United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201

ENVIRONMENTAL ASSESSMENT
EA# NM-060-01-**084**

WELL NAME & NO.: Oasis "15" Federal #1
BLM Serial #: NM-94087

Section 15, T. 10 S., R. 30 E., NMPM,
1,330' FSL & 1,980' FWL

Chaves County, New Mexico

OPERATOR: Nadel and Gussman Permian L.L.C.

ACTION: Application for Permit to Drill

SURFACE/MINERAL ESTATE: Federal - Minerals/Surface

I. Introduction

A. Need for the Proposed Action:

Nadel and Gussman Permian L.L.C. proposes to drill and complete a natural gas well at the above described location. The proposed action is needed to develop the mineral lease.

B. Conformance with Land Use Plan:

Oil and gas leasing and development is addressed in the Roswell Resource Area Proposed Resource Management Plan/Final Environmental Impact Statement, January 1997, and is in conformance with the Roswell Approved Resource Management Plan and Record of Decision, October 1997.

C. Relationship to Statutes, Regulations, or other Plans:

The proposed action does not conflict with any known State or local planning, ordinance or zoning.

II. Proposed Action and Alternatives

A. Proposed Action

Nadel and Gussman Permian L.L.C. submitted an Application for Permit to Drill, to drill the Oasis "15" Federal #1 gas well on 1/11/01.

The proposed action would include:

1. The construction of approximately 2,112 feet of new access road from the existing access road to the southeast corner of the proposed well pad. All other existing access roads would be maintained in as good or better condition than were existing at the commencement of operations.

2. The construction of the proposed well pad would be 195 feet long by 285 feet wide. The construction of the reserve pit would be about 150 feet by 125 feet and dug 4 feet below ground level. The reserve pit would be located on the north side of the drill pad. Standard oilfield construction equipment consisting of; track-type tractors, motor graders, dump trucks, and water trucks would be used to construct the access road and well pad. A rotary drilling rig would be used to drill the well. Associated production facilities (e.g., separator, storage tanks, etc.) would be installed during the production phase of this well. Topsoil would be stockpiled for future use over the disturbed areas.

3. Surfacing material (caliche/gravel) needed for the construction of the access road and well pad could be obtained by the operator from a federal pit in the SE¼SE¼ of Section 17 - T. 10 S. - R. 30 E., Chaves County, New Mexico.

4. Construction activities would be conducted outside of the period of March 15th through June 15th to protect lesser prairie chicken habitat.

B. Alternatives:

1. Relocate the Proposed Action

The well location is determined on the basis of subsurface geologic information and by spacing regulations imposed by the New Mexico Oil Conservation District II. No other alternative location would have significantly fewer impacts than, or have a clear advantage over, the proposed location. Therefore, the alternative of changing the location involved in this action is not analyzed further in this EA.

2. No Action

Under this alternative, the application would be rejected. None of the environmental impacts associated with the proposed action or alternate location would occur. Additionally, economic benefits of the proposed action would not be realized, and the existing environment, including the developments in place, would remain unchanged.

III. Description of the Affected Environment

A. General Setting:

The proposed access road and well pad are located on federal minerals and surface, about 35 miles east of Roswell, N.M.. Historical and present use of the subject lands consist of livestock grazing, energy development, recreational hunting, and watchable wildlife.

The major plant community occurring within the access road and well pad is shinnery oak/dune (SOD). The principal features in the SOD community and topography are influenced by aeolian and alluvial sedimentation on upland plains forming hummocks, dunes, sand ridges, and swales, with vegetation cover that is primarily shinnery oak.

