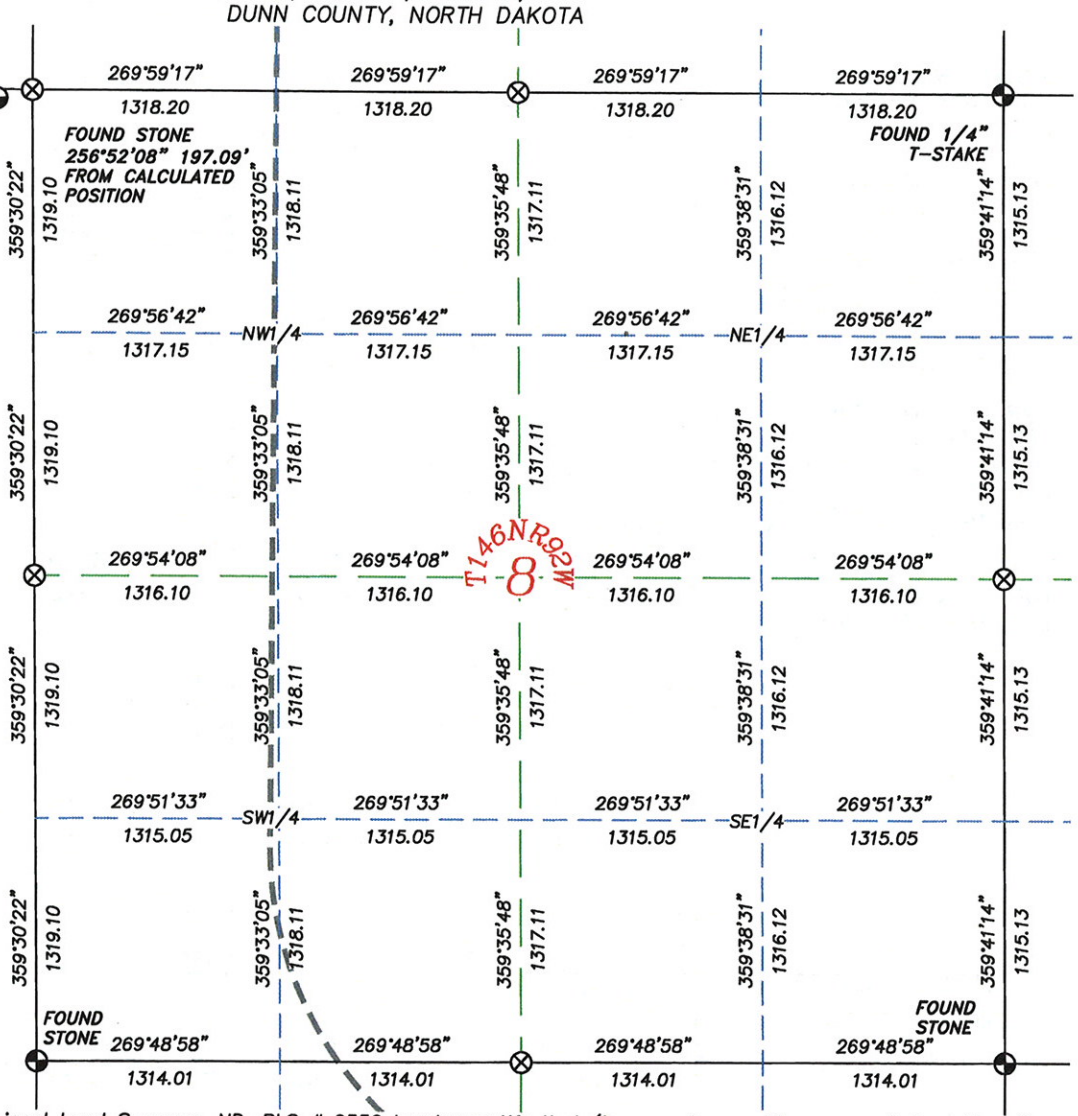
HORIZONTAL SECTION PLAT

Scale: 1"= 1000' N 500 250 250

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1TFH
1889 FEET FROM THE EAST LINE AND 840 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1320 FEET FROM THE WEST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(SURFACE HOLE LOCATION)
Lat. 47°28'13.73"
Long.102°25'32.68"W NAD 83
Lat. 47.470480°
Long.102.425743°W
Elev. 2343.7' GROUND
Lat. 47°28'13.70"
Long.102°25'31.03"W NAD 27
Lat. 47.470471°
Long.102.425286°W

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.65"
Long.102°26'02.85"W NAD 83
Lat. 47.501014°
Long.102.434125°W
Lat. 47°30'03.62"
Long.102°26'01.20"W NAD 27
Lat. 47.501006°
Long.102.433667°W



LEGEND

- FOUND OR SET CORNER
- CALCULATED CORNER
- NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1TFH being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 3 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2343.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution.
Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA
~SEAL~

JOB NO. 2010011
08/21/2012 CDC

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

HORIZONTAL SECTION PLAT

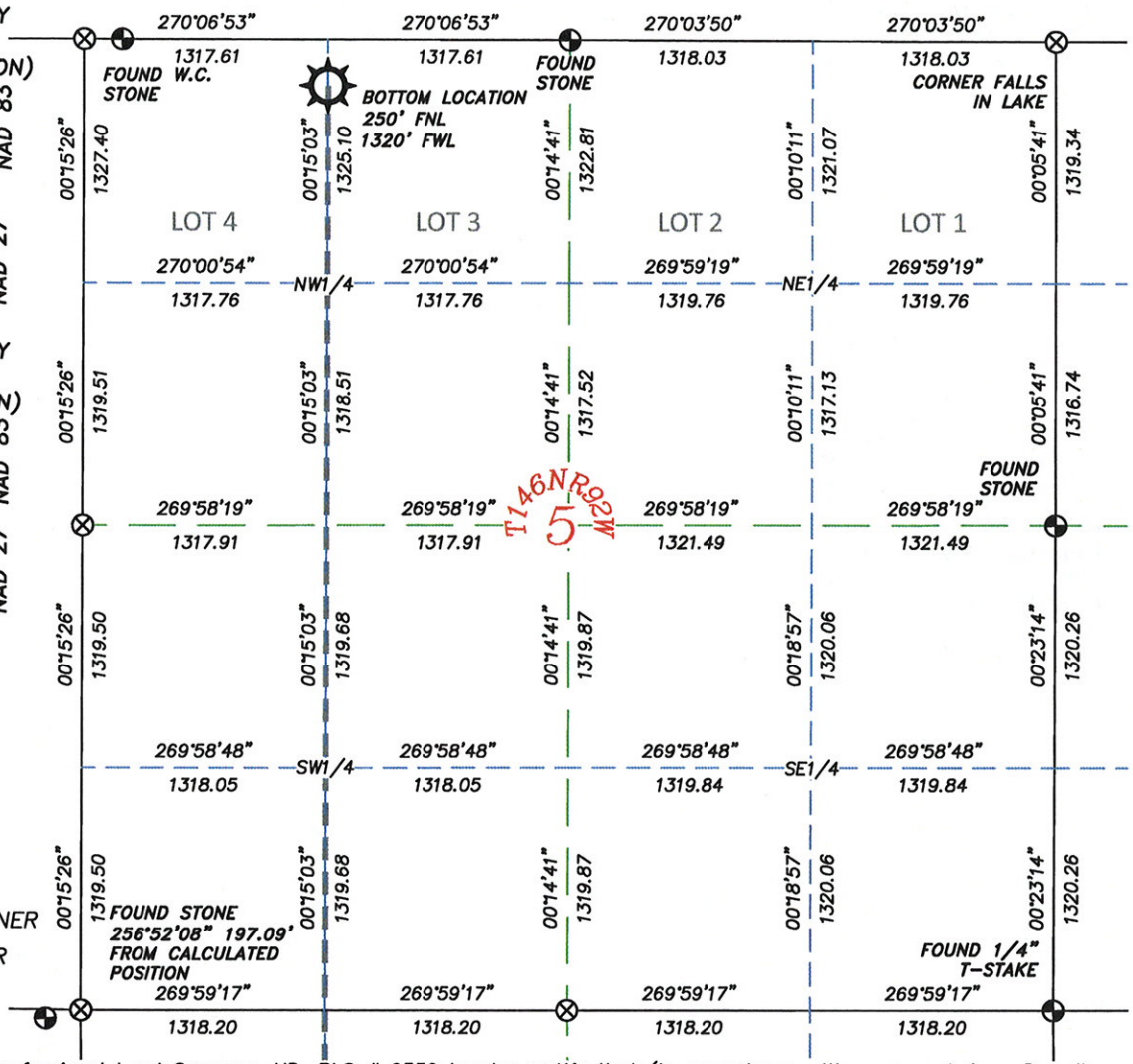
550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

Scale: 1"= 1000'

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1TFH
1889 FEET FROM THE EAST LINE AND 840 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1320 FEET FROM THE WEST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(SURFACE HOLE LOCATION)
Lat. 47°28'13.73" } NAD 83
Long.102°25'32.68"W }
Lat. 47.470480°
Long.102.425743°W
Elev. 2343.7' GROUND
Lat. 47°28'13.70" } NAD 27
Long.102°25'31.03"W }
Lat. 47.470471° }
Long.102.425286°W }

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.65" } NAD 83
Long.102°26'02.85"W }
Lat. 47.501014°
Long.102.434125°W
Lat. 47°30'03.62" } NAD 27
Long.102°26'01.20"W }
Lat. 47.501006°
Long.102.433667°W



LEGEND

- FOUND OR SET CORNER
- CALCULATED CORNER
- NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1TFH being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 3 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2343.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution.
Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA
~SEAL~

JOB NO. 2010011
08/21/2012 CDC

P.O. BOX 820
GREEN RIVER, WYOMING 82935

WILLIAM H. SMITH & ASSOCIATES P.C.

