



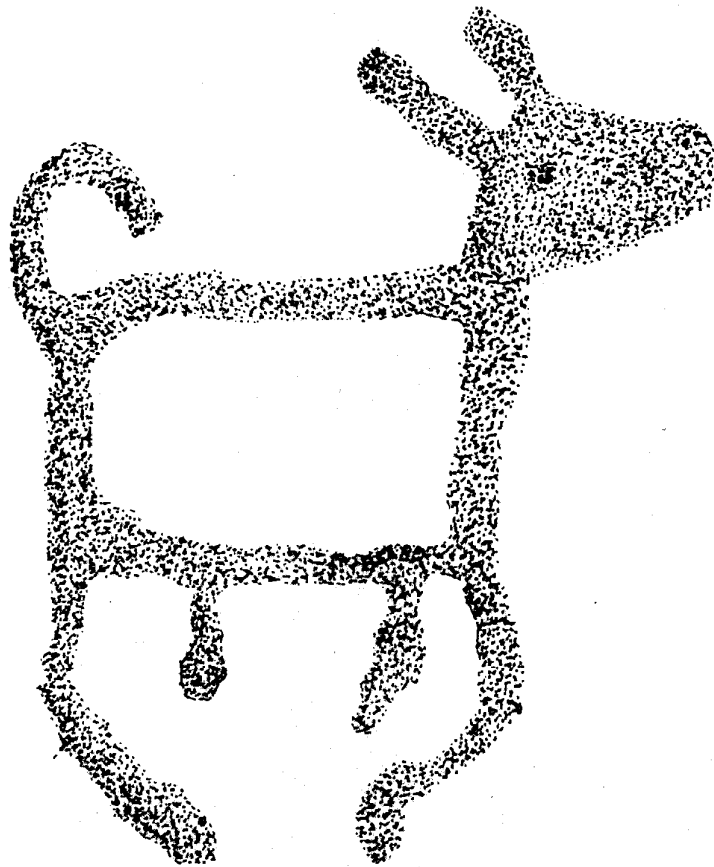
**United States Department of the Interior
Bureau of Land Management**

CARLSBAD RESOURCE AREA
Roswell District, New Mexico

October 1997



**Carlsbad Approved Resource Management Plan
Amendment and Record of Decision**



BLM-NM-PT-98-004-1610

The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield, a combination of uses that take into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

The cover artwork was provided by Mike and Barbara Bilbo from a tracing they made of a petroglyph in the Rio Bonito drainage, Lincoln County, New Mexico. Animals, such as the one on the cover, are depicted in the prehistoric and historic Indian rock art of southeastern New Mexico found in many locations in the BLM's Carlsbad and Roswell resource areas.



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
CARLSBAD RESOURCE AREA OFFICE
620 East Greene Street
Carlsbad, New Mexico 88220

IN REPLY REFER TO:
1614 (06016)

October 1997

Dear Reader:

This volume contains the Carlsbad Approved Resource Management Plan Amendment (RMPA) and Record of Decision (ROD). The planning process for the Carlsbad RMPA is concluded with the signing of the ROD and the publication of this document. The completion of the land use planning process also marks the beginning of plan implementation.

This ROD for the Carlsbad RMPA records the acceptance of the Proposed Carlsbad RMPA, with some modification, as the plan for managing oil and gas resources in the Carlsbad Resource Area for the next decade or longer. Modifications resulted from resolution of protests, conformance with conservation recommendations provided by the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act, and correction of typographical or editorial errors identified during review of the Proposed RMPA. Refer to Appendix 4 of the RMPA for details on these modifications.

Implementation of the Approved Plan Amendment will involve many people and much effort over the years. There will be many opportunities for public involvement in implementing the plan. Your continuing interest and involvement in the BLM's management of the public lands and resources in the Carlsbad Resource Area is appreciated and will be an important part of successful implementation of the RMPA. If you are interested in more specific information about plan implementation or would like to become more involved in the management of resources, please write to the address on the letterhead or call (505)887-6544.

Sincerely,

Edwin L. Roberson
District Manager

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USER'S GUIDE

The Approved Resource Management Plan Amendment (RMPA) for the Carlsbad Resource Area presents a comprehensive plan for the management of oil and gas resources in the Carlsbad Resource Area. The RMPA amends the 1988 Carlsbad Resource Management (RMP) plan by replacing management actions related to oil and gas management. The remainder of the Carlsbad RMP remains unchanged and continues to be implemented. The Record of Decision is the formal decision to accept the Approved RMPA as the management guidance for oil and gas resources in the Carlsbad Resource Area for the next 20 years.

There are three primary sections in this document. The Record of Decision is first, following this User's Guide. Next is the Approved Management Plan Amendment, which describes in detail the management actions that will be applied to oil and gas resources on the public lands. The third primary section contains five appendixes that supplement the management decisions.

The Draft Carlsbad Resource Management Plan Amendment/Environmental Impact Statement and Proposed Carlsbad Resource Management Plan Amendment/Final Environmental Impact Statement are important supplements to the Approved Plan. These documents should be retained for future reference.

ACRONYMS

The following acronyms and abbreviations are used in this document.

ACEC	Area of Critical Environmental Concern	NL	No Lease (not open to oil and gas leasing)
ALMRS	Automated Land and Minerals Record System	NM	New Mexico
APD	Application for Permit to Drill	NMOCD	New Mexico Oil Conservation Division
ASTM	American Society of Testing Materials	NMSO	New Mexico State Office
BLM	Bureau of Land Management	NOI	Notice of Intent
BOR	Bureau of Reclamation	NOL	Not open to leasing
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	NSO	No Surface Occupancy
CFR	Code of Federal Regulations	NTL	Notice to Lessee
COA	Condition of Approval	OHV	Off-Highway Vehicle
CPZ	<i>Cave</i> Protection Zone	RA	Resource Area
CRA	Carlsbad Resource Area	RCRA	Resource Conservation and <i>Recovery</i> Act
CSU	Controlled Surface Use	RDO	Roswell District Office
DPC	Desired Plant Community	RMP	Resource Management Plan
EA	Environmental Assessment	RMPA	Resource Management Plan Amendment
EIS	Environmental Impact Statement	RNA	Research Natural Area
EPA	(U.S.) Environmental Protection Agency	ROW	Right-of-Way
ESA	Endangered Species Act	RRA	Roswell Resource Area
FAA	Federal Aviation Administration	SHPO	State Historic Preservation Officer
FCRPA	Federal <i>Cave</i> Resources Protection Act	SMA	Surface Management Agency
FE IS	Final Environmental Impact Statement	STC	Standard Terms and Conditions
FHBMs	Flood Hazard Boundary Maps	SUOR	Surface Use and Occupancy Requirements
FLMPA	Federal Land Policy and Management Act	T&E	Threatened and Endangered
FIRMs	Flood Insurance Rate Maps	TL	Timing Limitations
GIS	Geographic Information System	U.S.C.	United States Code
HMA	Habitat Management Area	USDA	U.S. Department of Agriculture
MSL	Mean Sea Level	USDI	U.S. Department of the Interior
NAGPRA	Native American <i>Graves</i> Protection and Repatriation Act	VRM	Visual Resource Management
NEPA	National Environmental Policy Act	WHA	Wildlife Habitat Area
		WIPP	Waste Isolation Pilot Plant
		WSA	Wilderness Study Area

RECORD OF DECISION

This document records the decisions made by the Bureau of Land Management (BLM) for managing oil and gas resources on approximately 2.197 million surface acres of public land and approximately 1.898 million acres of federal mineral estate in the Carlsbad Resource Area. The Carlsbad Resource Area comprises Eddy and Lea counties, and the "boothel" of Chaves County, in southeastern New Mexico. These decisions amend (replace) those made in the 1988 Carlsbad Resource Management Plan (RMP) relating to the management of oil and gas resources. Decisions made in the 1988 RMP that do not affect oil and gas resources remain unchanged by this amendment.