This is a unique community type found primarily below the Llano Estacado or Staked Plains, in an area known as Mescalero Sands. It lies in the Canadian Plains and Southern Desert ecosystem between the elevations of 4,100 feet and 4,300 feet. The topography is gently sloping and undulating sandy plains, with moderate to very steep hummocky dunes of up to ten feet and more in height scattered throughout the area. Some of the dunes are stabilized with vegetation, while a number of them are unstable and shifting. Dune blowouts occur with peripheries of shinnery oak and bluestem, and are found either isolated or in dune complexes which are very common in this community. The proposed access road and well pad are located in a shinnery oak treated pasture. Therefore the presence of shinnery oak has been diminished and is not as prevalent as the potential natural plant community.

B. Rights of Record:

An inspection of the Master Title Plats and other Bureau records revealed the following title information pertaining to valid existing prior rights on the subject lands:

- Oil and gas leases: NM-94087 - covers lease actions.
- No federally administered rights-of-way would be affected in the project area.
- No mining claims are recorded within Sec. 15, T. 10 S., R. 30 E., NMPM.

C. Affected Resources:

The following critical resources have been evaluated and are either not present or are not affected by the proposed action or the alternatives in this EA:

Areas of Critical Environmental Concern (ACEC's)
Cultural Resources **(01-R-017-A & B)**
Farmlands, Prime/Unique
Floodplains
Native American Religious Concerns
Threatened or Endangered Species (Plants & Animals)
Wastes, Hazardous/Solid
Wetlands and Riparian Zones
Wild & Scenic Rivers
Wilderness

1. Air Quality:

The area of the proposed action is considered a Class II air quality area. A Class II area allows a moderate amount air quality degradation. The primary sources of air pollution are dust from blowing wind on disturbed or exposed soils and exhaust emissions from motorized equipment.

2. Soils:

The proposed action would occur in deep, excessively drained soils on high terraces referred to as Roswell fine sand as described in the Soil Survey of Chaves County, New Mexico, Northen Part (Page 61 & map #30). The soil formed in eolian deposits. Permeability of the Roswell soils is rapid, runoff is slow, and the hazard of water erosion is slight. The hazard of soil blowing is very high. The soils are found on 10 to 30 percent slopes. The mean annual precipitation is 13 to 14 inches.

3. Vegetation:

The native vegetation in the area is composed of mainly tall and mid grasses, shrubs, and forbs, such as, sand bluestem, little bluestem, mesa dropseed, and shinnery oak.

The Sand Hills CP-2 range site is located within the SOD plant community and key vegetation is shinnery oak with bluestem and dropseed grasses. The deep sand community is a unique ecological area dominated by tall and mid-grasses. In many areas, the shinnery oak community has shifted from a dominant sand bluestem/little bluestem/hairy grama grassland with varying amounts of shinnery oak, sand sage and yucca to a community dominated by sand dropseed, red and purple three-awn and hairy grama, with increasing annual forbs, shinnery oak, mesquite, sand sage and yucca.

4. Ground Water Quality:

Fresh water sources for livestock and domestic use are found in the Quaternary Alluuviums and the Ogallala and Chinle formations. Possible useable waters in the Triassic Age rocks which includes both the Chinle and the Santa Rosa Formations. Fresh water for livestock use has been encountered at 300 feet, just barely penetrates the Chinle formation.

5. Wildlife:

The Caprock Wildlife Habitat Area (WHA) includes the Marley Ranches Allotment (65051). The Caprock WHA provides diverse habitat for more than 54 birds species, 33 species of mammals, and 36 species of reptiles and amphibians.

Raptors that are frequently associated with the vegetation types on this allotment are the red-tailed hawk, swainson's hawk, ferruginous hawk, roughlegged hawk, great-horned owl, burrowing owl, and the american kestrel.

Game bird species in this areas include the lesser prairie chicken, scaled and bob white quail, and the mourning dove. Other bird species that are usually observed are the turkey vulture, roadrunner, chihuahuan raven, northern flicker, loggerhead shrike, common nighthawk, western meadowlark, western kingbird, pyrrhuloxia, horned lark, and other passerine birds.