SURVEYING CONSULTANTS

550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

BOTTOM HOLE LOCATION PLAT

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH, DICKINSON, NORTH DAKOTA 58601
FELIX USA 8-1TFH
1889 FEET FROM THE EAST LINE AND 840 FEET FROM THE NORTH LINE (SURFACE HOLE LOCATION)
SECTION 17, T 146 N, R 92 W., 5TH P.M.
250 FEET FROM THE NORTH LINE AND 1320 FEET FROM THE WEST LINE (BOTTOM HOLE LOCATION)
SECTION 5, T 146 N, R 92 W., 5TH P.M.
DUNN COUNTY, NORTH DAKOTA

Scale: 1"= 2000'

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(SURFACE HOLE LOCATION)
Lat. 47°28'13.73" } NAD 83
Long.102°25'32.68"W }
Lat. 47.470480° } NAD 83
Long.102.425743°W }
Elev. 2343.7' GROUND
Lat. 47°28'13.70" } NAD 27
Long.102°25'31.03"W }
Lat. 47.470471° } NAD 27
Long.102.425286°W }

MARATHON OIL COMPANY
FELIX USA 8-1TFH
(BOTTOM HOLE LOCATION)
Lat. 47°30'03.65" } NAD 83
Long.102°26'02.85"W }
Lat. 47.501014° } NAD 83
Long.102.434125°W }
Lat. 47°30'03.62" } NAD 27
Long.102°26'01.20"W }
Lat. 47.501006° } NAD 27
Long.102.433667°W }

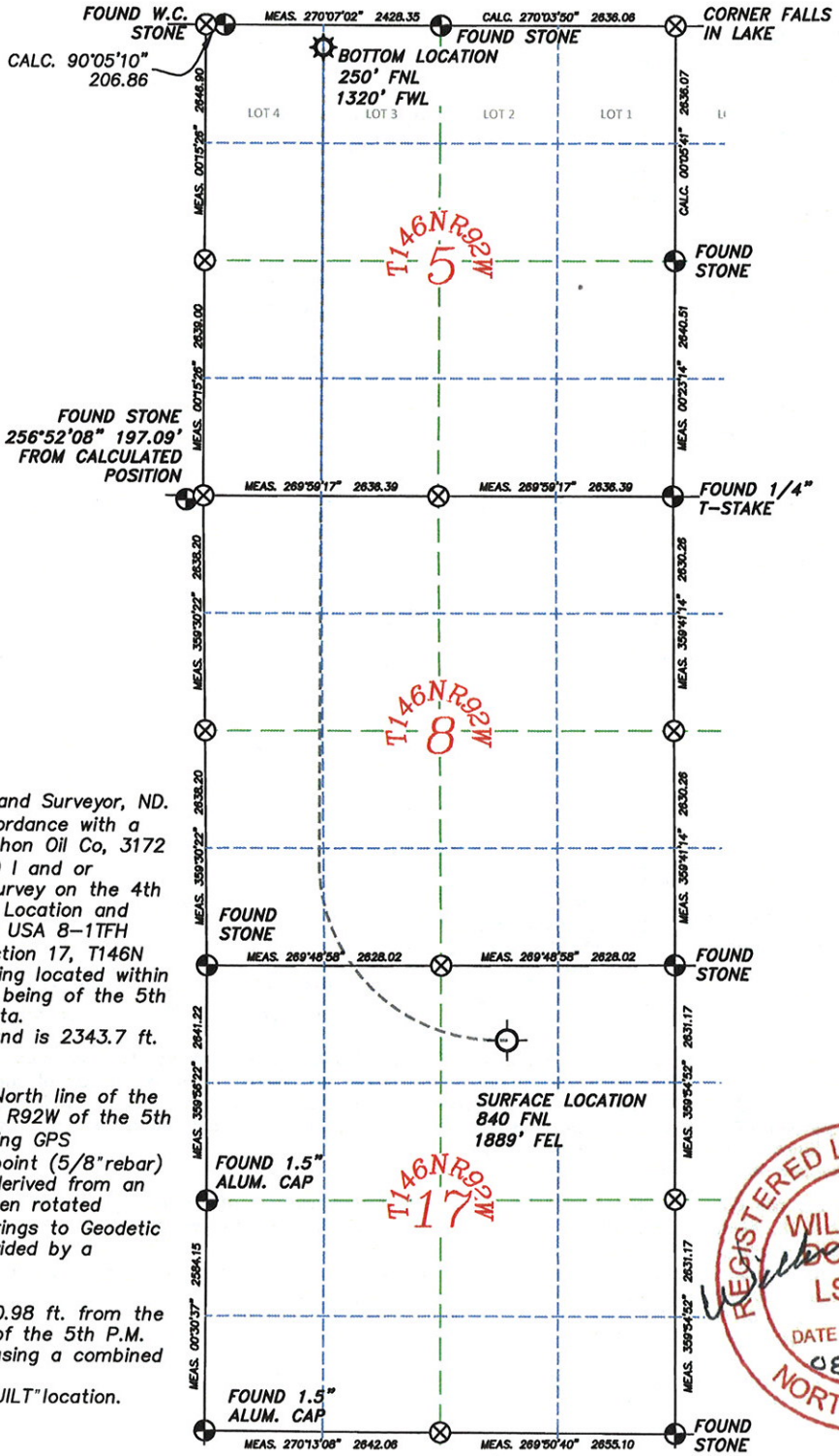
LEGEND

- ⊕ FOUND OR SET CORNER
- ⊗ CALCULATED CORNER
- ○ NOTHING FOUND

I, William H. Dolinar, Professional Land Surveyor, ND. RLS # 6550 hereby certify that (in accordance with a request from Darrell Nodland with Marathon Oil Co, 3172 Highway 22 North, Dickinson, ND 58601) I and or personnel under my direction made a survey on the 4th day of July, 2012, for the Surface Hole Location and Elevation of Marathon Oil Co. Well FELIX USA 8-1TFH being located in the NW/4 NE/4 of Section 17, T146N R92W and the Bottom Hole Location being located within Lot 3 of Section 5, T146N, R92W, both being of the 5th P.M., Dunn County, State of North Dakota.
Surface Hole Elevation of ungraded ground is 2343.7 ft.

Notes: All Azimuths are based on the North line of the Northwest Quarter of Section 16, T146N R92W of the 5th P.M., being an Azimuth of 90°04'46" using GPS observations, occupying a WHS control point (5/8"rebar) and having the Location and Elevation derived from an OPUS Solution. Azimuths shown have been rotated 1°23'56.44382" West from SPC Grid bearings to Geodetic North, based on convergence angle provided by a conversion using Corpscon.
Vertical Datum used is of NAVD 88.
Control Point is located 272°25'33" 1660.98 ft. from the NW Corner of Section 16, T146N R92W of the 5th P.M.
Distances shown are Ground Distances using a combined scale factor of 1.000004852
Location shown here on is not an "ASBUILT" location.

JOB NO. 2010011
08/21/2012 CDC



REGISTERED LAND SURVEYOR
WILLIAM H. DOLINAR
LS-6550
DATE 08/22/12
NORTH DAKOTA

~SEAL~

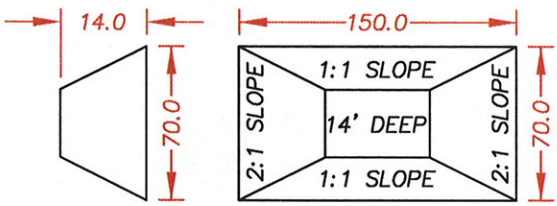
MARATHON OIL COMPANY
FELIX USA 8-1TFH
LOCATED WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

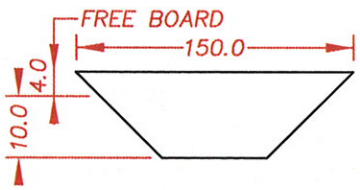
WELL SITE ELEVATION	2343.7
GRADED PAD ELEVATION	2333.6

EXCAVATION	74,125 CU. YDS. (CUT)
PLUS PIT	3,610 CU. YDS. (CUT)
	89,393 CU. YDS
EMBANKMENT	56,329 CU. YDS. (FILL)
PLUS SHRINKAGE (+30%)	16,899 CU. YDS. (FILL)
	73,227 CU. YDS.
STOCKPILE PIT	3,610 CU. YDS (SPOIL)
STOCKPILE TOP SOIL (8")	11,657 CU. YDS. (TOP SOIL-CUT)
ROAD EMBANKMENT & STOCKPILE FROM PAD	898 CU. YDS. (SPOIL)
TOTAL CUT VOLUME	89,393 CU. YDS.
TOTAL FILL VOLUME	73,227 CU. YDS.
TOTAL SPOIL VOLUME	898 CU. YDS.
DISTURBED AREA FROM PAD	10.78 ACRES
AREA INSIDE BARBED WIRE FENCE	14.00 ACRES

NOTE
ALL FILL END SLOPES ARE DESIGNED AT 2:1 SLOPES.
ALL CUT END SLOPES ARE DESIGNED AT 2:1 SLOPES.
ALL STOCKPILES ARE TO BE BUILT AT 3:1 SLOPES.

