

## Cover Sheet

**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.

This notice meets the requirement in CFR 36 Part 215 Notice, Comment, and Appeal Procedures for National Forest System Project and Activities in which the deciding officer may determine the most effective timing for publishing the legal notice of the proposed action and opportunity to comment (as published in Federal Register June 4, 2003).

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

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**TYPE OF STATEMENT: ..... 1**

**LEAD AGENCY: ..... 1**

**COOPERATING AGENCIES: ..... 1**

**DECIDING OFFICIAL: ..... 1**

**FOR FURTHER INFORMATION: ..... 1**

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

### DRAFT 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 (see Appendix A). 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.

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.

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

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

### **Organization of Document**

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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**

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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**

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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**

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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.

<b>Table 2-1: Proposed Development Activities for Chaney and Lisk Wells</b>			
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		Same as Lisk #2	3290 feet on unmaint T 98
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		1-1.2" plastic surface 890 ft	1-1/2" black plastic 1430 feet
Natural Gas Line - pvt		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 millimeter 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.

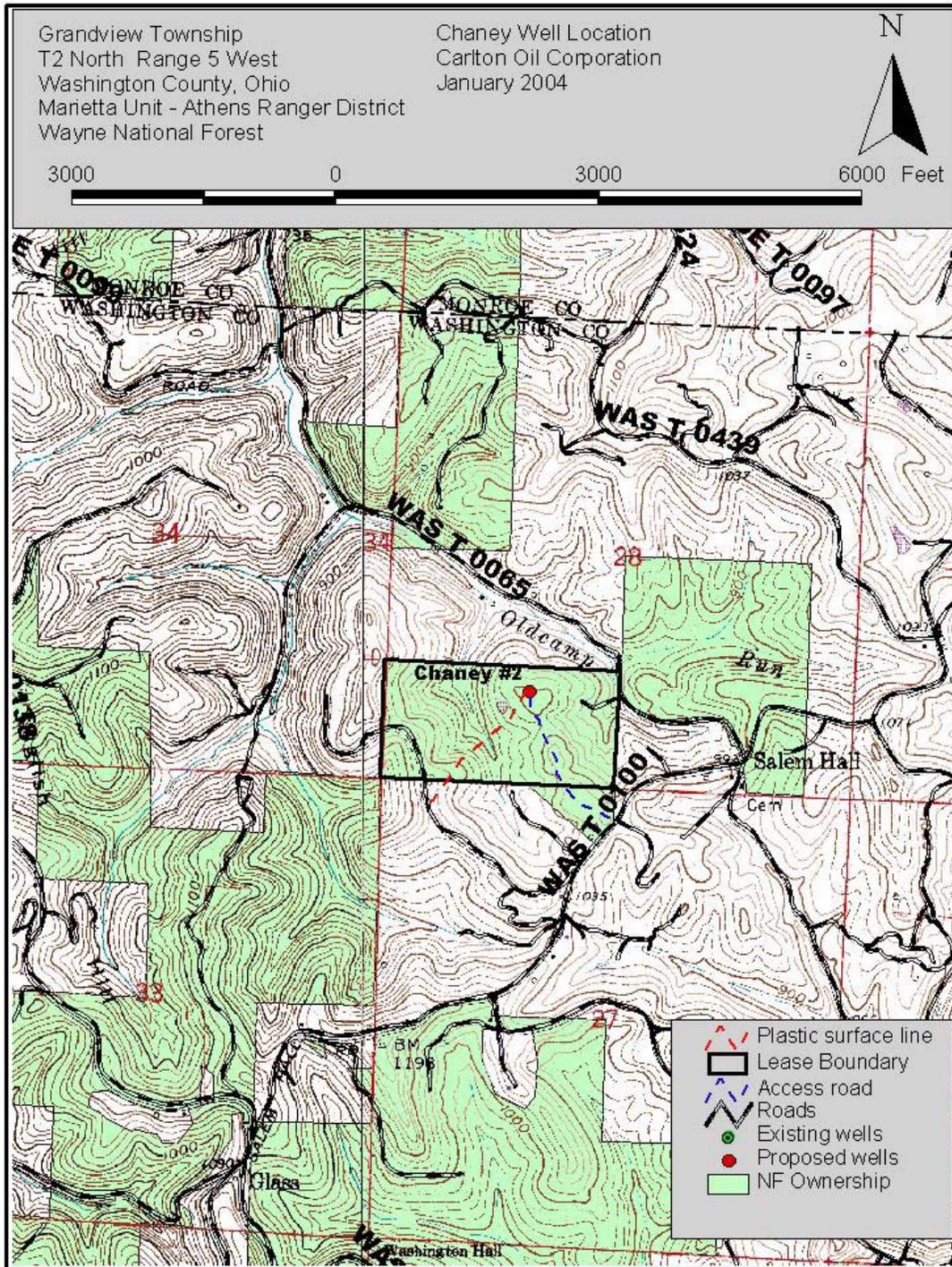
No abnormal pressures or temperatures are expected at any of these wells. No methane or coal gas is expected. Natural gas may be encountered, but at a low, controllable pressure.