DECISION

The decision is to select and approve the Proposed Resource Management Plan Amendment (RMPA) for the Carlsbad Resource Area. The RMPA makes decisions that will guide the management of oil and gas resources, including the leasing, exploration, development and production of those resources. The plan amendment was prepared according to regulations implementing the Federal Land Policy and Management Act (FLMPA) of 1976, which are located in Title 43 of the Code of Federal Regulations (CFR) in Part 1600. The Environmental Impact Statement (EIS) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and its implementing regulations in Title 40 of the CFR, Part 1500.

ALTERNATIVES CONSIDERED

Five alternative management plans were described and analyzed in the Draft Carlsbad RMPA/EIS. Each of the alternatives was a comprehensive plan for managing oil and gas resources to resolve the oil and gas operations planning issue, which was identified by the BLM and the public. The management proposed in each alternative presented a different mix of environmental protection and oil and gas development actions, so that management emphasis varied with each alternative.

Each of the five alternatives consisted of "Management Common to All Alternatives" and additional discrete management actions related to the management emphasis of each particular alternative.

Alternative A was the continuation of current management (no action). This alternative continued the existing management and uses of oil and gas resources at their present levels.

Alternative B was more oriented toward environmental protection than any other alternative, but still allowed for oil and gas resource use. This alternative was identified as the "environmentally preferable" alternative.

Alternative C generally emphasized the use of oil and gas resources while providing a minimal level of environmental protection. The emphasis of this alternative on resource use was greater than the level of resource use under current management.

Alternative D was oriented toward a level of oil and gas resource use commensurate with environmental protection. This alternative was a balance between Alternative B and Alternative C.

Alternative E was the BLM's preferred alternative. It allowed oil and gas resource use with greater

emphasis on protection of the natural environment than the other alternatives, except Alternative B. Alternative E comprised management prescriptions from the other four alternatives.

The approved Carlsbad Resource Management Plan Amendment is essentially the Proposed Plan described in the Final EIS, which was the Preferred Alternative described in the Draft EIS modified as a result of public and internal BLM comment.

ALTERNATIVES ELIMINATED FROM DETAILED STUDY

The elimination of oil and gas leasing was considered as a possible method of resolving the oil and gas operations planning issue and the planning questions related to that issue. After consideration, this management option was eliminated from detailed study. It is described in the Draft Carlsbad RMPA/EIS.

The Resource Users Coalition (including the New Mexico Oil and Gas Association, the Independent Petroleum Association of New Mexico, and the Southeastern New Mexico Grazing Association) submitted Alternative F as a comment on the Draft RMPA/EIS. Alternative F was carefully reviewed by RMP team members, especially with regard to its conformance with laws, regulations and manuals that govern the management of the public lands. It was determined as a result of that review that Alternative F is not a viable alternative in its entirety because it proposes management that ignores laws and regulations that the BLM must follow in the management of the public lands. Nevertheless, many changes were made while developing the Proposed RMPA that resulted from Alternative F.

DECISION RATIONALE

The decision to select the Proposed Plan Amendment is based on:

- Management actions needed to resolve the planning issue and address planning questions and planning criteria identified through the planning process;
- The environmental analysis of each alternative considered in detail, which is contained in Chapter 4 of the Draft RMPA/EIS and Chapter 4 of the Proposed RMPAJFEIS;
- Input from the public, BLM specialists, local and state governments, and other federal agencies; and,
- The combination of management actions considered by the BLM to best meet the legal mandate of the FLMPA for management of the public lands according to the principles of multiple use and sustained yield.

MITIGATION AND MONITORING

All decisions made in this plan amendment will require adequate consideration of all affected resources and uses prior to implementation. All reasonable measures will be taken to ensure that adverse impacts are mitigated in a manner consistent with the measures identified in the Proposed RMPA. These measures, and any plan decisions that serve as mitigation, may be supplemented during environmental analyses for site-specific actions.

The Approved Carlsbad RMPA provides the framework and guidance for making specific.

management decisions related to oil and gas resources In the Carlsbad Resource Area actions initiated by the BLM or the public will be monitored to determine If the management objectives of the

RMPA are being met. The effectiveness of RMPA determinations will be formally evaluated every five years, along with existing decisions in the 1988 Carlsbad RMP, to determine the need for revision of the RMP. The Carlsbad RMP, which includes this plan amendment, may be amended as needed at any time with full public involvement.

PUBLIC INVOLVEMENT

Public opinion and input have been sought throughout the planning and decision-making process. Public participation efforts are described in detail in Chapter 5 of the Proposed RMPA/FEIS. Highlights of the public involvement process include:

- Preparation of a public participation plan;
- *Federal Register* notices of intent and requests for information;
- Public scoping meetings and open houses;
- Formal and informal meetings with interested individuals, groups and businesses;
- Formation of citizen work groups to assist in developing alternatives;
- A 120-day comment period on the Draft RMPA/EIS;
- Formal public hearings on the Draft RMPA/EIS;
- Briefings for interested groups and individuals;
- Working sessions with industry groups to resolve specific concerns; and,
- A 30-day review and protest period on the Proposed RMPA/FEIS,

PROTEST RESOLUTION

Forty-two protests of the Carlsbad RMPA were filed during the 3D-day protest period, which ran from March 7, through April 7, 1997. Of these protests, 28 were dismissed because they did not meet the requirements for filing a protest, including the identification of an issue or issues being protested, or standing to file a protest. Of the many issues raised in the remaining protests, 31 were referred to the Director of the BLM for resolution. The general topics of those issues are:

- adequacy of maps in the RMPA
- treatment of wilderness study areas
- cultural resource management, including cost recovery
- cave and karst management
- adequacy of Alternative F
- prairie chicken management
- failure to follow state laws
- sand dune lizard management
- participation in the planning process
- conformance with county land use plans or ordinances

In addition, 13 concerns raised in the protest letters were referred to the New Mexico State Director for resolution. The general topics of those concerns are:

- special status species protection
- prairie chicken management
- Maroon Cliffs Archeological District
- sand dune lizard management
- visual resource management
- slopes and fragile soils
- takings implications

The issues and concerns as well as the agency response are included in the Approved RMPA.

BIOLOGICAL ASSESSMENT AND OPINION

Throughout the planning process, the BLM has consulted informally and formally with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act (ESA). The BLM prepared a biological assessment of the probable effects of the RMPA on special status species.