MARATHON H&P FLEX RIG PIT





WELL SITE LOCATION
1889 FEET FROM THE EAST LINE
840 FEET FROM THE NORTH LINE

CONFIDENTIALITY NOTES:
THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: N.T.S.
DATE: 08/19/2012	JOB NO: 2010011	SHEET 1 OF 8
REV:		

LOCATION:
FELIX USA 8-1TFH
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON,
NORTH DAKOTA 58601

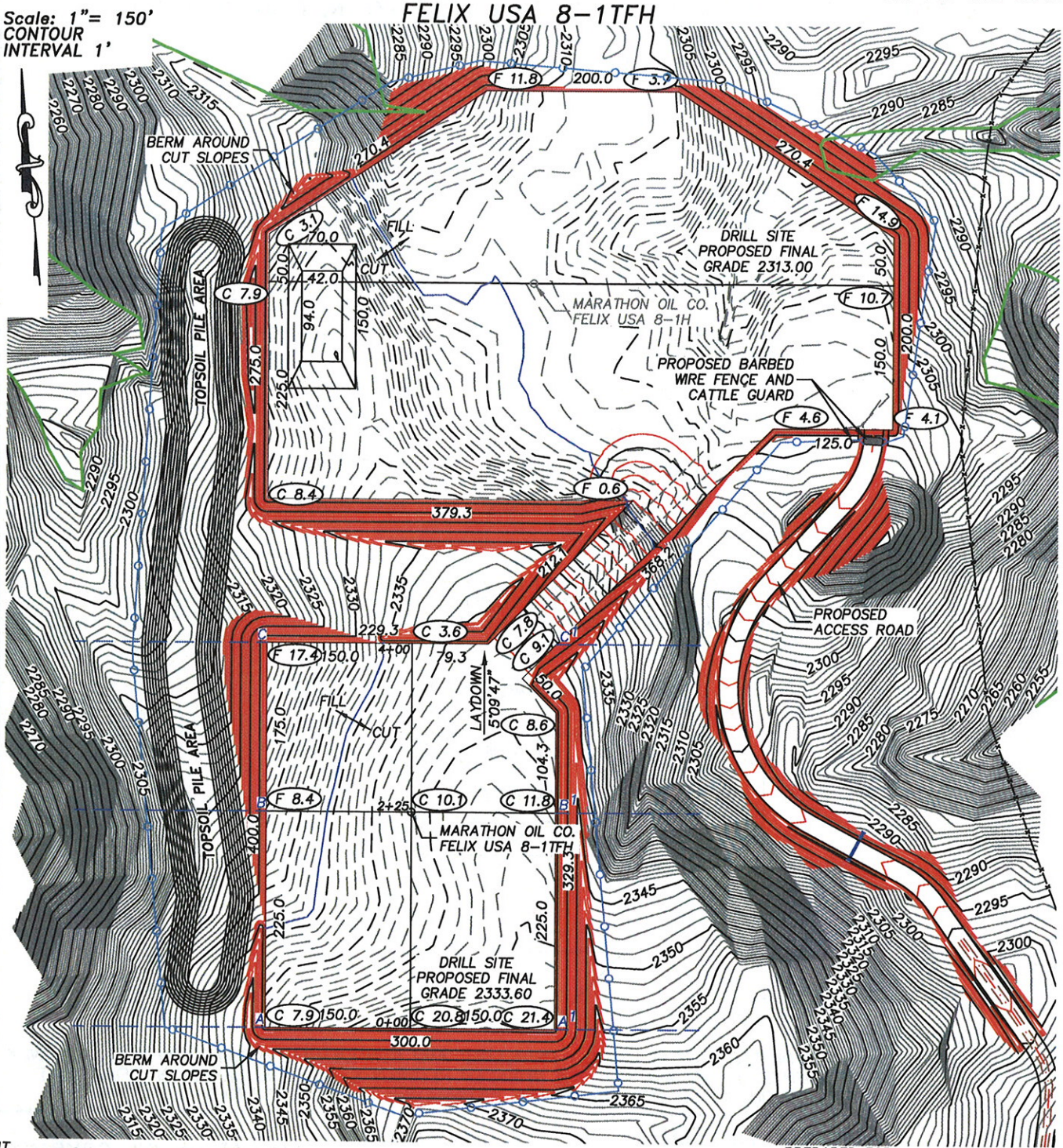
CONSTRUCTION DATA PAGE

WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
MARATHON OIL COMPANY
FELIX USA 8-1TFH

P.O. BOX 820
GREEN RIVER, WYOMING 82935

550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

Scale: 1"= 150'
CONTOUR INTERVAL 1'



PIT
150' X 70' X 14'
SLOPE = 1:1 & 2:1
CAPACITY
17,361 BBLs FULL
10,676 BBLs WORKING
CAPACITY WITH 4'
FREE BOARD

JOB NO. 2010011
08/19/2012 CDC

CUT SLOPES: 2:1
FILL SLOPES: 2:1
QUANTITIES:
TOTAL CUT = 89,393 BANK CUBIC YARDS
TOTAL FILL = 73,227 BANK CUBIC YARDS
TOPSOIL AT 8 INCHES OF DEPTH = 11,657 BANK CUBIC YARDS
SPOIL = 4,508 BANK CUBIC YARDS
DISTURBED AREA = 469,770 SQ. FT. OR 10.78 ACRES

PREPARED FOR:
MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

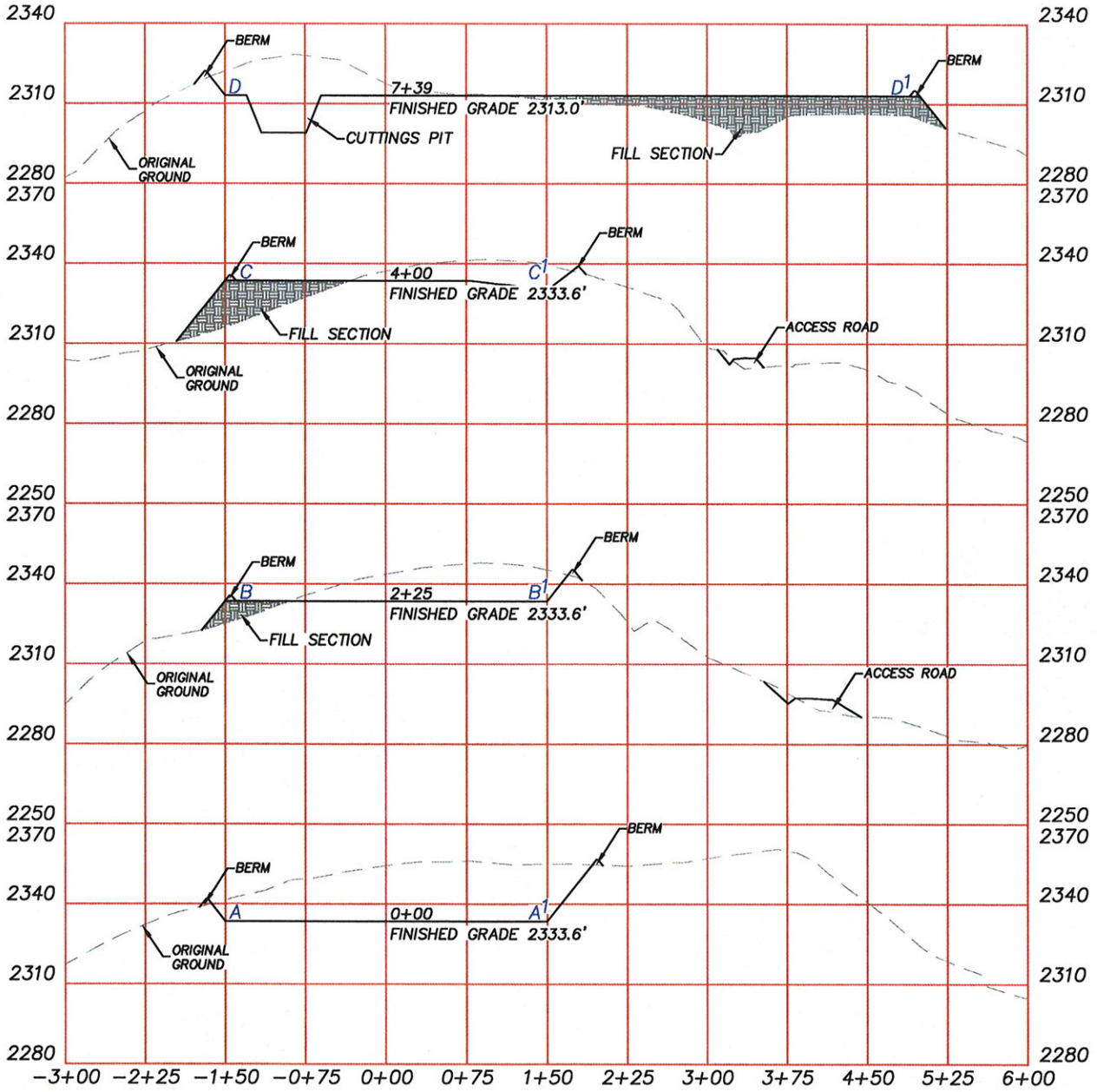
LOCATION:
FELIX USA 8-1 TFH
1889 FEL and 840 FNL
FALLS WITHIN THE NW/4 NE/4 SECTION 17, T146N, R92W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS

