

## **Cover Sheet**

### **Chaney #2 and Lisk #1 and #2 Federal Well Development**

**Proposed agency actions:** Approval of the Surface Use Plan of Operations submitted by Carlton Oil Company for their existing lease on federal minerals at the Lisk #1 and #2 and Chaney #2 well sites.

**Type of statement:** Environmental Assessment

**Lead agency:** USDA – Forest Service

**Cooperating agencies:** USDI – Bureau of Land Management

**Deciding official:** Dan B. Kincaid, Athens District Ranger

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**Abstract:** Carlton Oil Corporation is proposing to exercise their lease of federal minerals to develop the Lisk #1 and 2 wells in Benton Township, Monroe County and the Chaney #2 well in Grandview Township, Washington County, Ohio. Carlton Oil has submitted an Application for Permit to Drill an oil/gas well to the United States Department of Interior – Bureau of Land Management (BLM). BLM has, in turn, forwarded Carlton Oil Corporation's request for approval of the Surface Use Plan of Operations (SUPO) to the USDA – Forest Service. Less than four acres of federal land would be disturbed to construct three well pads and the required access roads.

The public notice and comment process used for this project meets the requirements in CFR 36 Part 215.5 (2) in which the deciding official determines the most effective timing for publishing the legal notice of the proposed action and opportunity to comment.

The Forest Service has chosen Alternative B as the preferred alternative, to approve Carlton's SUPO subject to mitigations.

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<b>DECIDING OFFICIAL: .....</b>	<b>1</b>
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## Chaney #2 and Lisk #1 and #2, Federal Well Development

### ENVIRONMENTAL ANALYSIS

**Brief Summary** Carlton Oil Corporation purchased the Chaney and Lisk oil and gas leases in the September 2003 Bureau of Land Management lease sale for federal minerals on the Wayne National Forest. The Chaney lease is for 88 acres in T2N R5W Section 27 and 28, Grandview Township, Washington County, Ohio. The Lisk lease is for 120 acres in T2N R5W Section 35, Monroe County, Ohio. Both leases are subject to Forest Service Standard Stipulations and Special Notifications. Carlton filed a Notice of Staking for the Chaney and Lisk development on 11/04/03. A field review of the site was held on January 13, 2004. An Application for Permit to Drill (APD) was presented to the Bureau of Land Management on February 5, 2004, upon which BLM asked the Wayne National Forest to approve the companion Surface Use Plan of Operations (SUPO) for the development of these three wells. This document analyzes the impacts of the SUPO.

### Chapter 1: Purpose and Need

**Purpose:** When Carlton Oil Corporation proposed to exercise their lease of federal minerals to develop these three wells on the Marietta Unit of the Athens Ranger District, it triggered the Forest Service to analyze the potential impacts of the site development, as called for in the Record of Decision for Amendment 8 to the Wayne Forest Plan and in CFR 36 Section 228.107.

**Need:** There is a need to make federally owned energy minerals available for public use. This project proposes to extract oil and/or gas for the purpose of supplying our nation's energy needs.

### Decision to be Made

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The decision to be made is whether to approve the SUPO for development of the Chaney #2 and Lisk #1 and #2 wells, with mitigations for the environmental impacts, including construction of new access road and well pads as submitted in the Application for Permit to Drill and accompanying Surface Use Plan of Operations; or to disapprove it for reasons stated (No Action Alternative). Forest Service approval of the SUPO is required before BLM can approve the Application for Permit to Drill.

### Scope of Decision

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The scope of this decision is limited to approval of the SUPO for Lisk and Chaney for occupancy of the surface in federal ownership, subject to stipulations and mitigations. The decision to allow the drilling of the well is made by the Bureau of Land Management in a separate analysis.

### Cooperating Agency Role

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The Department of Interior – Bureau of Land Management has the major role in issuing and supervising operations on mineral licenses, permits and leases for federally-owned minerals per the Mineral Leasing Act for Acquired Lands (Act of August 7, 1947). The Forest Service cooperates with the Interior agency per Memorandum of Understanding, 1991, to ensure that management goals and objectives are achieved, that impacts upon surface resources are mitigated to the maximum degree possible, and that the land affected is rehabilitated.

The Forest Supervisor shall review for adequacy proposed operating plans received from the BLM. Such reviews should be made in close coordination with BLM responsible officers. Upon

completion of a review, the Forest Supervisor shall advise the BLM responsible officer of the Forest Service decision, and of terms and conditions required for protection of surface resources, and for access, construction, or use and protection of existing roads.

## **Compliance with Wayne National Forest Land and Resource Management Plan**

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On August 6, 1992, the Forest Supervisor of the Wayne-Hoosier National Forest signed a Record of Decision (ROD) for oil and gas resources on the Wayne National Forest (USFS 1992). The ROD approved Amendment #8 to the Wayne Forest Plan, which provides specific direction on the management of oil and gas resources on the Forest. In the ROD, the Forest Service committed to analyzing the environmental effects resulting from the proposed development of federal minerals on individual tracts. The direction in Amendment 8 is taken from 36 CFR Section 228, Parts 107 and 108. The Wayne National Forest Decision Notice on leasing these tracts (signed September 26, 2002) is available on the Wayne National Forest website at [www.fs.fed.us/r9/wayne](http://www.fs.fed.us/r9/wayne) under Reading Room, Decision Notices. This analysis satisfies the requirement for individual analysis per the Forest Plan.