At least 33 species of mammals occur on or utilize this allotment. The diversity of small mammals provide for an excellent prey base for carnivores such as the coyote, gray fox, bobcat, raccoon, badger, hooded skunk and striped skunk.

Mammals that provide a prey base include the black-tailed jack rabbit, desert cottontail, spotted ground squirrel, pocket mice, deer mouse, kangaroo rats, northern grasshopper mouse, harvest mice, and the white throated woodrat.

Two big game species that occur on the allotment are pronghorn antelope and mule deer.

Reptiles and amphibians that inhabit the area are the dune sagebrush lizard, southern prairie lizard, lesser earless lizard, side-blotched lizard, longnose leopard lizard, sixlined racerunner, tree lizard, skinks, western diamond back, western rattlesnake, coachwhip, spadefoot toads, western box turtle, and the yellow mud turtle.

Threatened and Endangered Species:

Federal threatened, endangered and candidate species as well as state-listed threatened or endangered species potentially occurring within the access road and well pad will be analyzed in this document. Candidate species and State listed species do not receive protection under the Endangered Species Act (ESA) until proposed. However, within the act and under BLM policy the bureau has an obligation to ensure actions do not contribute to the need to list these species. There are no known T/E species occurring within the proposed action areas.

Special Status Species:

Dune Sagebrush Lizard:

The dune sagebrush lizard is listed by the New Mexico Department of Game and Fish as Endangered, Group 2 and by the U. S. Fish and Wildlife Service as a Category 2, Notice of Review species. The dune sagebrush lizard only occurs in the southeastern corner of New Mexico and the western region of Texas. Within that range its habitat is restricted to active sand dunes and their peripheries (Degenhardt and Jones 1972). Shinnery oak is the dominate plant species that surrounds the top edge of the active sand dune, with a small composition of grasses inside the blowout area.

During 1991 a study was begun to examine the effects of the removal of shinnery oak on lizard habitat. Through five years of research it was demonstrated that there were 70%-94% fewer lizards in treated pastures as compared to non-treated pastures.

Lesser Prairie Chicken:

Several years ago a petition was filed with the U. S. Fish and Wildlife Service (FWS) to list the prairie chicken as threatened. On June 1, 1998 the USFWS announced a finding for the petition. After review of all available scientific and commercial information, the U. S. Fish and Wildlife Service finds that listing this species is warranted but precluded by other higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. The lesser prairie chicken is added to the U. S. Fish and Wildlife Service's candidate species list.

In southeastern New Mexico, lesser prairie chickens exist in the shrub-dominated High Plains Bluestem Subtype. The lesser prairie chicken's habitat is the mixed stands of tall grass and shinnery oak.

Male prairie chickens visit or establish booming grounds (leks) from early March to late May, with the peak booming activity occurring around the middle of April. Booming grounds can be found in mesquite shortgrass, shinnery oak grasslands, shinnery oak dunes, abandoned oil/gas pads, pipelines, and roads. The basic requirement for lek sites is visibility of the immediate surroundings (shortgrass and topography).

Female lesser prairie chickens prefer a range in excellent condition for nesting. In areas of shinnery oak, nesting studies (Copelin 1963, Riley 1978) indicate that these birds prefer shinnery oak rangeland habitat dominated by mid and tall grass species. Wisdom (1980) demonstrated that nesting success was enhanced by the presence of tall, wide clumps of sand bluestem, which are found in a few near-climax areas in the shinnery oak-grassland, while areas

devoid of sand bluestem were not highly conducive to nesting success. In areas where sand bluestem is scarce, little bluestem apparently serves as an acceptable substitute (Merchant, 1982). Riley et al. (1992) found that most successful nests occurred where basal composition of sand bluestem was greater and the height of vegetation above successful nests averaged 67 cm, while height of vegetation above unsuccessful nests averaged 35 cm. Copelin (1963) found that the most successful nests were placed between clumps of grass residue left from the previous year's growth that provided overhead cover. Brooding areas are often within habitats which are in lower seral stages usually having a high proportion of bare ground and annual forbs (Riley et al. 1992, Jones 1963).