The USFWS provided their Biological Opinion (dated April 30, 1997, Cons. #2-22-96-F-128) on the assessment. The opinion of the USFWS is that management directed by the Carlsbad RMP of 1988 and the Carlsbad RMPA will not jeopardize the continued existence of the Pecos bluntnose shiner or adversely modify its critical habitat. The service provided six conservation recommendations. The formal Section 7 process on the RMPA has been completed with the BLM's adoption of the USFWS's conservation recommendations. Adoption of the recommendations necessitated some minor changes in the Proposed RMPA. Those changes have been made in the Approved RMPA. The BLM will continue to consult and coordinate with the USFWS, according to the requirements of the ESA.


CONSISTENCY

There are no known or identified inconsistencies with the plans, programs, and policies of other federal agencies and of state and local governments. The 60-day Governor's consistency review period ended March 25, 1997; no inconsistencies were identified.

CONCLUSION

This Record of Decision constitutes the Bureau of Land Management's final action on approving the Carlsbad Resource Management Plan Amendment. Any person adversely affected by a decision of the BLM in implementing any portion of this RMPA may appeal that action to the Interior Board of Land Appeals pursuant to 43 CFR Part 4, at the time the action is proposed for implementation. Copies of the RMPA are available upon request. Contact the Carlsbad Area Manager, Bureau of Land Management, 620 E. Greene St. Carlsbad, New Mexico 88220, or call 505-887-6544.

APPROVAL



M. J. Chávez
State Director, New Mexico
Bureau of Land Management

10 October 97

Date

RESOURCE MANAGEMENT PLAN

RESOURCE MANAGEMENT PLAN

INTRODUCTION

This Resource Management Plan Amendment is a comprehensive resource management plan (RMP) that establishes the general land management and use determinations for guiding and controlling the future management of oil and resources in the Carlsbad Resource Area. This plan was prepared in accordance with the requirements of the Federal Land Policy and Management Act (FLMPA) of 1976 and the National Environmental Policy Act (NEPA) of 1969.

This Resource Management Plan Amendment addresses the management of oil and gas resources and use on about 2,197,000 acres in the Carlsbad Resource Area (the "planning area") where both the surface and subsurface estates are in federal ownership and are administered by the BLM (see Table 1). This Plan Amendment also presents management for an additional 1.9 million acres of federal mineral estate where the surface is managed by other surface management agencies of the federal or New Mexico State governments, or is in private ownership. In these cases, the leasing of fluid minerals (i.e., oil and gas) is administered by the BLM. These public lands, including the mineral estate, are administered by the Bureau of Land Management through its Carlsbad Resource Area Office. The

Carlsbad Resource Area encompasses the "bootheel" of Chaves County and all of Eddy and Lea counties in southeastern New Mexico (see Map 1).

All land and resource uses and activities in the planning area related to oil and gas resources must conform with the decisions and terms and conditions of use described in this plan amendment. These decisions and terms and conditions of use amend (replace) the management prescriptions for oil and gas in the Carlsbad Resource Management Plan (1988). All other management prescribed in the Carlsbad RMP will remain unchanged. Detailed decisions for the implementation of specific actions will be made through activity planning and environmental review that will be completed prior to the implementation of the action. Likewise, the authorization of specific uses will be predicated on conformance with planning decisions and the completion of environmental review.

Descriptions of the affected environment and the environmental consequences of managing oil and gas resources in the planning area were previously addressed in the Draft Carlsbad RMPA/EIS and Proposed Carlsbad RMPA/FEIS, and are not discussed in this document.

TABLE 1
CARLSBAD RESOURCE AREA LAND OWNERSHIP ACREAGES
(ESTIMATED ACRES)

Area	Total Acres (All Owners)	BLM-Administered Federal Surface and Subsurface ^{1/4}	Other Surface Owners, Federal Minerals (Oil and Gas) ^{2/4}	Other Surface Owners, Federal Minerals (All Minerals) ^{2/4}
Carlsbad Resource Area	6,381,000	2,197,000	1,898,000	1,933,000

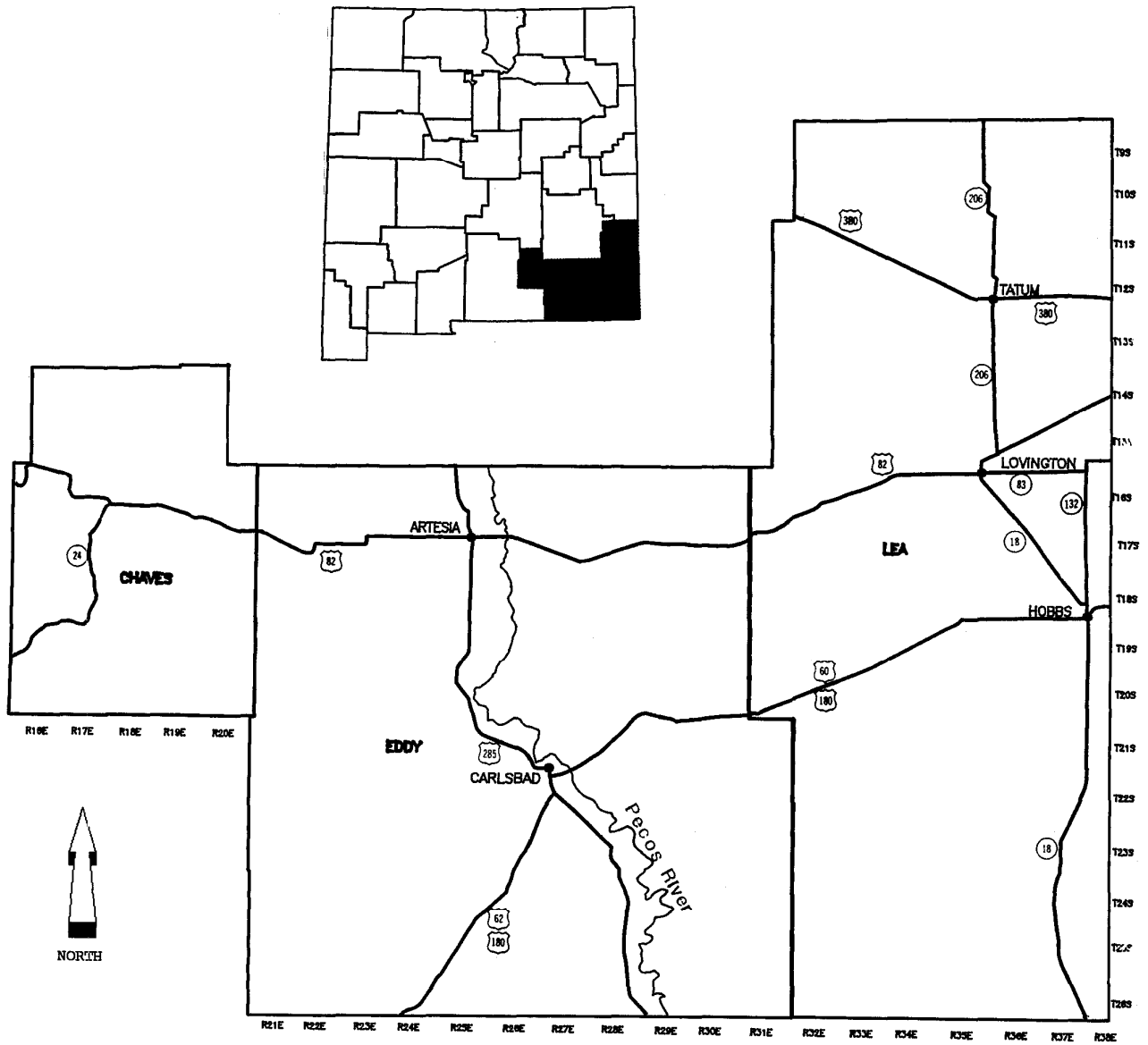
^{1/} The federal surface/subsurface category assumes all subsurface acres are oil and gas acres. The acres represented are those where both the surface and mineral estate are owned by the Federal government, and managed by the BLM.