All three of these wells fall within Management Area 3.3 of the 1988 Wayne National Forest Land and Resource Management Plan and in a Visual Quality Zone of Modification. The ridge top access roads and remote well locations of these roads do not conflict with any of the Forest standards and guidelines for mineral development in this management area.

## **Forest Roads Analysis**

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Road construction and use on national forest land is limited in extent on this project. Approximately 3100 feet of access road will be constructed, solely for the use of the operator of these wells and closed to public vehicular use. It would not result in changes in access, such as changes in current use, traffic patterns, or road standards. Measurable adverse effects on soil and water resources, ecological processes, or biological communities are not expected to occur. Oil well sites are regularly monitored for compliance with operating plans and effects on resources. The determination has been made that additional roads analysis is not warranted. This decision is in compliance with FSM 7712.13c.

## **Compliance with other laws and regulations**

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Chapter 1509 of the *Ohio Oil and Gas Laws* requires well casing and storage and disposal of brine and other wastes in approved locations. Compliance is included in the Application for Permit to Drill.

BLM regulations, including 43 CFR Part 3160 (Onshore Oil and Gas Operating Regulations) and Onshore Oil and Gas Orders No. 1 and 2, establish requirements for drilling operations on federal leases and compliance with state and federal laws for cultural resources and threatened and endangered species. The regulations require conformance with lease terms, stipulations and available technology, efficient resource recovery, protection from drainage, environmental safeguards, reclamation of disturbed lands, protection of underground sources of fresh water, and general protection of the public health and safety. It assigns accountability to the lessees and operators. Lessees shall not commence any operation or construction without the prior approval of BLM

Any surface use plan of operations submitted by an operator shall contain the information specified by the Onshore Oil and Gas Order in effect when the surface use plan of operations is submitted. Carlton's SUPO has been found to be in accordance with these regulations. Leases

for both Lisk and Chaney, including stipulations and notifications, can be found in the Project File.

Other federal laws require the operator to address the plan in the event of a spill.

<p><b>40CFR112 EPA regulations specify requirements for a spill plan</b></p>	<p>The US Environmental Protection Agency has delegated the Ohio Environmental Protection Agency to require a Spill Prevention Control and Countermeasure plan to be on file within six months of the start of production of a well (40 CFR112). A spill plan is also required to be filed with each drilling rig. A copy of Carlton Oil’s Spill Countermeasure Action Plan for Production Facilities, a technical paper presented on Preparation and Implementation of Spill Plans from the Ohio Oil and Gas Association (1988), and a copy of 40CFR112, are on file at the Forest Service.</p>
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In addition, pages 11-12 of the Record of Decision for the Wayne Forest Plan Amendment #8 for Oil and Gas Resources added guidance to the Forest Plan for Emergency Spill Response in response to Ohio EPA’s comments on the EIS. The new guidance (also located in Wayne Forest Plan Page C-7) is as follows:

“Upon discovery or notification of an accidental spill of crude oil or brine which discharges or threatens to discharge into surface waters, the Ohio Environmental Protection Agency emergency spill response unit at Logan, Ohio (740) 385-8501 is to be telephoned immediately. State of Ohio regulations require a Spill Prevention and Control Countermeasures Plan (SPCC). Remedial action for cleanup of soil and water resources and timely repair of damaged wells, pipelines or tanks will be accomplished by lessee as directed by Ohio EPA.”

**Federal permits, licenses necessary to implement the project.**

There are no additional permits or licenses are required to implement this project.

**Summary of Scoping**

This project was scoped under new appeal regulations (36 CFR Part 215) published on June 5, 2003, in which the deciding official may determine the most effective timing for publishing the legal notice of the proposed action and opportunity to comment. The District Ranger determined to inform 139 interested parties of this project with a notice of the availability of the draft environmental assessment at the beginning of the 30-day Notice and Comment Period. This decision was based on the minimal resource impacts expected from these three wells and the level of public interest in other gas or oil well development projects on the Wayne National Forest. The Notice and Comment Period was published in the paper of record, the Athens Messenger, on June 23, 2004. 25 comments were received, most of which supported the development as proposed by Carlton. One commentor requested that we address the spill plan and the cumulative effects of other drilling. See pages 5 and 15 for information about the spill plan and the cumulative effects analysis.

**Organization of Document**

Chapter 2 describes the alternatives and makes a comparison of the effects of each alternative. Chapter 3 describes the existing conditions at the well development site and the effects of the proposed action and the other alternatives on the various resources and their associated issues. Chapter 4 lists other agencies and the individuals contributing to the preparation of this analysis.

## Chapter 2: Alternatives

### Introduction

The No Action and the proposed action alternative are described below. Alternative A is the no action alternative, consisting of a disapproval of the SUPO. Alternative B is approval of the proposed action, which consists of Carlton’s Surface Use Plan of Operations with mitigations as applied in all notifications and stipulations and by Forest Service specialists. See Table 2-3 following the description of alternatives for a comparison of impacts between the alternatives.

### Alternative A: No Action Alternative

Under this alternative the deciding official would disapprove the SUPO. No well development would proceed under this alternative. Existing conditions would remain the same except for normal forest succession and movement of sediment in streams due to other activities or normal erosion. No energy minerals would be extracted for consumer use.

### Alternative B: The Proposed Action

Carlton Oil Corporation proposes to drill an oil/gas well on each the Chaney Lease (OHES 51967) and two wells on the Lisk Lease (OHES 51968) per State regulations. The Chaney Lease is located in T2N R5W Section 28, Grandview Township, Washington County. The Lisk Lease is located in T2N R5W Section 35, Benton Township, Monroe County. A map showing the project location is included below.