P.O. BOX 820
GREEN RIVER, WYOMING 82935

550 EAST 2ND NORTH
PH. 307-875-3638
FAX. 307-875-3640

MARATHON OIL COMPANY
FELIX USA 8-1TFH



PIT
150' X 70' X 14'
SLOPE = 1:1 & 2:1
CAPACITY
17,361 BBLs FULL
10,676 BBLs WORKING
CAPACITY WITH 4'
FREE BOARD

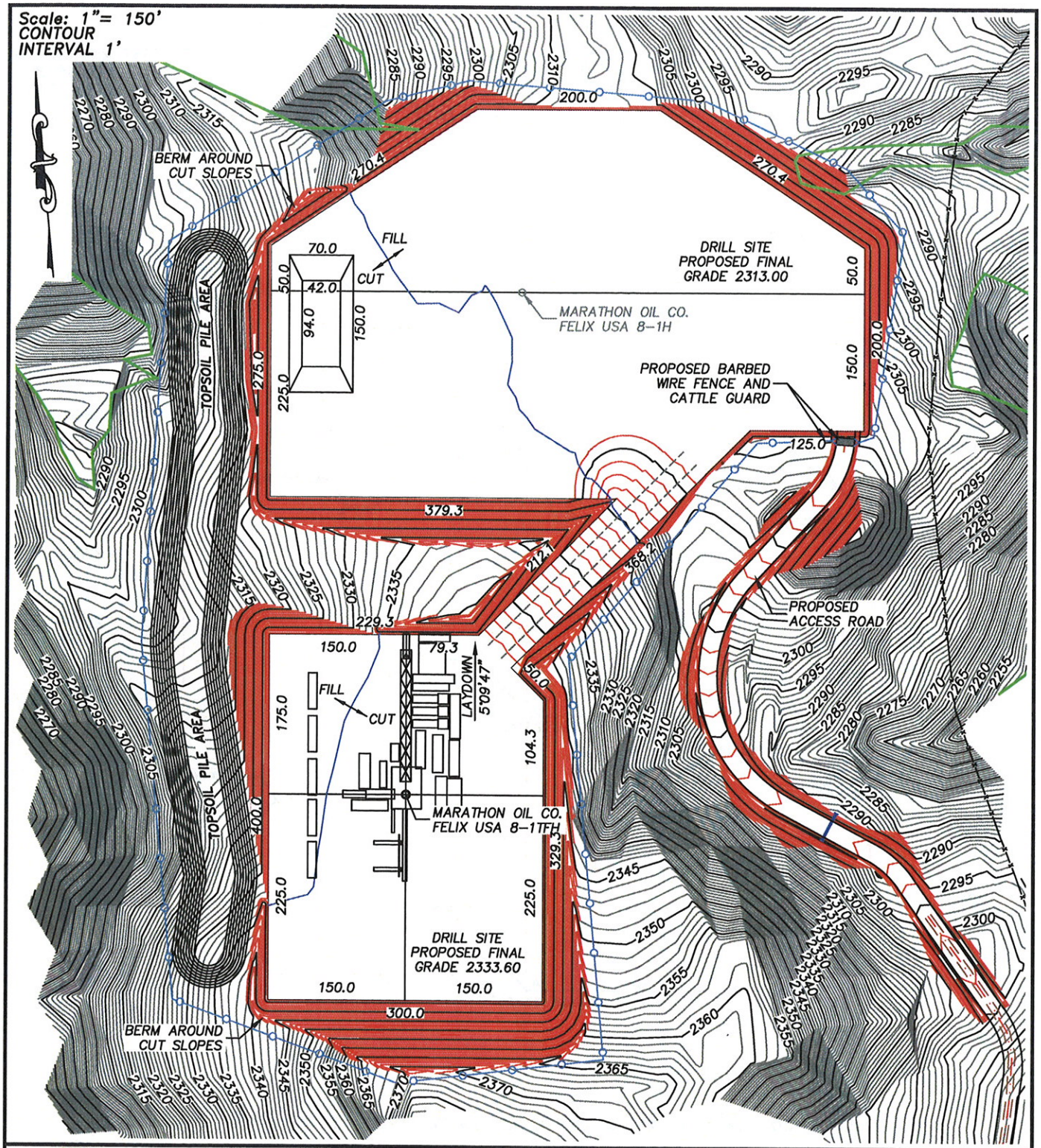
JOB NO. 2010011
08/19/2012 CDC

HORIZONTAL SCALE: 1"=150 FEET
VERTICAL SCALE: 1"=60 FEET

CUT SLOPES: 2:1
FILL SLOPES: 2:1
QUANTITIES:
TOTAL CUT = 89,393 BANK CUBIC YARDS
TOTAL FILL = 73,822 BANK CUBIC YARDS
TOPSOIL AT 8 INCHES OF DEPTH = 11,657 BANK CUBIC YARDS
SPOIL = 3,914 BANK CUBIC YARDS
DISTURBED AREA = 469,770 SQ. FT. OR 10.78 ACRES

PREPARED FOR:
MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

LOCATION:
FELIX USA 8-1 TFH
1889 FEL and 840 FNL
FALLS WITHIN THE NW/4 NE/4 SECTION 17,
T146N, R92W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA



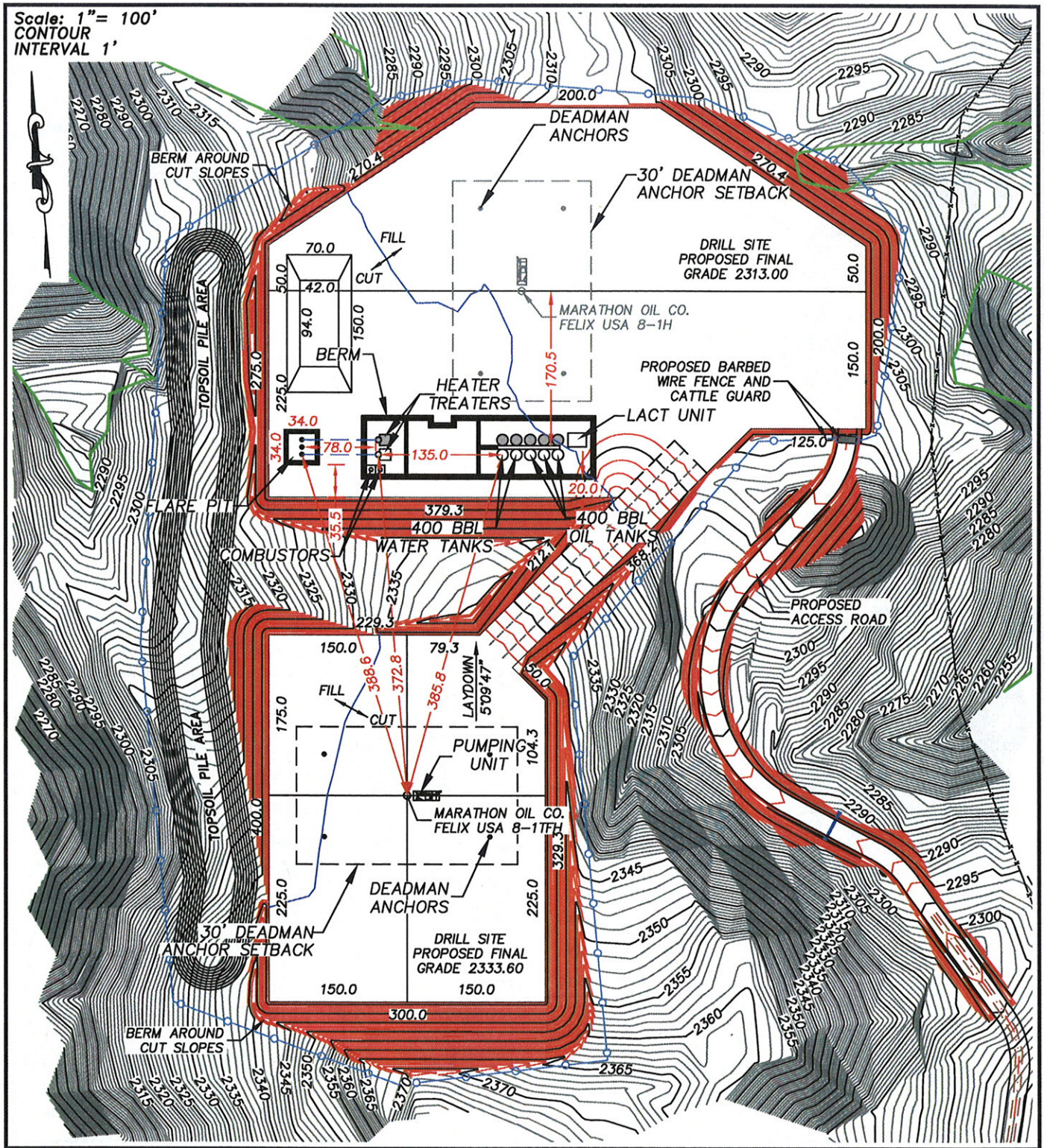
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=100'
DATE: 08/19/2012	JOB NO: 2010011	SHEET 4 OF 8
REV:		