Food requirements vary among the seasons. Prairie chickens rely heavily (97%) on forbs and other green plant material during the spring and invertebrates in the summer. The early fall diets consist of invertebrates and green plant material, while winter diets consist of mast from shinnery oak.

Above is a general description of prairie chicken habitat requirements. As with most wildlife species, especially upland game birds, precipitation plays a large role in population fluctuations and habitat conditions. Precipitation patterns have fluctuated drastically for the last twenty years. During the middle eighties precipitation was above normal and chicken populations responded very well. With the exception of two years, precipitation has been well below normal during the 1990's.

Population Monitoring Data

The Roswell Field Office has actively monitored prairie chicken booming grounds, population trends and habitat since the early seventies. Historically in New Mexico, the LPC occupied most of the eastern plains. However, numbers and occupied range of the species are much reduced; apparently in response to prolonged heavy grazing and brush control in combination with the great droughts of the 1930's and 1950's. It has been reported that currently the LPC occupies approximately one half their original range in New Mexico. Since the early 1970's LPC populations have fluctuated up and down with the highest period occurring during the middle 1980's. Within the proposed project area, there are six documented booming grounds that have been active at one time or other. During the middle eighties 5 out of the 6 leks were active and averaging 6.1 birds. Since 1993 very little lek activity has occurred.

6. Visual Resources:

The allotment is located in a Class IV Visual Management Area. The Class IV rating means that contrasts may attract attention and be a dominant feature in the landscape in terms of scale. However, the changes should repeat the basic elements of the landscape.

7. Recreation:

Recreational opportunities on the public lands are somewhat restricted by limited access. The primary recreational activity occurring in this area is hunting. Mule deer, pronghorn antelope, and game birds, such as, quail and dove are taken during hunting seasons regulated by the New Mexico Department of Game and Fish. Off Highway Vehicle designation for public lands within this allotment are classified as "Limited" to existing roads and trails.

6. Range: The well is located on a BLM grazing allotment 5045, Marvin Watts, P.O. Box 56, Carlsbad, N.M., 88220

Non-Native and Invasive Weed Species (Noxious Weeds): There are no known populations of noxious or invasive weed species at the proposed site.

7. VRM/Recreation: The proposed action is located in a designated VRM Class IV area. Recreation in the vicinity includes seasonal hunting.

8. Cave/Karst: No surface cave/karst features were observed in the immediate vicinity of the proposed actions.

9. Minority or Low-income Populations or Communities: The proposed project would not affect the minority or low-income populations or communities.

IV. ENVIRONMENTAL IMPACTS

A. Proposed Action Impacts:

The surface disturbance involved in the construction of the access road, well pad, and reserve pit would total about 3.2 acres of federal surface.

1. Air Quality:

Air quality would temporary be impacted with pollution from exhaust emissions, chemical odors, and dust that would be caused by the motorized equipment used to construct the access road, well pad, and by the drilling rig that will be used to drill the well. Dust dissemination would discontinue upon completion of the construction phase of the road and well pad. Air pollution from the motorized equipment would discontinue at the completion of the drilling phase of the operations. The winds that frequent the southeastern part of New Mexico generally disperse the odors and emissions. The impacts to air quality would be greatly reduced as the construction and drilling phases are completed.

2. Soils:

The construction of the access road and well pad would physically disturb about 3.2 acres of topsoil material and vegetation. Construction of the reserve pit would affect deeper soil horizons because of the proposed 4-foot depth of the pit. The exposed soils would be susceptible to wind blowing and water erosion. Surfacing the exposed areas would minimize the impacts to the soil. The impact would be remedied upon reclamation when the stockpiled soil would be spread over the disturbed areas to establish a seed bed.