Proposed access to the well sites is shown in Table 2-1 below. The 1886-foot access to the Chaney well is all on the Chaney mineral lease. It crosses a ridge top, then enters a poor stand of mixed pine and hardwood. The access to Lisk #1 is on an unmaintained Township road, then off-lease for 1000 feet, then on lease for another 1217 feet on a ridge top location. The access to Lisk #2 is all on unmaintained township road.

The lease road for each well will need to be 25 feet in width to accommodate drilling and fracturing equipment. Some trees will be removed at both Lisk #1 and Chaney for the road and for the well pad. The Lisk #1 access road will require clearing of 1217 feet of road in small mixed hardwood/pine timber; the well pad will require clearing of mature timber. Lisk #2 will require clearing only at the well pad in brushy small trees and shrubs. No rock will be placed on the roads unless warranted by drainage considerations because access after drilling is limited to all-terrain vehicles for well maintenance.

**Table 2-1: Proposed Development Activities for Chaney and Lisk Wells**

Activity	Well Name		
	Chaney #2	Lisk #1	Lisk #2
Access on private	N/A	N/A	N/A
Access by special use	N/A	1000 ft on old road	N/A
Access on lease	1886 feet on ridge	1217 feet on ridge	N/A
Access on public ROW		3290 feet on unmaint T 98	Same as Lisk #1
Well pad	200 x 150 feet Cut to level	200 x 150 feet Cut to level	200 x 150 feet 2-3' cut to level Diversion ditch
Natural Gas Line – fed	1500 feet	1-1.2" plastic surface 890 ft	1-1/2" black plastic 1430 feet
Natural Gas Line - pvt	500 feet	1-1/2" plastic surface 530 feet	

The well pads are proposed to be 200 by 150 feet to meet State spacing and BLM drilling requirements and to accommodate the size of the drilling rig. Trees cut for clearing of the access road or well pad will be cut at the stump, then sold (if they have commercial value) or cut into firewood and removed by a local contractor. Appropriate permits will be acquired from the Forest Service for the sale of trees. Stumps would be removed and stockpiled for burying in the pits during reclamation. Other brush and tree tops would be windrowed around the site for wildlife habitat. Topsoil would be skimmed from the surface, stock piled and used during the reclamation process. Drilling and maintenance equipment will be washed before entering the site from outside Monroe and Washington counties.

Each well site will need an open pit to temporarily store drilling fluids approximately 40 feet by 70 feet with a 5 foot depth. Each pit will be lined with a 4 mill plastic pit liner. The pit liner will remain in place through the drilling, fracturing and completion of the well. After drilling, the pit will be pumped out and refuse transported to a disposal well. The pit liner will be folded over, chopped up with the backhoe bucket and packed into the bottom of the pit. Tree stumps from site clearing will be buried and compacted into the pit. Each site will be graded back to original contour after filling the pit. The well site and access roads will be seeded with Forest-recommended seed mixtures. All equipment remaining on the site will be painted a standard forest green.

If crude oil of sufficient quantities is found, a pump jack will be installed on 8' by 12' timbers or 12 inch concrete dog bones. Gas engines will be used to run the pump jacks.

Brine water will be collected for use in dust control on township and county roads. Carlton has brine spreading permits from Washington County, Monroe County and Newport Township. Area water wells will be protected by running surface casing to a depth of 350 feet. Gels and accelerators will be used to set cement up quickly in the bore hole.