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.

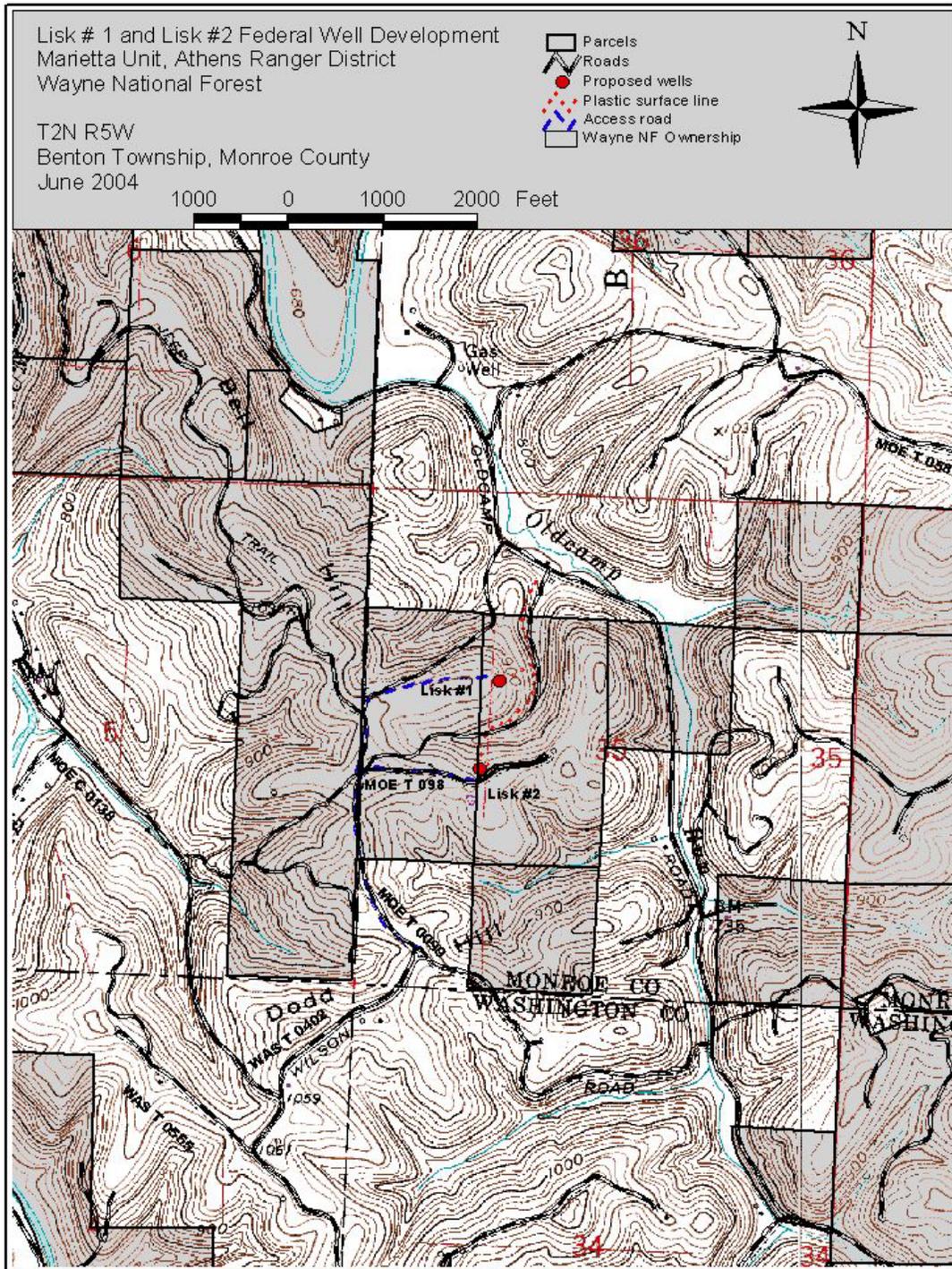
Under this alternative the deciding official would approve the proposed action as submitted by the operator with mitigations as stated in existing stipulations and as proposed by specialists. A listing of the lease stipulations applied to Chaney and Lisk is in the Operator’s Submissions in the Project File. Standards and Guidelines applied to oil and gas development are in the Project File.

<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**



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### **Resources Irretrievably Committed**

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.

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### **Resource Concerns:**

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 the washing of drilling equipment before it moves onto the site and planting with grass mixtures 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.

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

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 (MSL). 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.

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

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.

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### **Impacts by Alternative**

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

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 (2003).

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.**

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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 ridgetops 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.

## **Direct Impacts**

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### **Wildlife Resources**

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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 proposed well pads and roads results 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. 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 and consultation with FWS is underway. There are several white oak and hickory trees located at the well pad site at Lisk #1 that exhibit suitable roosting characteristics and that will be removed during construction. Access to Lisk #2 follows an unmaintained 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 well pad or access road 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 in Monroe or Washington County, so no direct impacts would 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 (Andrews 2004).