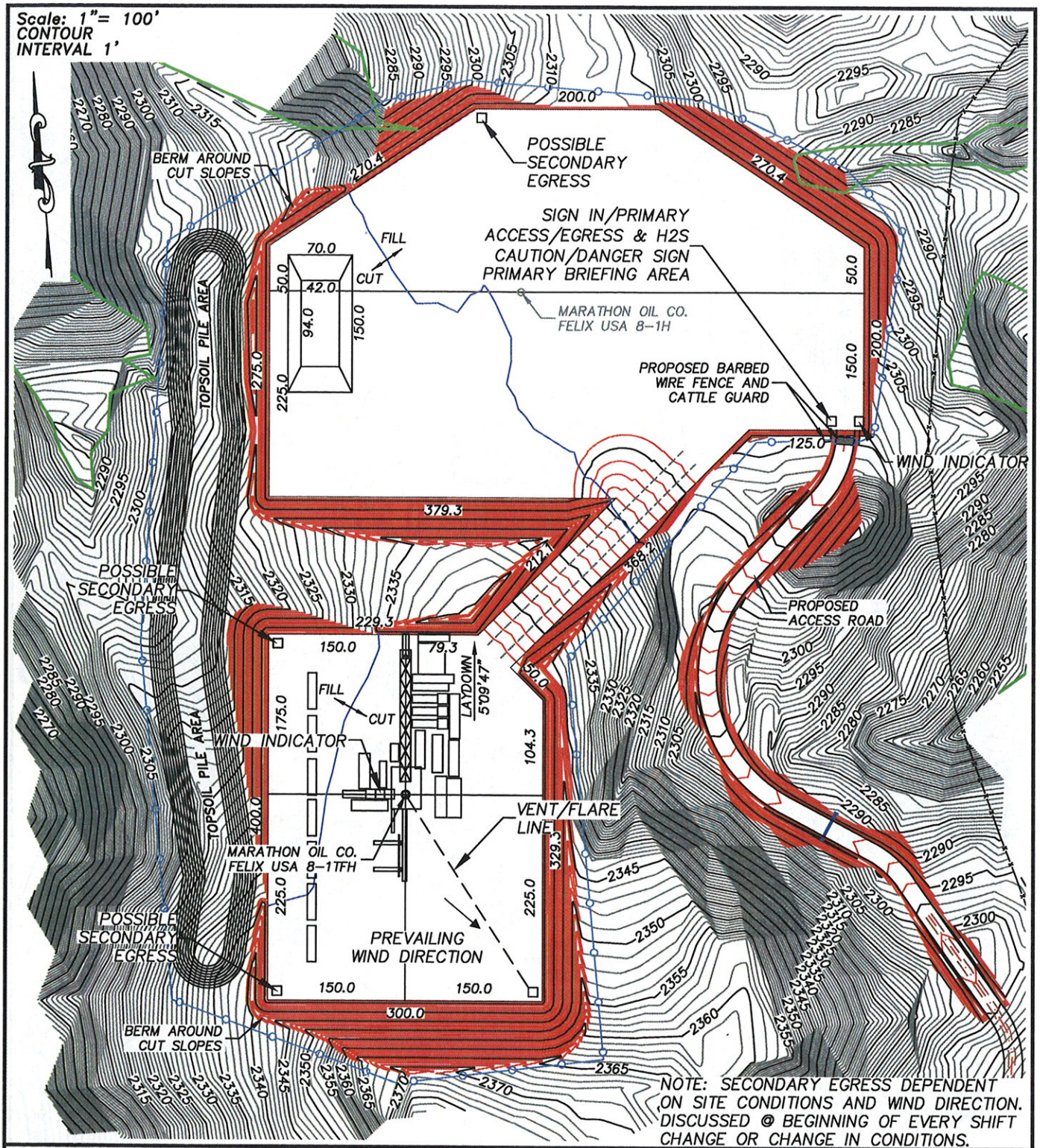
LOCATION:
FELIX USA 8-1TFH
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

RIG LAYOUT PAGE



WILLIAM H. SMITH & ASSOCIATES P.C. SURVEYING CONSULTANTS 550 EAST SECOND NORTH GREEN RIVER, WY PHONE: 307-875-3638 307-875-3639 www.whsmithpc.com	LOCATION: FELIX USA 8-1TFH WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM. DUNN COUNTY, NORTH DAKOTA
MARATHON OIL COMPANY 3172 HIGHWAY 22 NORTH DICKINSON, NORTH DAKOTA 58601	
DRAWN BY: CDC | CHECKED BY: WHD | SCALE: 1"=100' DATE: 08/19/2012 | JOB NO: 2010011 | SHEET 5 OF 8 REV:	PRODUCTION FACILITIES LAYOUT PAGE



WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=100'
DATE: 08/19/2012	JOB NO: 2010011	SHEET 6 OF 8
REV:		

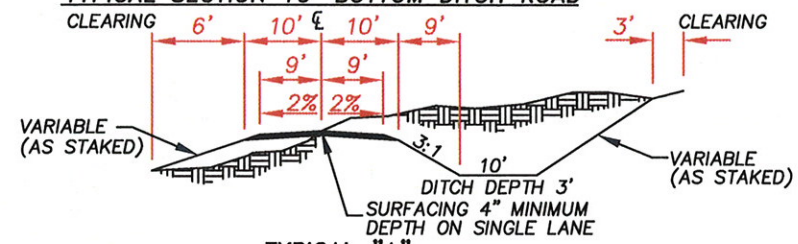
LOCATION:
FELIX USA 8-1TFH
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

H2S DRILLING OPERATIONS PAGE

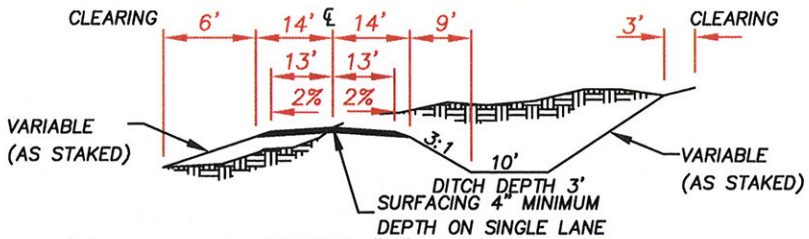
FELIX USA 8-1TFH
ROADWAY TYPICAL SECTIONS

TYPICAL SECTION 10' BOTTOM DITCH ROAD



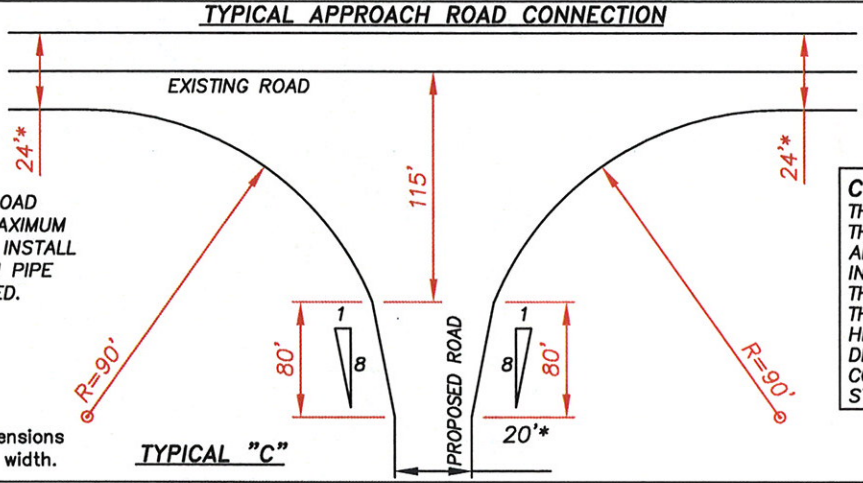
TYPICAL "A"