The access road would be impacted when heavy precipitation causes water erosion damage. When water saturated segment(s) on the access road become impassable, vehicles may still be driven over the road. Consequently, deep tire ruts would develop. Where impassable segments are created from deep rutting, unauthorized drive-arounds may occur outside the designated access road. This creates additional soil impacts associated with lease development. Road constructions requirements would alleviate potential impacts to the access road from water erosion damage.

3. Vegetation:

Construction activities for the access road and well pad would remove about 3.2 acres of native vegetation from the site. Vegetation recovery on the site would depend on the life of the well. If drilled as a dry hole and plugged, reclamation of the site would immediately follow. Vegetation impacts would be short-term with the site re-vegetating in a few years, if the surfacing material (caliche) is hauled off or ripped and re-seeded. If it is a producing well, reclamation would not commence until the well is a depleted producer and plugged and abandoned. Native vegetation would encroach on the site over time with only high traffic areas remaining unvegetated.

4. Ground Water Quality:

The use of a plastic-lined reserve pit would reduce or eliminate seepage of drilling fluid into the soil and eventually reaching groundwater. Spills or produced fluids (e.g., saltwater, oil, and/or condensate in the event of a breech, overflow, or spill from storage tanks) could result in contamination of the soils onsite, or offsite, and may potentially impact groundwater resources in the long term. The casing and cementing requirements imposed on the proposed well would reduce or eliminate the potential for groundwater contamination from subsurface sources.

5. Wildlife:

Some small wildlife species may be killed and their dens or nests destroyed during construction of the well. The construction of the access road and well pad could cause fragmentation of wildlife habitat. The short term negative impact to wildlife would occur during the construction phase of the operation due to noise and habitat destruction. In general, most wildlife species would become habituated to the new facilities. For other wildlife species with a low tolerance to activities, the site would continue to displace wildlife from the area due to ongoing disturbances such as vehicle traffic and equipment maintenance. The conditions of approval would alleviate most losses of wildlife species, such as fencing off reserve pits, netting storage tanks, installation or other modifications of cones on separator stacks, and timing stipulations. Upon abandonment of the well, the area would revegetate and wildlife would return to previous levels.

Special Status Species:

Sand Dune Lizard:

Substantial impacts to the sand dune lizard would not result from the construction of the access road and well pad due to the fact that the area has unavailing habitat necessary for the species to survive. It is possible that a few colonies may exist within the surrounding shinnery oak dune complexes, but since the immediate area has been chemically treated for shinnery oak eradication, there is an 86% chance that there are not any sand dune lizards on the access road and well pad.

Lesser Prairie Chicken:

The construction of the access road and well pad would impact the lesser prairie chicken and its habitat, not only during the construction and drilling phases of the operations, but by the

development of new access roads, well pads, pipeline construction, routine maintenance inspections, and other multiple activities performed by the operator and the general public. Seasonal restrictions would minimize some of the impacts by allowing the booming period to continue without intensive interference from high noise levels produced by construction equipment and drilling rig engines. However, the areas around the well pad that are left untouched could be utilized by the lesser prairie chicken and the impacts from the continual displacement of lesser prairie chicken would be minimized.

6. Range:

The construction of an access road and/or well location may unintentionally contribute to the establishment and spread of noxious weeds. Noxious weed seeds could be carried onto the project areas by construction equipment, the drilling rig, and transport vehicles. The main mechanism for seed dispersion on roads and well pads is by equipment and vehicles that were previously used and/or driven over noxious weed infested areas.

The potential for the dissemination of invasive and noxious weed seeds may be elevated by the use of construction equipment typically contracted out to companies that may be from other geographic areas in the region. Washing and decontaminating the equipment prior to transporting the equipment on site would minimize this impact.

7. VRM/Recreation:

The construction of the access road and well pad would slightly modify the existing visual features of the landscape due to other oil and gas facilities currently in place. Until reclamation of the access road and well pad are accomplished, oil and/or gas field operations may dominate the view of the landscape.