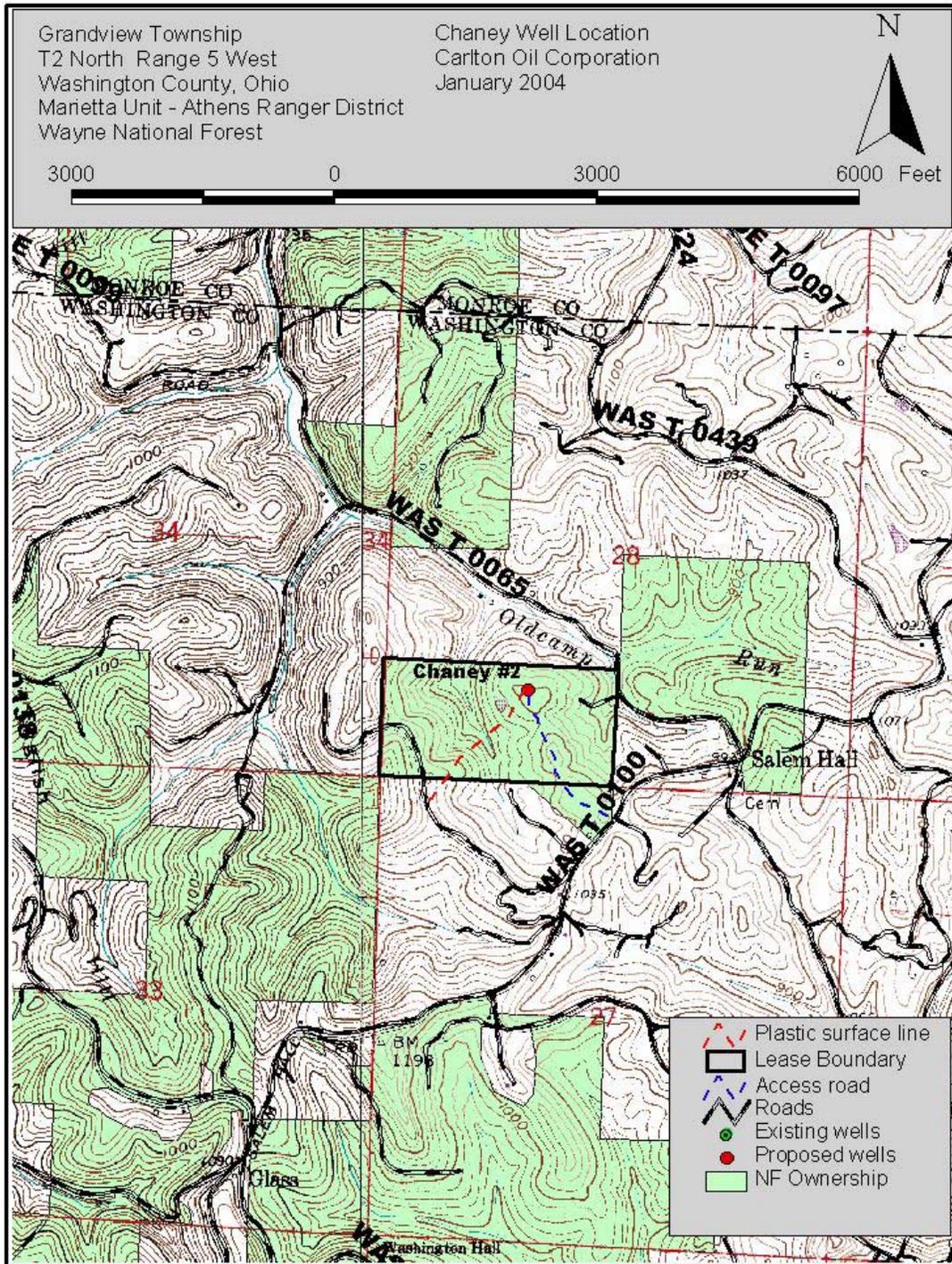
No abnormal pressures or temperatures are expected at any of these wells. No methane or coal gas is expected. Natural gas may be encountered, but at a low, controllable pressure.

Natural gas will be transported from each well site through 1-1/2 inch or 2 inch plastic pipe to the closest intersection with Carlton's current pipeline system. Crude oil will be stored in a tank on location and transported by a crude oil purchaser. There will be a 2-inch steel flow line running from the well head to the tank site. Carlton's proposal is to place all natural gas piping and flow line on top of the ground except where the line would cross a traveled road or trail.

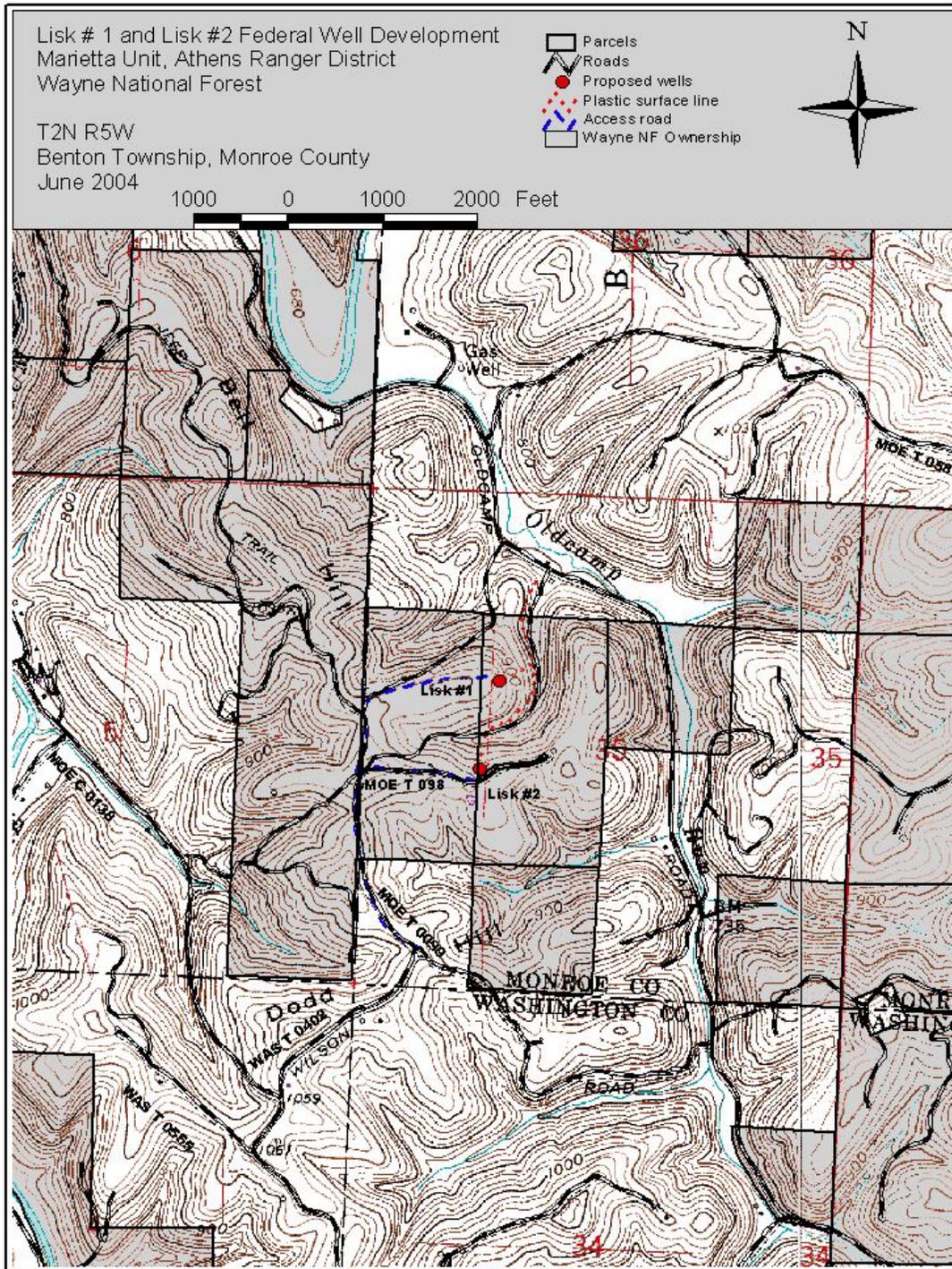
Under this alternative the deciding official would approve the proposed action as submitted by the operator with mitigations as stated in existing stipulations and as proposed by specialists. A listing of the lease stipulations applied to Chaney and Lisk is in the Operator's Submissions in the Project File. Standards and Guidelines applied to oil and gas development are in the Project File. Mitigations applied by the specialists to this proposed action include the standard mitigation for the Indiana bat – no cutting of trees between April 15 and September 15, and a mitigation specific to areas with concentrations of non-native invasive species – washing of heavy equipment before it reaches the site.