TYPICAL SECTION 10' BOTTOM DITCH ROAD



TYPICAL "B"

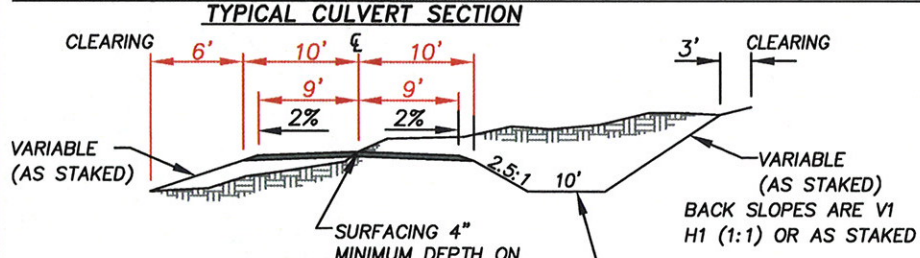
TYPICAL APPROACH ROAD CONNECTION



NOTE: * Dimensions are surfaced width.

TYPICAL "C"

TYPICAL CULVERT SECTION



FILL SLOPES ARE V1 H1.5 (1.5:1) OR AS STAKED

TYPICAL "D"

FILL SLOPES
3:1 UNDER 4' HEIGHT
2:1 OVER 4' HEIGHT
(–) SLOPES STEEPER THAN 2:1 WILL BE SUBJECT TO FS APPROVAL

CUT SLOPES
3:1 UNDER 10' HEIGHT
2:1 10' TO 20' HEIGHT
(–) VARIABLE OVER 20' HEIGHT W/FS APPROVAL

FILL WIDENING
2' TO 5' HIGH/ADD 1'
OVER 5' HIGH/ADD 2'

CURVE WIDENING
130 / R

DITCH WIDTH SHALL BE THE LARGER OF THE FOLLOWING:
A. STANDARD DITCH WIDTH.
B. 2 TIMES THE PIPE DIAMETER.
C. 4.25'

DITCH DEPTH SHALL BE:

CMP DIAMETER	DITCH DEPTH
18"	2.5'
24"	3.0'
36"	4.0'
48"	5.0'

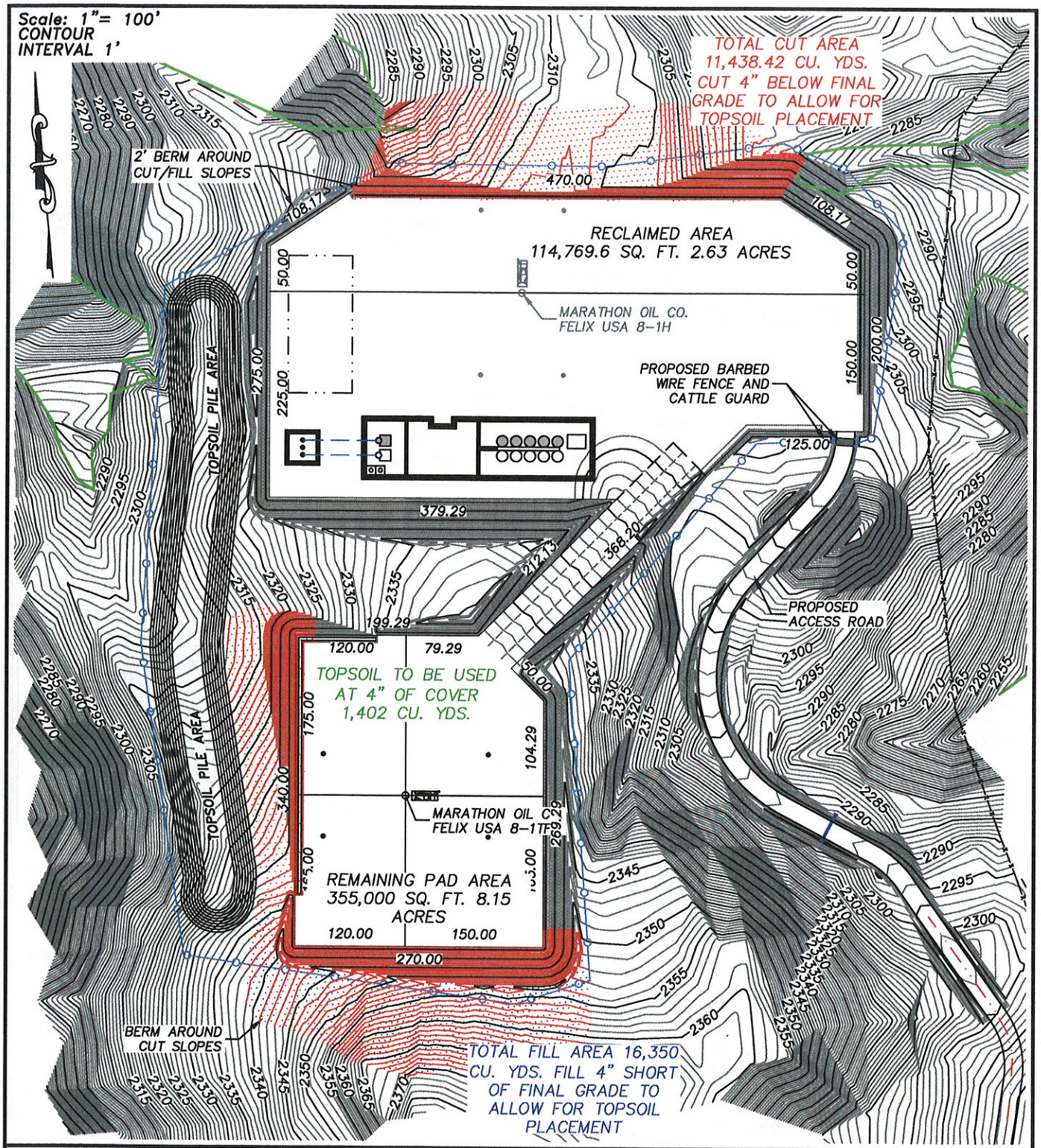
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: N.T.S.
DATE: 08/19/2012	JOB NO: 2010011	SHEET 7 OF 8

LOCATION:
FELIX USA 8-1TFH
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

TYPICAL ROADWAY DIAGRAM



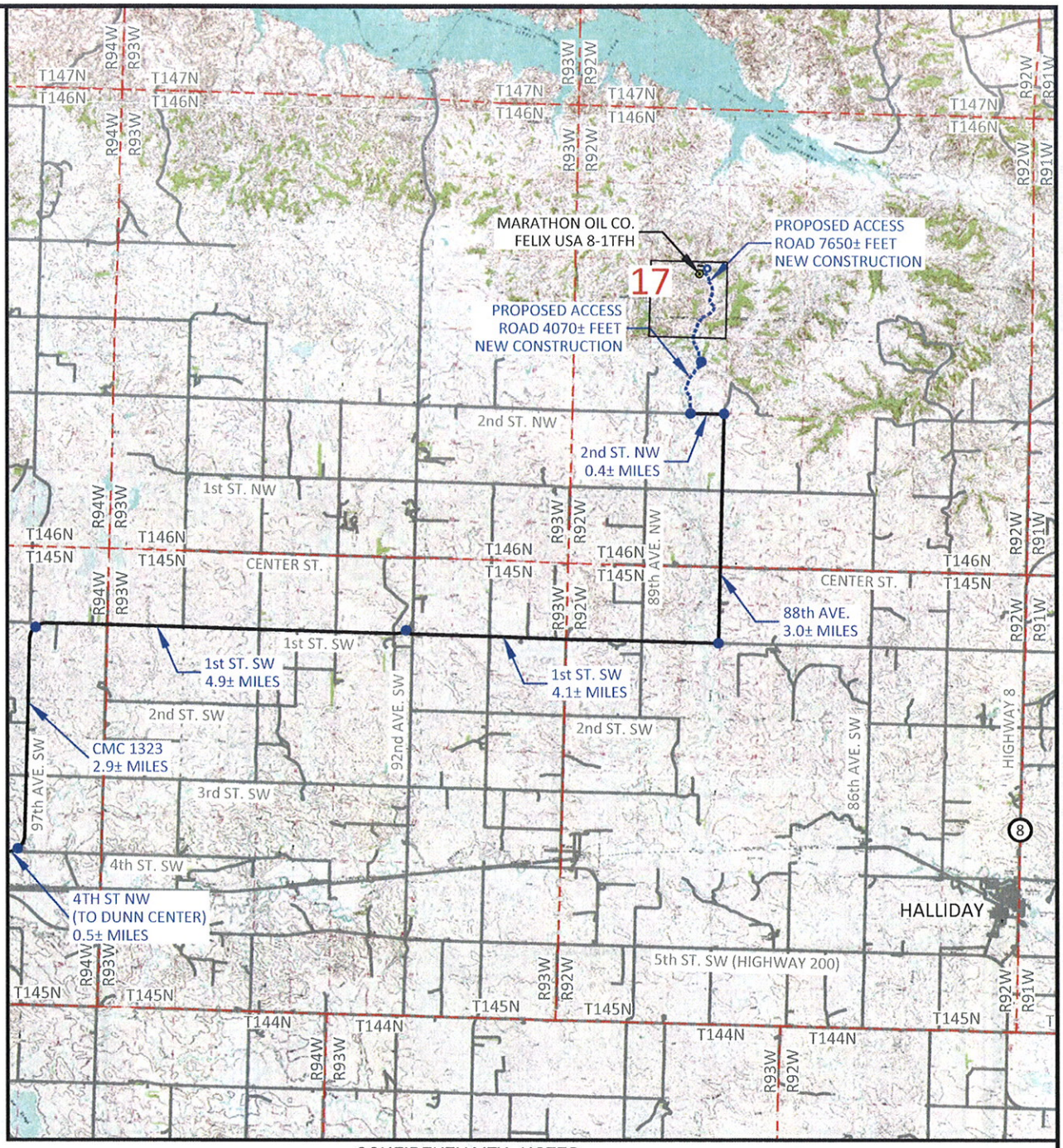
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=100'
DATE: 08/19/2012	JOB NO: 2010011	SHEET 8 OF 8
REV:		