At this time, the USFWS suggests that Bald Eagles occurring on the WNF are probably migrating through or only wintering there (Boyer 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**

Suitable habitat is present for the black bear, bobcat, timber rattlesnake, and butterflies including the grizzled skipper, Olympia marble, and regal fritillary. **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. No sitings are known in Monroe or Washington County. 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 in Monroe County, though it is extremely localized and may now be extirpated from Ohio.

### **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.

White-eyed Vireo, Pileated Woodpecker, and Common Yellowthroat are MIS species that potentially have suitable habitat in the project area. Effects to the **Pileated Woodpecker** could occur during the clearing process, although few trees present on-any of the sites offer suitable nesting or foraging habitat for this species. The overall impact to the Pileated Woodpecker would be insignificant, because only a small area is affected by the clearing and drilling operation, and suitable habitat is available for this species throughout the Forest. **Common Yellowthroats** have not been documented on the Marietta Unit; however, suitable habitat appears to exist at the site. Individuals may be affected by the clearing of vegetation for the project, but the small scale of the proposed action is unlikely to affect the species.

This project is not expected to affect the viability of any Management Indicator Species on the Wayne National Forest. A description of suitable habitat and population surveys for Management Indicator Species and Regional Forest Sensitive Species can be found in the Biological Evaluation in the project file.

### 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 not likely to adversely affect the Indiana bat.

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. There is no incidental take anticipated for this species, thus the proposed project will have no effect on this species.

### Regional Forester Sensitive Species

The proposed project will eliminate one half acre of potential **Cerulean Warbler** nesting habitat. The amount of suitable habitat lost as a result of the proposed action would be minimal compared to the amount of remaining adjacent habitat in the Marietta area. Thus, the project may impact individuals but is not likely to cause a trend towards federal listing or the loss of viability of the species.

The opening of the canopy that would be associated with these three projects could increase the amount and density of undergrowth found at the project site over time, which could positively

impact **black bear**, both with regard to food and cover production. There is also an associated, negative impact from noise both during the drilling operation (short-term) and after, when the pump is in operation (long-term). This project may impact individuals but is not likely to cause a trend towards federal listing or the loss of viability of the species.

**Bobcat** shy away from human contact and are found most often in areas not accessible by motorized vehicles (Svendsen 1979). Thus, they are impacted by any human encroachment on previously undisturbed habitat. This project may impact individuals but is not likely to cause a trend towards federal listing or the loss of viability of the species. Limited roosting habitat is available at the site for **Evening bats**. The mitigation required for the Indiana bat would likely benefit this species as well. Therefore, the proposed action is not likely to adversely affect this species.

No **Wabash river cruisers** have been recorded on or near the Marietta Unit. Thus, the project may impact individuals but is not likely to cause a trend towards federal listing or the loss of viability of the species. The removal of trees on the on several ridge tops may create more suitable habitat in the project area for the **southern grizzled skipper**. Thus, the proposed project may benefit this species in the short-term. Opening up of the forest canopy at the project site may increase suitable habitat for the **regal fritillary**. Thus, the proposed project may benefit this species in the short-term.

### **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 and similar to those anticipated for mineral, it is my determination that the proposed project is not likely to adversely affect the Indiana bat.

## **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
- 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 occurs in hardwood forests, but no direct effects, adverse or beneficial, are expected from this project on the species. The species is not known within the project site and was not located in the project site during a recent survey. 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 has habitat suitable to the project site or is known to occur in Monroe County. Neither habitat nor individuals of the eleven Regional Forester (R9) sensitive species will be affected by the proposed action.

Of the 16 plant species being monitored by the US Fish and Wildlife Service, none has suitable habitat or is known to occur in Monroe County.

Of the uncommon plants for which location maps are maintained at the Athens Ranger District, six are known to occur in Monroe County. Analysis was considered on three species. No direct effects, adverse or beneficial, are expected from this project on Prince's pine. Prince's pine has habitat similar to that found at the project site. The locally uncommon cutleaf toothwort is known from Monroe County, but occurs in rich mesic woods, sometimes on rich mesic terraces. These habitats are not present at the project site. No direct, indirect, or cumulative effects to the species are expected as a result of the proposed action.

The anticipated site disturbance at all three sites will cause a change in conditions that would increase the likelihood of introducing and spreading NNIS, which could displace native species on the floodplain over time. Non-native invasive species pose a serious threat to plant and animal community health and diversity. Exotic species often lack natural controls, which allows them to out compete and eventually replace more sensitive native species. With any management activity

that creates soil disturbance combined with canopy opening, or that requires the use of heavy equipment brought in from off-site, there is a high risk of introducing and spreading NNIS into the project area. The project area contains several small populations of very formidable invasive species, including multi-flora rose, garlic mustard, and gill-over-the-ground that thrive in disturbed open habitats.

During the drilling operation, mineral soil would be exposed and the canopy removed, which would create prime conditions for the expansion of these existing NNIS. New non-natives would likely also be introduced from mud and vegetation debris tenant on drilling equipment brought in from areas outside of Monroe and Washington Counties.

### **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 ridge tops. 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