^{2/} Both categories of federal minerals describe split estate where the surface is not administered by the BLM. the acreages represented are mineral estate acres, only.

^{3/} All acreage numbers are rounded to the nearest thousand.

^{4/} To determine total federal oil and gas acres add acreages in columns 2 and 3.

Source: BLM ALMRS and GIS data, 1994.



SCALE
 1/2" = 9.5 Miles
 BIM-Roswell District, 1994

MAP 1
 GENERAL LOCATION MAP
 Carlsbad Resource Area

PLANNING AND MANAGEMENT
DECISIONS

Fluid Minerals Management

Goal: Provide for the leasing, exploration and development of oil and gas resources within the Carlsbad Resource Area.

The BLM administers approximately 4,095,000 acres of federal oil and gas mineral estate in the Carlsbad Resource Area. In this plan:

Approximately 3,907,700 acres (95 percent of the oil and gas mineral estate) will be open to leasing and development under the BLM's standard terms and conditions, the Surface Use and Occupancy Requirements (Appendix 1), the Roswell District Conditions of Approval (Appendix 2), and the Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas (Appendix 3). The discrete components of these requirements will be applied on a case-by-case basis when needed to mitigate impacts or guide use. The Surface Use and Occupancy Requirements will be applied to new leases or as conditions of approval for proposed activities on existing leases, following NEPA analysis. The Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas will be applied as conditions of approval. The

total acreage includes controlled surface use restrictions and areas affected by the Surface Use and Occupancy Requirements. See Tables 2 and 3, and Map 2.

As a result of the requirements described above, some leasing stipulations formerly available for use on new leases have been rescinded or replaced by revised stipulations. Refer to Table 2 for a list of the remaining leasing stipulations. Leasing stipulations on leases already issued will not be affected.

Approximately 77,700 acres (2 percent) will be open to leasing, with a No Surface Occupancy stipulation attached to new leases. Refer to Tables 2 and 5, and Map 2. This does not include acreage that may be affected by application of the Surface Use and Occupancy Requirements.

Approximately 110,700 acres (3 percent) will be closed to leasing to protect special resources or to support other public uses. See Tables 2 and 6, and Map 2. In these areas, existing leases will continue to be developed on a case-by-case basis. However, once leases terminate, they will not be re-offered for leasing.

**TABLE 2
SUMMARY OF OIL AND GAS LEASING RESTRICTIONS
BY HYDROCARBON POTENTIAL
(ESTIMATED SURFACE ACRES^{1/})
CARLSBAD RESOURCE AREA**

Hydrocarbon Potential	Closed To Leasing	Open To Leasing With NSO^{2/}	Open To Leasing With Controlled Surface Use^{2/}	Open To Leasing With Timing Restrictions^{2/}	Open To Leasing^{3/}
H	110,656	74,100	30,320	N/A	3,354,436
M		3,600	25,600		169,800
L					327,000

^{1/} Includes BLM-administered surface and surface administered by other surface management agencies or owners.

^{2/} Does not include acreage that may be affected by Surface Use and Occupancy Requirements (Appendix 3).




^{3/} Open to leasing under Standard Terms and Conditions, Surface Use and Occupancy Requirements, Conditions of Approval, and Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas.

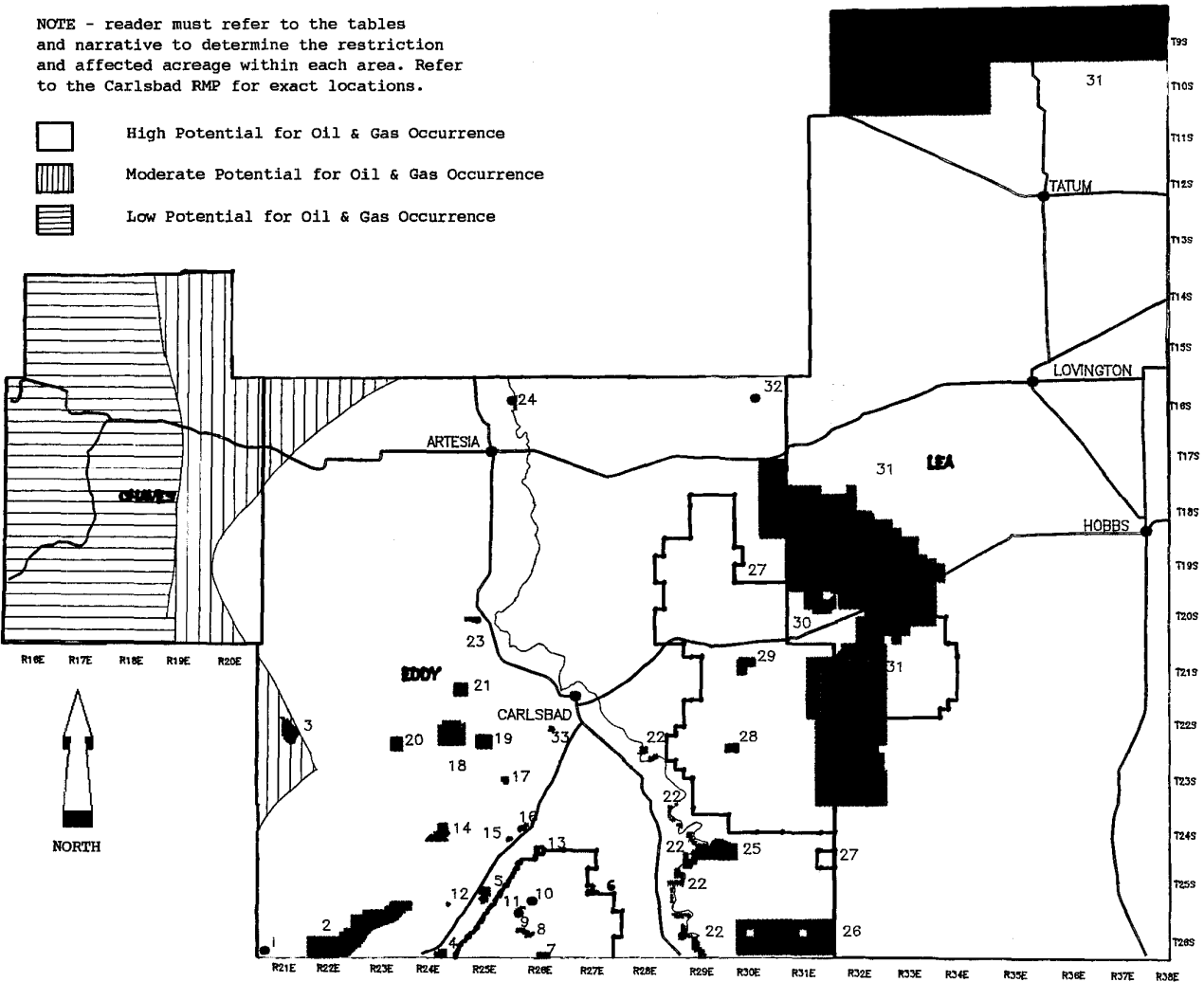
Source: BLM files, 1994.