LOCATION:
FELIX USA 8-1TFH
WITHIN THE NW/4 NE/4 SECTION 17, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

RECLAIMED PAD



4 MI.
2 MI.
1 MI.
0 1 MI. 2 MI. 4 MI.

LEGEND
EXISTING ROADS
PROPOSED ROADS

CONFIDENTIALITY NOTES:
THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

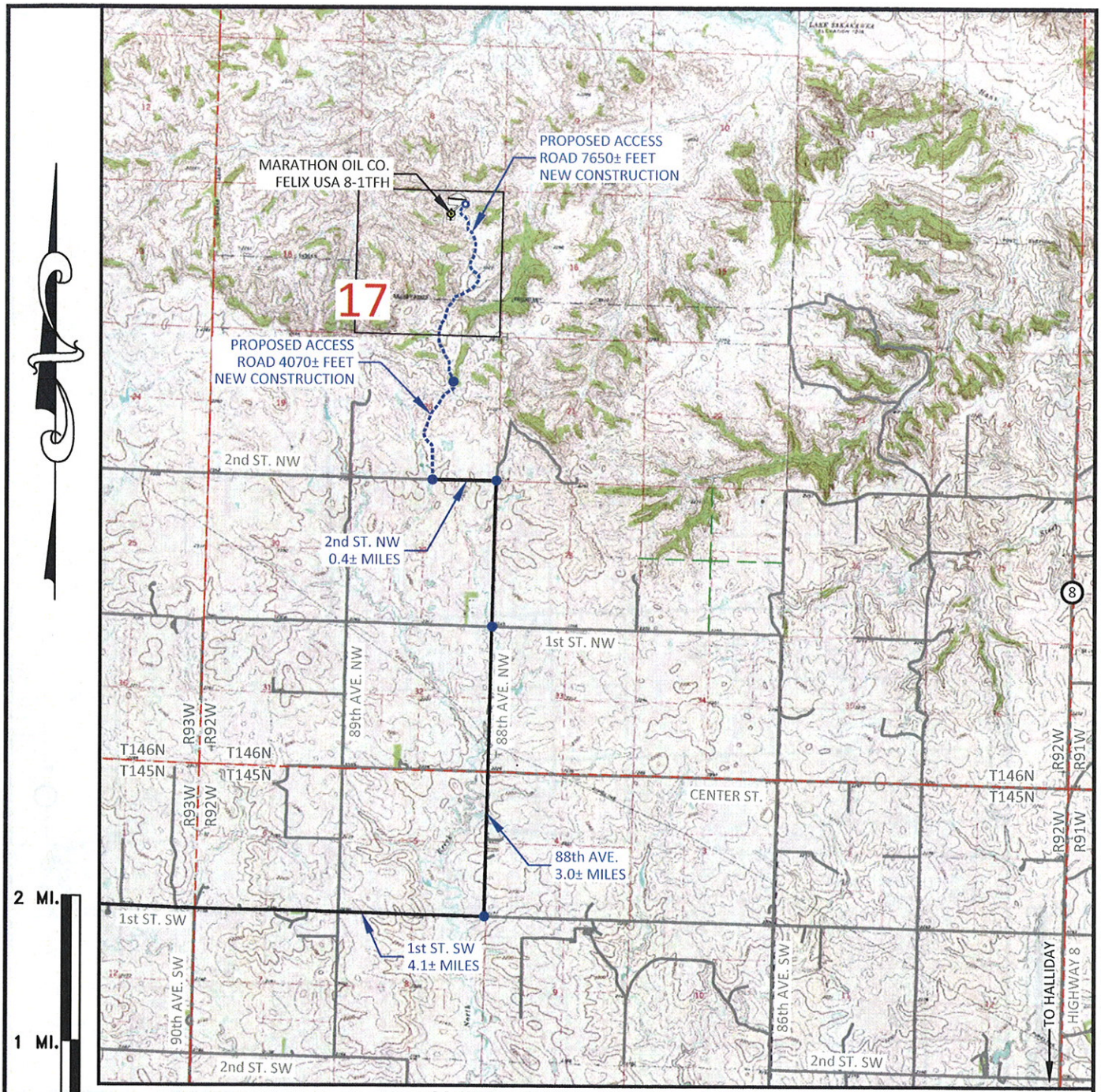
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
660 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

LOCATION:
FELIX USA 8-1TFH
WITHIN THE NE/4 NW/4 SECTION 16, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON,
NORTH DAKOTA 58601

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=2 MILE
DATE: 08/18/2012	JOB NO: 2010011	SHEET 1 OF 3

MAP "A"
COUNTY ACCESS ROUTE



LEGEND

EXISTING ROADS

PROPOSED ROADS

CONFIDENTIALITY NOTES:

THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

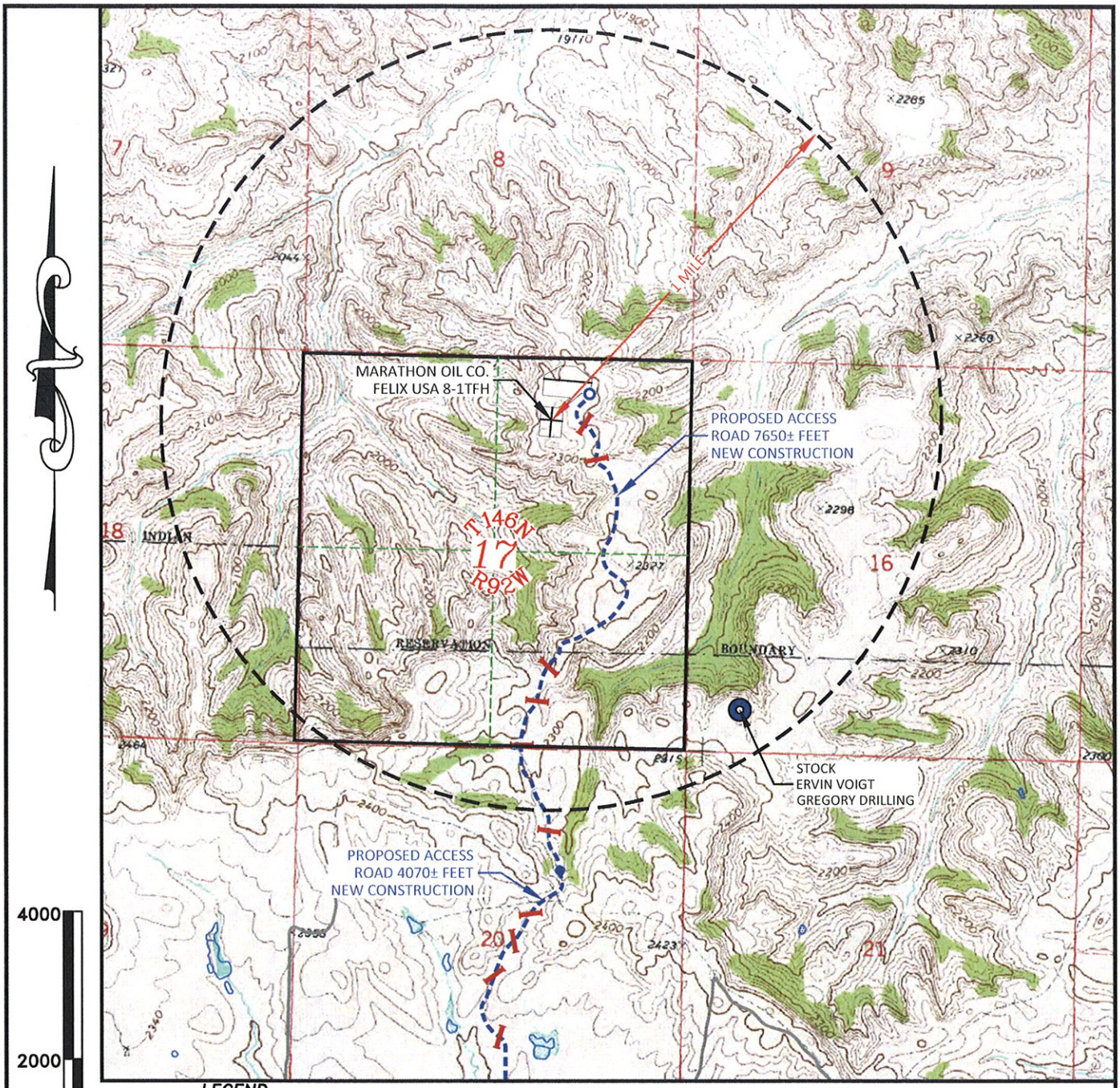
WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