8. Cave/karst: There would be no impact to known cave entrances, or karst features within the project area.

9. Minority or Low-income Populations or Communities: The impact of the proposed action and alternatives to minority or low-income populations or communities has been considered and no significant impact is anticipated.

B. Alternatives:

1. Relocation Alternative:

The alternative of changing the location involved in this action was not analyzed further because no other alternative location would have significantly fewer impacts than, or have a clear advantage over, the proposed location.

2. No Action Alternative:

The No Action alternative would constitute denial of the application. None of the identified environmental impacts would occur. There would, however, be an adverse economic impact to

the applicant through the denial of the lessee's right to develop the mineral reserves or through increased costs of accessing those mineral reserves through other means.

C. Mitigation:

The Roswell Field Office; Well Drilling Requirements (Exhibit B), Conditions of Approval (Exhibit C), Permanent Resource Road Requirements (Exhibit D), and the special requirements derived from this EA, would be applied to this proposed action to minimize the surface disturbance and conserve the surrounding landscape.

D. Cumulative Impacts:

While it is likely that there will be no significant cumulative impact from the proposed action, continued oil and gas development, and other surface-disturbing activities in this area, may potentially have negative cumulative impacts on vegetation, soil, water, livestock, and wildlife.

V. Consultation and Coordination

An onsite inspection was conducted on the access road and well pad on Date, 2001. In attendance were Mr. Robert T. McNaughton and Mr. Gordan Barker, Operation Engineers for Nadel and Gussman Permian, L.L.C., and Richard Hill, Environmental Protection Specialist, BLM Roswell Field Office. Coordination and consultation has occurred with the applicant's agent. The comments and suggestions expressed during the onsite consultation have been incorporated into this EA.

Coordination and consultation has occurred with Roswell Field Office staff specialist. The comments and suggestions expressed during the review of the proposed action and environmental assessment have been incorporated into this EA.

Reviewed by:

Irene Salas 6-4-01

Irene M. Salas, Realty Specialist **Date**

FINDING OF NO SIGNIFICANT IMPACT
AND DECISION RECORD
EA-NM-060-01-084

DECISION: It is my decision to authorize the Application For Permit To Drill Or Deepen (APD), for the Oasis "15" Federal #1 gas well, submitted by Nadel and Gussman Permian, L.L.C.. The provisions for the approval of the APD will include the attachment of the Roswell Field Office requirements as defined in the following exhibits; **Exhibit A** - Location Map, **Exhibit B** - Well Drilling Requirements, **Exhibit C** - Conditions of Approval, **Exhibit D** - Permanent Resource Road Requirements, and special mitigating measures developed in the environmental assessment.

In the event the well proves to be a dry hole, or when the well is abandoned, I recommend that reclamation requirements be attached to the well abandonment, including additional requirements imperative for the complete reclamation of the disturbed areas. These actions are subject to 43 CFR 3160 regulations for Onshore Oil and Gas operations on federal lease NM-94087.

Authority for these actions is the Mineral Leasing Act of February 25, 1920, as amended.

These actions will affect public lands described as:

New Mexico Principal Meridian

Section 15; NE¼SW¼, T. 10 S., R. 30 E.
1,330' FSL & 1,980' FWL

FINDING OF NO SIGNIFICANT IMPACT: Based on the analysis of potential environmental impacts contained in the attached environmental assessment, I have determined that impacts resulting from the proposed actions are not expected to be significant and an environmental impact statement is not required.

RATIONALE FOR DECISION: The proposed actions would not result in any undue or unnecessary environmental degradation. Portions of the subject lands and adjacent lands have been used for similar purposes and all present and potential uses and users have been considered.

COMPLIANCE AND MONITORING: The construction phase of the proposed actions and subsequent operational phases will be monitored as per regulations.

Larry D. Bray

Larry D. Bray, Assistant Field Manager,
Lands and Minerals

JUL 0 1 2001

Date