Areas Stipulated

1 - McKittrick/Devil's Den WSAs	X	18 - McKittrick Hill Caves	X
2 - Guadalupe Scenic Area/Lonesome Ridge ACEC, WSA	X	19 - Honest Injun Cave	Not Applicable
3 - East Guadalupe HMA/South Texas Hill RNA	X	20 - Bogle Spring	Not Applicable
4 - Yeso Hills	X	21 - Little Walt Canyon	X
5 - Chosa Draw	X	22 - Pecos River Corridor	Not Applicable
6 - Southern Gypsum Soil Area	Not Applicable	23 - Seven Rivers Hills HMA	X
7 - Owl Spring	Not Applicable	24 - Blunt Nose Shiner Critical Habitat	X
8 - CP Hill Buckwheat Area	X	25 - Pecos River Canyons Complex ACEC	X
9 - Ben Slaughter Draw	Not Applicable	26 - Phantom Banks Heronries/Pope's Well	X
10 - Preservation Spring	Not Applicable	27 - Potash Area	X
11 - Cottonwood Spring	Not Applicable	28 - Tamarisk Flat Heronries	Not Applicable
12 - Black River Buckwheat Area	X	29 - Maroon Cliffs Arch. District	X
13 - Blue Spring	Not Applicable	30 - Laguna Plata Arch. District	X
14 - Mudgett's WSA/Dark Canyon EIS Area	X	31 - Prairie Chicken Habitat	Not Applicable
15 - KFF Caverns	Not Applicable	32 - POCO Site	X
16 - Fence Canyon Caves	Not Applicable	33 - Lost Cave	Not Applicable
17 - Yellow Jacket/Lair Caves	Not Applicable		

NOTE - reader must refer to the tables and narrative to determine the restriction and affected acreage within each area. Refer to the Carlsbad RMP for exact locations.

-  High Potential for Oil & Gas Occurrence
-  Moderate Potential for Oil & Gas Occurrence
-  Low Potential for Oil & Gas Occurrence



SCALE
1/2" = 9.5 Miles

MAP 2
OIL and GAS LEASING
STIPULATION AREAS
Carlsbad Resource Area

TABLE 3
AREAS OPEN TO LEASING WITH CONTROLLED SURFACE USE RESTRICTIONS
CARLSBAD RESOURCE AREA

Area	Hydrocarbon Potential Estimated Surface Acres		
	High	Moderate	Low
BLM MANAGEMENT:			
City of Carlsbad Water Well Field	29,520		
East Guadalupe Escarpment Habitat Management Area		25,600	
Subtotal	29,520	25,600	
OTHER AGENCY MANAGEMENT:			
Air Base City, Hobbs Industrial Air Park	160		
Artesia Airport	200		
Carlsbad Airport	160		
Jal County Airport	280		
Lincoln National Forest	N/A ^{1/}		
Subtotal	800		
Total	30,320	25,600	

^{1/} Amount of affected acreage not known.

Source: BLM files, 1994

**TABLE 4
OIL AND GAS LEASING STIPULATIONS and LEASE NOTICES
CARLSBAD RESOURCE AREA**

Current Stipulation	Type of Restriction	Feature	Remarks
R 3100-13		Potash	Retain
Roswell 1	NSO	Pope's Well National Register Site	Retain
Roswell 7	NSO	Maroon Cliffs Archeological District	Retain, expand
Roswell 9	NSO	Laguna Plata Archeological District	Retain
Roswell 16	NSO	Threatened Plant Species (Gypsum wild-buckwheat)	Retain
Roswell 19	NSO	Cave Resources	Replace with SUOR, except for Chosa Draw ACEC
Roswell 21	NSO	South Texas Hill Canyon	Retain
Roswell 22	NSO	Natural and Scenic Values	Retain except for Dark Canyon
Roswell 32	NSO	Yeso Hills	Retain
Roswell 33	NSO	Critical Habitat for T&E Species (Bluntnose Shiner)	Retain
Roswell 37	NSO	Archeological Values (Poco Site)	Retain
Roswell 39	NSO	Pecos River/Canyon Complex ACEC	Retain
Roswell 43	NSO	Open Potash Mine Workings	Retain
Roswell 46	Lease Notice	Cave/Karst Occurrence Area	Retain
Roswell 48	CSU	Guadalupe Escarpment Habitat Management Area	Retain
Roswell 51	Lease Notice	Protection of the Sand Dune Lizard	Retain
	NSO	Maintenance of state well-spacing requirements	(new)
	SUOR	Surface Use and Occupancy Requirements will be applied as leasing stipulations.	(new)

Key to Abbreviations: NSO No Surface Occupancy; CSU Controlled Surface Use; SUOR Surface Use and Occupancy Requirements; ACEC Area of Critical Environmental Concern; CRA Carlsbad Resource Area

Source: BLM files, 1996

**TABLE 5
AREAS OPEN TO LEASING WITH NO SURFACE OCCUPANCY
CARLSBAD RESOURCE AREA**

Areas	Hydrocarbon Potential Estimated Surface Acres		
	High	Moderate	Low
BLM MANAGEMENT:			
Black River Buckwheat Population Area	720		
Bluntnose Shiner HMA	200		
CP Hill Buckwheat Population Area	360		
Devil's Den ^{1/}	320		
Guadalupe Escarpment Scenic Area (Zone 1)	11,700		
Laguna Plata Archeological District	3,360		
Maroon Cliffs Archeological District	5,820		
McKittrick Canyon ^{1/}	200		
Pecos River Canyon Complex ACEC/RNA	4,505		
Poco Site	265		
Pope's Well	80		
Seven Rivers Hills HMA	540		
South Texas Hill RNA		3,600	
Yeso Hills RNA	557		
Subtotal	28,300	3,600	
OTHER AGENCY MANAGEMENT:			
Avalon Reservoir	14,800		
Brantley Lake State Park	10,000		
Brantley Reservoir	21,000		
Lincoln National Forest	N/A ^{2/}		
Subtotal	45,800		
Total	74,100	3,600	

Note: Acreage affected by the application of the Surface Use and Occupancy Requirements is not displayed on this table, to avoid double-counting. Because of the nature of the Requirements and their use, areas listed above may also include areas to which the Requirements would be applied. Refer to Table A1-1 in Appendix 1 for estimates of additional acreage that could be affected by the Requirements.

^{1/} These are current wilderness study areas. If not designated wilderness, these areas will become available for leasing with no surface occupancy.

^{2/} Amount of affected acreage not known.

Source: BLM files, 1997.