LOCATION:
FELIX USA 8-1TFH
WITHIN THE NE/4 NW/4 SECTION 16, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON, NORTH DAKOTA 58601

MAP "B"
QUAD ACCESS ROUTE

DRAWN BY: CDC	*CHECKED BY: WHD*	*SCALE: 1"=1 MILE*
DATE: 08/18/2012	*JOB NO: 2010011*	*SHEET 2 OF 3*



CONFIDENTIALITY NOTES:
THE INFORMATION CONTAINED IN THIS PLOT IS LEGALLY PRIVILEGED AND CONFIDENTIAL INFORMATION INTENDED ONLY FOR THE USE OF THE RECIPIENTS. IF YOU ARE NOT THE INTENDED RECIPIENTS, YOU ARE HEREBY NOTIFIED THAT ANY USE, DISSEMINATION, DISTRIBUTION OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.

WILLIAM H. SMITH & ASSOCIATES P.C.
SURVEYING CONSULTANTS
550 EAST SECOND NORTH
GREEN RIVER, WY
PHONE: 307-875-3638
307-875-3639
www.whsmithpc.com

DRAWN BY: CDC	CHECKED BY: WHD	SCALE: 1"=2000'
DATE: 08/18/2012	JOB NO: 2010011	SHEET 3 OF 3

LOCATION:
FELIX USA 8-1TFH
WITHIN THE NE/4 NW/4 SECTION 16, T 146 N, R 92 W, 5TH PM.
DUNN COUNTY, NORTH DAKOTA

MARATHON OIL COMPANY
3172 HIGHWAY 22 NORTH
DICKINSON,
NORTH DAKOTA 58601

MAP "C"
ONE MILE RADIUS MAP

Notice of Availability and Appeal Rights

Marathon Oil Company: Felix USA 8-1H
Felix USA 8-1TFH

The Bureau of Indian Affairs (BIA) is planning to issue administrative approvals related to drilling up to Eight Bakken Oil and Gas Wells atop two well pads on the Berthold Reservation as shown on the attached map. Construction by Marathon Oil is expected to begin in 2012.

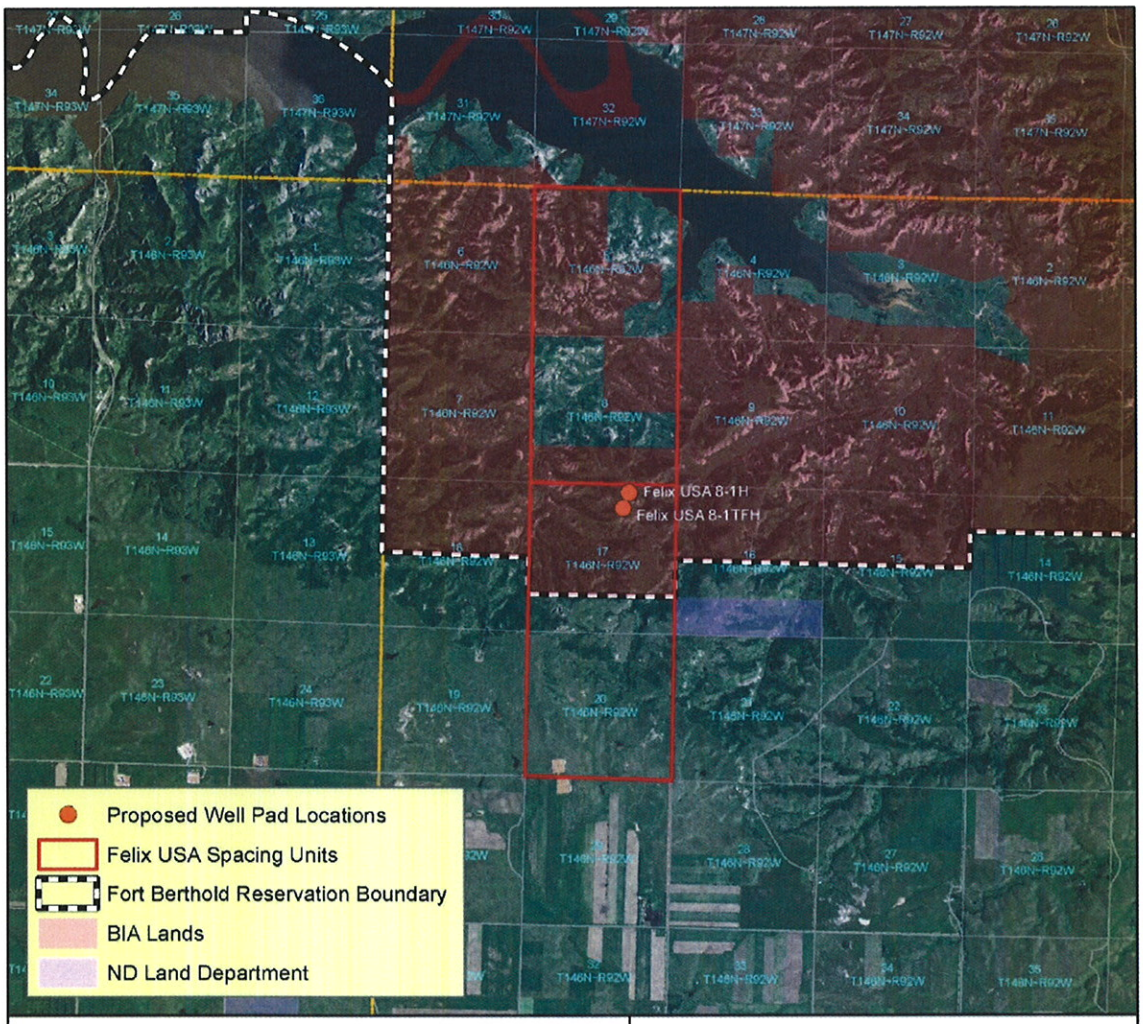
An environmental assessment (EA) determined that proposed activities will not cause significant impacts to the human environment. An environmental impact statement is not required. Contact Earl Silk, Superintendent at 701-627-6570 for more information and/or copies of the EA and the Finding of No Significant Impact (FONSI).

The FONSI is only a finding on environmental impacts – it is not a decision to proceed with an action and *cannot* be appealed. BIA's decision to proceed with administrative actions *can* be appealed until November 24, 2012, by contacting:

United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Indian Appeals
801 N. Quincy Street, Suite 300, Arlington, Va 22203.

Procedural details are available from the BIA Fort Berthold Agency at 701-627-6570.

Project locations.



Felix USA Well Pads

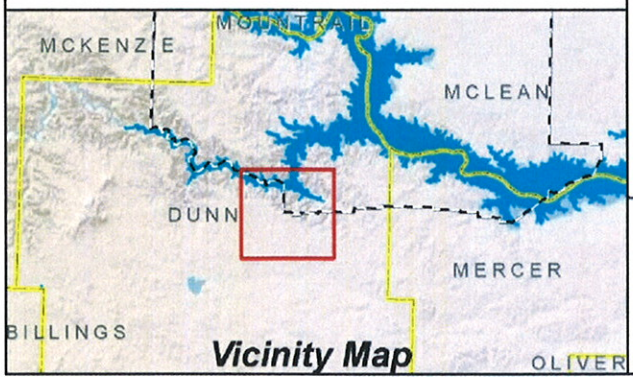


Figure 1. Project Location Map

Proposed locations of the Felix USA well pads located in Section 17, T146N, R92W, Dunn County, North Dakota

0 0.45 0.9 1.8 2.7

Miles

N

Date: 9/29/2012

Marathon Oil Corporation

URS