<b>Table 2-2: Comparison of Resource Impacts between Two Alternatives</b>		
	No Action	Proposed Action
Site Disturbance	No new site disturbance would occur.	See Table 2-1 for a listing of the site disturbance at each well.
Soil Erosion	No new soil erosion should occur beyond historic sources in local streams	Standard mitigations should prevent most erosion from occurring on these ridge top sites.
Wildlife habitat – forest canopy	No changes in wildlife habitat will occur beyond normal ecological succession.	The forest canopy will be broken with either narrow (roads) or small (well sites) openings. No change in age class or forest structure will occur.
Wildlife habitat – ground	No changes will occur beyond succession.	Soil disturbance from road and well pad construction will change the continuity of habitat on the forest floor. There will be some change in micro-climate where the canopy is broken and more sunshine reaches the forest floor.
Water Quality	No changes in water quality are anticipated, beyond normal soil movement into streams.	No changes in water quality are anticipated. No access roads cross streams. Silt fence will be used around well pads during construction and until stabilized with seed mixture.
Archaeology	No site disturbance will occur.	No sites have been found in the path of this development.
Roads	No changes will occur.	Two roads developed will be special use or lease roads. No new roads will be added as Forest Service system roads.

**Figure 2-1: Map of Chaney #2 Project Location**



**Figure 2-2: Map of Lisk #1 and #2 Project Location**



## **Resources Irretrievably Committed**

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The development of the Chaney #2 well temporarily commits approximately 1.8 acre to development for the life of the well. The development of Lisk #1 commits .69 acre, and Lisk #2 commits 1.39 acres for a total of less than 4 acres in this combined project. There are no irretrievable resources committed related to surface occupancy, as the site could be reclaimed if well development ceases.

## **Resource Concerns:**

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There were no resource concerns identified during field analysis of these wells which cannot be mitigated with standard mitigations. The removal of shrubs and small trees does not alter habitat for any endangered species. The construction of the access roads and well pads creates an opportunity for invasive species to populate new areas. Mitigations to prevent this include a recommendation that all drilling equipment be washed before it moves onto the site and that grass mixtures be planted which will remove the seedbed as soon as possible.

## **Chapter 3. Impacts to the Environment**

The purpose of this section is to analyze the consequences of implementing each of the alternatives to the proposed action.

### **Affected Environment and Associated Impacts**

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The proposed oil/gas wells and the associated access roads on National Forest land, would be located within the Little Muskingum River (LMR) watershed and its Oldcamp Run sub-drainage. The project sites lie within the Southern Un-glaciated Allegheny Plateau Section and the Ohio Valley Lowlands. All subsections are highly or moderately dissected plateaus ranging in elevation from about 500 to 1415 feet above mean sea level. The project sites lie at approximately 95 feet above MSL. Bedrock is mostly Permian (some Pennsylvanian) sandstone, siltstone, shale, limestone and coal. Colluvium and landslide deposits form the bulk of surficial geologic deposits.

### **Past, present and future**

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Oil and gas activities and other ground disturbing activities have occurred in this watershed for decades. Concurrently and since the 1930s there has been a trend for the watershed to become more forested, including along streams. Due to the steep terrain and remoteness of much of the land on the Marietta Unit, there has been little clearing for development activities which would change the vegetative cover. Improved regulations on oil and gas development have also been put in place over the years requiring reclamation after well pad construction and the use of best management practices. Oil and gas activities, as well as other ground disturbing activities, are likely to occur in the foreseeable future. A more complete description of cumulative impacts is available in the Final Environmental Impact Statement for Oil and Gas Activities, Amendment 8 of the Wayne National Forest Land and Resource Management Plan.

### **Impacts by Alternative**

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#### **Alternative A: No Action**

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With no new well development, there would be new road development or clearing for well pads. There will be no clearing of shrubs, small trees, or mature forest. While Alternative A does not allow any new activity, changes will continue to occur in the watershed. Since most oil and gas on the Forest is privately owned, the selection of the No Action alternative will have minimal

impact on mineral development on the Forest. The clearing at Chaney could be considered for a forest opening in the future. There would be less production of oil and/or gas from the well fields now present on the Wayne National Forest. Without development activity the lease on federal minerals would expire in 10 years from the date of issue (2005).