**TABLE 6
AREAS CLOSED TO FUTURE LEASING
CARLSBAD RESOURCE AREA**

Areas	Hydrocarbon Potential		
	Estimated Surface Acres		
	High	Moderate	Low
BLM MANAGEMENT			
Cave Protection Zones (Dark Canyon)	10,120		
Chosa Draw ACEC	2,820		
Devils Den WSA ^{1/}	320		
Little Walt Canyon Quarry Site	40		
Lonesome Ridge WSA ^{2/}	3,505		
McKittrick Canyon WSA ^{1/}	200		
McKittrick Hill Cave	5,240		
Maroon Cliffs Archeological District	12,019		
Mudgetts WSA ^{3/}	1,060		
Subtotal	35,324		
OTHER AGENCY MANAGEMENT:			
Carlsbad Caverns National Park/Wilderness	46,530		
Gnome Site	680		
Lincoln National Forest	26,282		
Living Desert State Park	1,120		
State Militia Site	720		
Subtotal	75,332		
Total	110,656		

^{1/} If not designated wilderness, these areas would become available for leasing with no surface occupancy. See Table 5.

^{2/} The 2,990-acre Lonesome Ridge ACEC is within the Lonesome Ridge WSA. The ACEC would remain closed to leasing even if the WSA is not designated as wilderness.

^{3/} Acreage shown is that part of the WSA outside the cave protection zones, which would become available for leasing if the WSA is not designated as wilderness.

Source: BLM files, 1997.

The Authorized Officer may consider expressions of interest for the leasing of BLM administered public lands when the sole purpose of leasing is to maintain state well-spacing requirements. This could occur in areas that are closed to leasing (except for wilderness study areas) or open to oil and gas leasing with no surface occupancy, including areas affected by the Surface Use and Occupancy Requirements (Appendix 1). This leasing opportunity could apply to an entire lease or to a portion of a lease parcel. In this situation, there can be no intention on the part of the nominator to occupy the surface of the lease or portion of the lease. For a lease to be issued, there can be no concerns about impacts to subsurface resources or values resulting from drilling on any unrestricted parts of the lease or on adjacent leases, and surface occupancy or use absolutely will not be authorized. A lease could be issued for a standard term with a no surface occupancy leasing stipulation (See Figure 1).

FIGURE 1

NO SURFACE OCCUPANCY STIPULATION

Maintenance of state well-spacing requirements.

No surface occupancy or use is allowed on the lands described below:

(legal description)

For the purpose of: The lease or portion of a lease for the area described above is issued for the sole purpose of assisting in the orderly development of the federal mineral estate. This lease will be used to maintain state well-spacing requirements on the lands described above. This lease absolutely does not grant surface occupancy or use, and that requirement cannot be waived unless changes are made in a land use plan or plan amendment.

Roswell 52

(Date)

The BLM will continue to require oil and gas lessees to conduct operations in a manner that will minimize adverse impacts to resources, land uses, and users. To that end, the BLM will continue to apply reasonable mitigation measures. These will typically include, at a minimum, relocating proposed operations by no more than 200 meters or prohibiting new surface disturbance for a period of no more than 60 days. Mitigations of impacts involving moves greater than 200 meters or delays greater than 60 days could result from project-specific NEPA analysis. (Also, refer to the introduction to Appendix 1.)

Requirements that have been issued in Orders or Notices to Lessees (NTL) concerning environmental and other factors associated with the drilling of oil and gas wells will continue to be enforced, as will future orders and NTLs.

In addition to any stipulations appended to a lease, the development of new and existing leases will be further guided by the application of the Roswell District Standard Conditions of Approval (Appendix 2), which will be applied on a case-by-case basis.

Open-top tanks, reserve pits, disposal pits, or other open pits will be required to be equipped to deter entry by birds, bats or other wildlife, and livestock.

The BLM will encourage the use of practices such as off-lease measurement, unit agreements, field development plans, communitization agreements, consolidated batteries, and other innovative approaches, to reduce the extent of surface disturbance and to mitigate other forms of impacts. These practices must conform with Onshore Oil and Gas Orders 4 and 5, and state requirements.

The construction, maintenance, rehabilitation, abandonment, and closure of all roads subject to BLM jurisdiction will be conducted according to the "BLM-NMSO Road Policy, Standards and Procedures." Specific practices for implementing this policy are described in Appendix 2. The BLM may monitor use of roads and notify joint-cost-sharing companies when maintenance is needed.

Areas designated as Wilderness Study Areas (WSAs) are closed to leasing as part of the Wilderness Interim Management Policy. Existing leases in WSAs would not be reissued once they expire. The four WSAs in the Carlsbad Resource Area are not recommended for wilderness designation. If Congress accepts those recommendations and the WSA status is removed, the lands currently in the WSAs would be managed for multiple use under management prescribed in the Carlsbad RMP (1988) and the Carlsbad RMP Amendment. If not designated wilderness, future management of the WSAs would be as follows:

- Mudgetts WSA (2,941 acres): The 1,881 acres within in the cave protection zone established by the lechuguilla Cave Protection Act of 1993 and the Dark Canyon Environmental Impact Statement would be managed according to the requirements of the Act and the EIS (see Map 3). The remaining 1,060 acres would be open to leasing subject to the Surface Use and Occupancy Requirements, the Practices for Oil and Gas Drilling Operations in Cave and Karst Areas, and the Roswell District Conditions of Approval.
- Lonesome Ridge WSA (3,505 acres): The 2,990 acres within the lonesome Ridge ACEC would be managed according to the prescriptions described in the 1988 Carlsbad RMP, as amended by this plan. The remaining 515 acres would be managed according to the prescriptions for the Guadalupe Escarpment Scenic Area Zone 1 described in the 1988 Carlsbad RMP, as amended by this plan.
- Devil's Den WSA (320 acres): The entire area would be open for future leasing with no surface occupancy. Extremely steep slopes in the entire area preclude surface occupancy.
- McKittrick Canyon WSA (200 acres): The entire area would be open for future leasing with no surface occupancy. Extremely steep slopes in the entire area preclude surface occupancy.

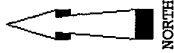
Cultural sites determined to be eligible and potentially eligible to the National Register of Historic Places will be protected from damage by avoidance. If avoidance cannot be accomplished, potentially eligible sites will be tested to determine their eligibility. Mitigation, such as data recovery, will be required for eligible sites. Coordination and consultation about the treatment of sites will continue between the BLM and SHPO, pursuant to Section 106 of the National Historic Preservation Act.

As a standard practice, ephemeral and perennial drainages and wetland/riparian areas will be avoided as locations for oil and gas related facilities, including drilling locations, production facilities, roads, and pipelines. (Refer to Appendix 1, Streams, River\$ and Floodplains.) Whenever possible, facilities will be confined to existing alignments or locations, minimizing width requirements and maximizing multiple occupancy.

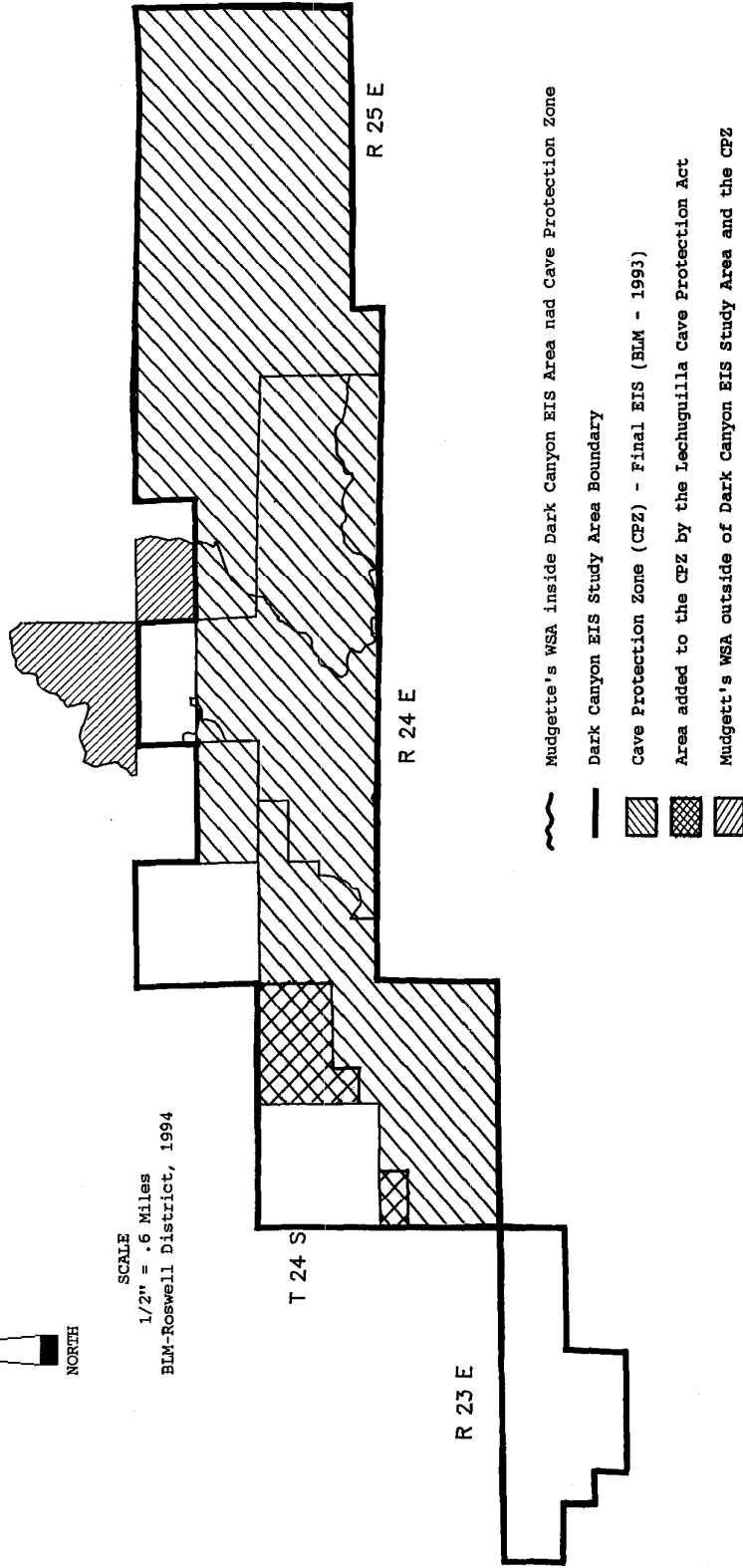
Produced water disposal pits on public lands will not be allowed west of the Pecos River. Additionally, these pits will not be allowed within up to 200 meters of 100-year floodplains, drainages, playas, water wells, or springs throughout the resource area. In all other areas of the Carlsbad Resource Area, disposal of produced water in lined pits may be permitted on public lands. Produced water disposal will be managed in accordance with Onshore Oil and Gas Order NO.7.

Revegetation of disturbed areas will be required. Reclamation techniques, such as deeper rips, different seed mixtures, mulching, and the application of fertilizer, may be used to enhance the reclamation of pits, roads and pads to provide for maximum ground and surface water protection. The ripping or removal of caliche from roads and pads could be required to enhance reclamation efforts. Waiver of this requirement will be considered if diligent attempts to revegetate a site have failed and the Authorized Officer determines that further attempts would be futile.

The BLM will continue to process Notices of Intent (NOI) to conduct geophysical exploration on public lands, on a case-by-case basis.



SCALE
1/2" = .6 Miles
BLM-Roswell District, 1994



MAP 3
DARK CANYON AREA
Carlsbad Resource Area

Geophysical exploration may be an appropriate, temporary surface use in areas that are closed to oil and gas leasing or that have restricted surface use, such as no surface occupancy leasing stipulations. The processing of geophysical NOIs will include NEPA compliance. The terms and conditions for NOIs and the conditions of approval for geophysical exploration are listed in Appendix 2. The Surface Use and Occupancy Requirements (Appendix 1) and off-highway vehicle use designations also will be applied to geophysical exploration, when necessary.

The burial of pipelines associated with oil and gas exploration, development, production and transportation is preferred. Pipelines greater than four inches in nominal diameter, all injection lines, and gas lines with a pressure greater than 125 psi must be buried and preferably be constructed of steel. If the use of plastic pipe is approved, the pipe must meet American Petroleum Institute specifications. A waiver of the requirement to bury pipelines will be considered in the following situations:

The temporary (one year or less) surface installation of plastic pipelines, after considering the length of the pipeline, its proposed location, the potential hazards present (e.g., likelihood of damage by fire or OHV use), the characteristics of the pipe regarding deterioration (including by sunlight), the ASTM or similar specifications for the pipe, the intended use of the pipeline, and other appropriate factors.

Where rock outcrops at the surface make the burial of a pipeline impractical, such as when unreasonable and unreclaimable surface disturbance would result. Where the pipeline is exposed, painting may be required in accordance with the painting policy for visual resource management areas (see Appendix 1) and NTL 87-1, New Mexico. Waiver of the requirement for painting will be considered when short distances are involved, when a pipeline is not readily visible because of screening, or in areas that are not visually sensitive.

Where the surface ownership along the pipeline route is mixed, and the majority of surface ownership is not public. In those cases, the installation of pipelines on public land will conform to the practice to be employed on the remainder of the pipeline, unless special resource management concerns dictate strict adherence to this policy.

In the Carlsbad RMP, a number of areas were designated as special management areas. A variety of management practices were prescribed, including oil and gas stipulations. The use of the Surface Use and Occupancy Requirements, and reliance on off-road vehicle designations and visual resource management prescriptions established in the Carlsbad RMP make the continued use of oil and gas leasing stipulations unnecessary on the following areas:

- Blue Spring Bogle
- Flat Spring
- Little McKittrick Draw HMA
- Owl Spring
- Preservation Spring Southern
- Gypsum Soil Area
- Lesser prairie chicken habitat areas
- Heron rookeries
- Ben Slaughter Draw
- Cottonwood Spring
- Fence Canyon Caves
- Honest Injun Cave KFF
- Caverns
- Lost Cave
- Pecos River Corridor
- Yellow Jacket/Lair Caves

Oil and gas leasing stipulations prescribed for these areas in the Carlsbad RMP will no longer be used. Refer to Table 2. Other management prescribed in the Carlsbad RMP for these areas will not change, and these areas still will be managed as special management areas. If needed, standardized lease notices will be used to provide information about OHV and VRM requirements to purchasers of leases.