Since no clearing would occur on these ridge tops, the canopy would remain closed and would continue to provide shade and temperature control to understory and herbaceous vegetation. The shaded conditions would likely prevent the spread of multi-flora rose, which exists in the Chaney and Lisk #2 project sites. The forest will continue to mature, favoring habitat for some species and decreasing habitat for others. The shaded conditions would likely prevent the spread of multi-flora rose, which exists in the exposed power line corridor.

### **Alternative B: Approve SUPO with standard mitigations.**

Stipulations were placed on the lease for this tract when it was analyzed during the programmatic analysis of the lease package in 2002. Stipulations prevent surface occupancy within 100 feet of cliff faces, within riparian areas, in forest openings, on ridge tops where Olympia marbles might occur, or on slopes in excess of 55%. There is a stipulation on the timing of disturbance to limit vegetation removal during the cerulean warbler breeding season, and other stipulations which require a minimum of disturbance and maintenance of the structural integrity of old growth. All of these stipulations have been satisfied in Alternative B, the proposed action.

## **Direct Impacts**

### **Wildlife Resources**

The scale of the proposed project as submitted is limited to less than four acres of direct impact. Overall impacts to resident wildlife populations are likely to be mostly short-term, localized, and small in extent by themselves in the big picture. Removal of trees for the three proposed well pads, the widening of existing roads and the construction of new road will result in additional openings in the forest canopy and creation of edge habitat. Breaks in the canopy translate to a direct loss of habitat for some forest species and improved habitat for others. A short-term loss is incurred where the disturbance is temporary, such as along the road and part of the well pad, which would be rehabilitated.

### **Federal Threatened and Endangered species**

The U.S. Fish and Wildlife Service (FWS) has listed the entire state of Ohio as having the potential for Indiana bat occurrence, therefore suitable habitat is present for the federally-listed Indiana bat at these sites. There are several white oak and hickory trees located at the well pad site at Lisk #1 and four large pine snags at the proposed Chaney well site that exhibit suitable roosting characteristics and that will be removed during construction. Access to Lisk #2 follows an un-maintained township road the entire way. The well pad lies in a thicket consisting mostly of multi-flora rose, honeysuckle and lycopodium with an overstory of small pine and some shrubby hardwoods. No dead trees snags or trees with exfoliating bark are located within the Lisk #2 well pad, however nine snags and six living trees having cavities or sloughing bark were observed along the area of potential disturbance along the proposed access road to Lisk #1 and 2 on National Forest land.

The American burying beetle, a federal endangered species, has been found in a broad range of habitats including grasslands, lightly grazed pastures, oak-hickory forests with an open understory, and edge sites. No records of the American burying beetle are known to occur on or near the Marietta Unit. However, there are two historical records of the beetle from the 1920s in

Washington County (D.J. Horn, Professor of Entomology at OSU, 2002, personal comm.) No direct impacts are expected to occur to this species. The habitat and status on the Wayne National Forest of each of these species is addressed more fully in the Biological Evaluation (Jordan 2004).

At this time, the USFWS suggests that bald eagles occurring on the WNF are probably migrating through or only wintering there (USFWS 2001). Since these three project areas are all on ridge tops and are not close to rivers, no suitable habitat is being evaluated in this analysis and no direct impacts would occur.

### **Regional Forester Sensitive Species**

According to the most recent revision of the Regional Forester Sensitive Species list, eleven RFS have been designated for the Wayne National Forest (see Project File E-5, pg 6). Suitable habitat may exist in the project area for the bobcat, black bear, evening bat, cerulean warbler, timber rattlesnake, southern grizzled skipper, juniper sedge, blue scorpionweed and rock skullcap. None of the remaining RFS species were considered in the impact assessment, because there is either no suitable habitat for the species in the project area, or in the case of plants, the species has a well-known distribution that does not include the project area.

### **Management Indicator Species (MIS)**

MIS are plant and animal species, communities, or special habitats selected for emphasis in planning in order to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they may represent. Analysis of project level effects is used to determine an activities' contribution to meeting forest-wide objectives for providing for well-distributed, viable populations. Management activity effects are examined in light of the existing habitat conditions, both within and outside of the Forest, and documented population conditions or trends.

There is no affect from either the proposed alternative or the no action alternative on the pine warbler, pileated woodpecker, cerulean warbler, ruffed grouse, white-eyed vireo, common yellowthroat, field sparrow, or eastern bluebird because of the small amount of habitat that would be affected by these alternatives. No habitat for wood duck, Virginia rail, western chorus frog, or wood frog is affected under any alternatives.

A more complete analysis of habitat and occurrence of these species can be found in the Project File E-5.

### **Common species**

Although not directly observed, a variety of other common woodland wildlife, including many species of mammals, reptiles, amphibians, and invertebrates, likely occur at the three project sites because suitable habitat is present. Examples of potential residents include gray squirrel, gray fox, raccoon, opossum, white-tailed deer, black rat snake, common garter snake, copperhead snake, American toad, gray tree frog, a variety of salamanders, countless insects, spiders, butterflies, moths, dragonflies, and others. These species are considered very adaptable to disturbance in the forest. No direct impacts other than temporary displacement during actual construction activity are anticipated.

## **Indirect Impacts to Wildlife**

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### **Threatened and Endangered Species**

Indirect effects would affect habitat and not individuals of a species. Due to the small acreage of the area to be affected (less than 4 acres), the removal of only a small proportion of trees in an otherwise mostly forested landscape and the timing of the tree removal, anticipated effects of the proposed action to **Indiana bats** are minimal and similar to those anticipated for mineral activity in the Biological Opinion (FWS 2001). The District Wildlife Biologist has determined that the proposed project is likely to adversely affect the Indiana bat due to the permanent removal of potential bat roost trees along the access routes and well sites. However, all terms and conditions from the Biological Opinion (FWS 2001) have been met and affects will be minimal with no direct take of individuals expected.

Long-term loss is associated with the space occupied permanently by the proposed wells. Creation of edge in a previously undisturbed forested area may result in an increase in the number of predators and parasites exploiting the forest interior-adapted species. There may also be more competition for limiting resources along edges, since more species are often found exploiting edge habitats. Blowdowns of trees are more common in edge habitat. The invasion of non-native plants, which tend to out-compete native plants, is common along edges and can drastically change the resources and cover available to resident wildlife.

The openings created, after they are allowed to re-vegetate, would be brushy, and the vegetation would likely become dense, offering some variation in the local habitat. The creation of brush piles along the edges of the disturbance would provide a source of otherwise scarce habitat in the immediate project area. Many species of reptiles, amphibians, small mammals, and some birds are known to use brush piles for cover or nesting. Bats and birds will use the access road corridors for bugging.

The proposed project area is outside of the currently recognized range of the **American burying beetle** in Ohio. There is no incidental take anticipated for this species. Thus, the proposed project will have no effect on this species. Due to the location of these three well projects, there is not likely to be any nesting or roosting habitat available for the **bald eagle** associated with this analysis. No habitat for the **pink mucket pearly mussel** or the **fanshell mussel** is found in the project areas. There is no incidental take anticipated for this species, thus the proposed project will have no effect on this species.

### **Regional Forester Sensitive Species**

Suitable habitat is present for the black bear, bobcat, timber rattlesnake, and butterflies including the grizzled skipper and Olympia marble. **Black bears** prefer wooded cover, although their diet consists mainly of berries, flowers, grasses and sedges, herbs, tubers and roots and nuts of all kind which are found growing in open meadow habitats. They use stream and creek banks as travel lands because of the thick undergrowth and a barrier-free escape route. Black bear sitings are occurring with increasing frequency in and around the vicinity of the Wayne National Forest.

The **bobcat** is found in a variety of eastern habitats including swamps, forests and brushy areas where they can feed on hares, rabbits, birds and small mammals. The closest known bobcat record is in Center Township, Monroe County. Limited numbers of the state endangered **timber rattlesnake** are found in widely scattered areas of southern un-glaciated Ohio in dry wooded hills. There have been two unconfirmed reports of timber rattlesnakes from the Little Muskingum Watershed in Washington County but none in Monroe County (USFS 2002). The

**grizzled skipper** is associated with openings created by earlier disturbance in mature oak forests which include open hillsides, disturbed ridge tops, power line cuts and roadsides. One small population is known to occur on a maintained pipeline corridor in Hocking County. The host plants all require an open canopy and full sunlight. The **Olympia marble** is currently known to occur on dry ridge tops in and adjacent to open oak forests. The regal fritillary occurs in wet fields, pastures, and along roadsides, usually near a woodland border. This species has been known to occur on National Forest land near Lamping Homestead in Monroe County, located approximately four miles to the northwest of the proposed Lisk #1 and #2 well sites.

## **Cumulative Impacts**

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Cumulative effects are the effects on the environment which result from the incremental impact of proposed actions when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individual minor but collectively significant actions taking place over a period of time. Since most oil production on the WNF is from outstanding rights (mineral rights owned in whole by private parties), the additional impact on forest resources from development of these wells will be minimal compared to the total impact of oil production on the Forest.

### **Past, Present and Future Activities in the Project Area**

The impact of any single, new activity in the LMR watershed is difficult to assess independently of historic and present activities. Cumulative effects of land management activities past and present on the mosaic of forest and open land in the Marietta area are dynamic. The cumulative effects of development on private land are unknown. Road building and maintenance, farming, and other well development can cause fragmentation of habitat, alteration of micro-climates, and introduction of non-native species. Increased sediment load can have a negative effect on the survival and reproductive success of eggs and larvae, affecting some species directly and other, mainly predators, indirectly.

The degree of impact that forest fragmentation has on wildlife resources depends on the location of the activities and the species present. Construction activities in areas that are already altered or largely fragmented will be less disruptive to natural processes than are activities in forest areas that are largely intact. While loss of natural plant communities and ecosystem fragmentation adversely affect many wildlife species, openings created by oil and gas development activities may be beneficial to some species that utilize open land or semi-open land habitats. Effects on species and habitat diversity are dependent upon: location, distribution, and ecological potential of these openings; plant communities and vegetation structure resulting from management treatments in the openings; human activities in and near the openings; and other land uses in the area.

The many small openings created by oil and gas activities throughout the watershed taken together with the other more complete or permanent human disturbances in riparian areas (e.g., permanent roads and agriculture) create magnified effects discussed under Direct and Indirect Impacts.

The project as proposed may affect the Indiana bat. However, with the incorporation of the mitigation described in Terms and Conditions #5 of Forest Plan Amendment #13, and due to the small acreage of the area to be affected (less than 4 acres), the removal of only a small proportion of trees in an otherwise mostly forested landscape, and the timing of the tree removal, anticipated effects of the proposed action to Indiana bats are minimal.

## **Botany Resources**

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The species considered and then evaluated in this biological evaluation include

- All federally threatened, endangered or proposed by US Fish & Wildlife Service,
- Regional Forester's sensitive species, and
- Species for which viability is a concern, i.e. locally monitored

Four federally listed plant species were identified as on or adjacent to the Wayne National Forest, including running buffalo clover, northern monkshood, Virginia spiraea, and small whorled pogonia. None of these species are known to occur in or near the project area. Small whorled pogonia and running buffalo clover occur in hardwood forests, but no direct effects, adverse or beneficial, are expected from this project on these species. The species are not known within the project site and were not located in the project site during surveys. There are no cumulative effects of this project on any federally threatened, endangered, or proposed plants.

None of the 11 plant species currently on the Regional Forester's Sensitive species list for the Wayne National Forest were found within the project area, however potential habitat for juniper sedge blue scorpionweed and rock skullcap were identified in the areas. Of these species, only rock skullcap is known to occur in Monroe and Washington Counties. While no individuals were found of these three species, the use of heavy machinery and road construction could alter potential habitat for the species, but would not cause a trend toward their federal listing. Neither habitat nor individuals of the remaining eight RFS will be affected by the proposed action.

Of the 16 plant species being monitored by the US Fish and Wildlife Service, five have potential habitat in the area and one species is known to occur in Monroe and Washington Counties.

The anticipated site disturbance with heavy equipment brought in from off-site, which disturbs the soil and increases sunlight exposure to the ground, has a high risk of transporting and spreading non-native invasive species (NNIS) into the project area. If these NNIS were allowed to establish, they could easily compromise habitat quality, and thus jeopardize any existing or future populations of rare species in the project area. Under Executive Order 13112, federal agencies whose actions may affect the status of invasive species shall not authorize, fund or carry out actions that are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless the agency had determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species.

NNIS were observed along the proposed access routes and at each of the three well sites. The project area contains several populations of very formidable invasive species, including multi-flora rose, which is growing at all of the well sites, along portions of the existing access route, and along the proposed new access road. Japanese and/or bush honeysuckles were observed at the Lisk well sites and along portions of the access routes. Garlic mustard was also observed within the project area.

### **Mitigation**

To reduce the likelihood of any new NNIS introductions and invasions, it is recommended that all equipment be cleaned of soil and vegetation before entering the project area. Equipment cleaning could be done at any commercial car wash facility or other facility with a high-powered hose. This recommendation has been incorporated into the proposed action.

## **Visual and Recreation Resources**

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Each of these project areas is in a Visual Quality Standard of Modification according to the 1988 Wayne National Forest Land and Resource Management Plan. This standard allows that normal forest management activities, including oil and gas development, may be visible at the completion of a project.

The North Country Trail is approximately 4,200 miles long and travels from New York to North Dakota. The Marietta Unit includes 40 miles of the trail, partially on private land. According to the 1994 topographic maps, about 10 miles of the 40 miles is located on roads (PF 7-5). The trail passes several of the 1000 wells on FS ownership on the Marietta Unit. The Desired Future Condition of the NCT is that “the trail will be administered and managed as a path whose use is primarily for hiking and backpacking. (MOU between the National Park Service, the US Forest Service, and the NCT Trail Association).

The North Country Trail (NCT) currently uses about 1000 feet of an un-maintained track which has been requested for use as an access road for this project. There are other areas of the Forest where the NCT follows mineral access roads. Implementation of this project would cause a strong visual impact during re-construction of the road and for several years while it re-vegetates to trail width. After several years use should be minimal and should not have much of an impact on users of the Trail. The Lisk #1 well pad will be visible from the Trail through mature forest. There are numerous other wells visible from the NCT in eastern Ohio. The operator’s plan to paint the well facilities forest green helps them to blend in with the natural environment, but does not obscure them from view of the trail. Implementation of the proposed action would result in a recreation experience similar to the current condition.

## **Heritage Resources**

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No known sites will be disturbed by the construction of the access roads and the three well pads in this project.

## **Roads Analysis**

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Alternative B includes construction of approximately 3100 feet of road for access. Construction at Lisk #1 will be an extension of a low-level maintenance road that is closed to public vehicle use. The construction would occur on a relatively flat location on a ridge top. Since this road requires minimal design, is solely for the use of the oil operator, and is not anticipated to be added to the Forest Road Inventory, it was determined that no Roads Analysis was necessary.

## Chapter 4: Consultation, Coordination, and List of Preparers

Consultation was completed with the US Fish and Wildlife Service, the Bureau of Land Management, the Ohio Historic Preservation Office, and the Ohio Division of Natural Areas and Preserves.

### List of Preparers

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Ann Cramer,	Archaeologist	Wayne National Forest
Sylvia Jordan	Biologist/Botanist	Bureau of Land Management
Lynda Andrews	Wildlife Biologist	Wayne National Forest
Tom Thompson	Minerals Technician	Wayne National Forest
Marsha Wikle	ID Team Leader	Wayne National Forest

### Bibliography

USFWS 2001. Biological Opinion on the Land and Resource Management Plan for the Wayne National Forest, Ohio. U.S. Fish and Wildlife Service. Reynoldsburg, Ohio. 52 pp.