A portion of the Maroon Cliffs area was determined in the Carlsbad RMP to be eligible for nomination to the National Register of Historic Places as an archeological district. The size of the proposed district is increased from

the 11,783 acres originally identified in the Carlsbad RMP to 17,720 acres, to include additional important areas of cultural resources. Management of oil and gas leasing will be no surface occupancy on 6,840 acres and no leasing on 10,880 acres. Other management prescriptions identified in the Carlsbad RMP will remain unchanged and will apply to the entire acreage of the proposed archeological district. Refer to Tables 5 and 5, and Map 4.

The portions of the 497,000-acre potash area open to future leasing for oil and gas will continue to be leased pursuant to the Secretary's 1986 Potash Order, or subsequent revisions of the order. The Potash Stipulation, which reflects the BLM's administration of the potash area, will be applied to new leases" Generally, the Potash Stipulation allows drilling for oil and gas if the drilling does not interfere with potash mining, does not create undue waste of potash, and does not create a hazard. In abandoning wells drilled under the stipulation, infiltration of oil, gas or water into potash deposits, mines or workings must be prevented.

lease notices will be used to alert lessees to potential special requirements on exploration" drilling or production. lease notices covering protection of potential cave or karst areas" protection of threatened or endangered or sensitive plant or animal species, and the use of the Alkali lake and Hackberry lake OHV areas will remain in effect. Additional lease notices will be developed as needed.

The Record of Decision for the Dark Canyon Environmental Impact Statement (1994) will guide the management of oil and gas resources in a portion of Dark Canyon just north of Carlsbad Caverns National Park (see Map 3). The actions mandated by the record of decision are summarized below:

- close the entire EIS Study Area (about 8,320 surface acres) to future oil and gas leasing;
- existing leases in the EIS Study Area. subject to a NSO stipulation will remain subject to the restriction;
- producing or producible wells in the EIS

Study Area may continue to produce and be maintained for that purpose;

- existing leases in the EIS Study Area outside the cave protection zone (CPZ) (about 3,280 surface acres) that are available for surface occupancy and development will be subject to mitigation measures prescribed in the EIS;
- existing leases or portions of existing leases inside the CPZ (about 9,760 surface acres) will not be available for surface occupancy, but may be developed using directional drilling from outside the CPZ.

The reader should refer to the Final Dark Canyon Environmental Impact Statement and Record of Decision for specific information on the management of the Dark Canyon area.

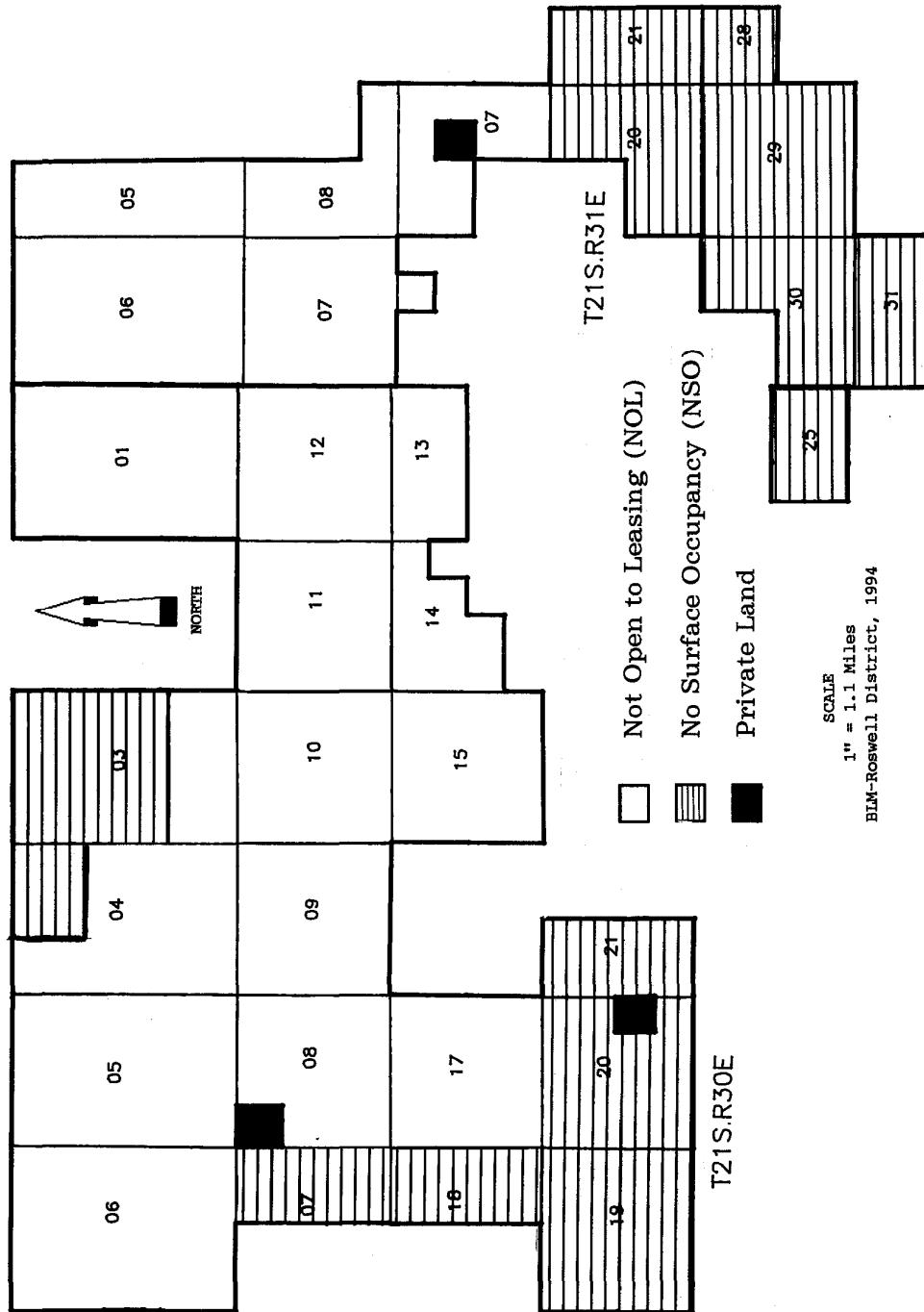
The lechuguilla Cave Protection Act of 1993, establishes a cave protection zone (see Map 3), which conforms to the cave protection zone established in the Dark Canyon Environmental Impact Statement, except that an additional 360 acres are included, making this CPZ about 10,120 (surface) acres in size. Among the requirements of the Act is the withdrawal of the lands in the CPZ from mineral and geothermal leasing.

The Dark Canyon Scenic Area and ACEC (3,220 acres), and the Manhole Caves (100 acres), and Mudgetts Caves (50 acres) special management areas will be managed according to the Record of Decision for the Dark Canyon Environmental Impact Statement, which is summarized above.

Unless otherwise authorized, surface use or occupancy will be excluded in the 25,600-acre East Guadalupe Escarpment Habitat Management Area (see Map 2) as follows:

1. Within 400 meters of:

- Existing and proposed wildlife watering sites;
- Riparian areas, wetlands, springs, water wells, and ephemeral, intermittent, or perennial streams;



MAP 4
MAROON CLIFFS
ARCHAEOLOGICAL DISTRICT
 Carlsbad Resource Area

- Raptor nests which have been active for the past two years.

2. Slopes over 30 percent, or over 20 percent on extremely erodible or slumping soils.

3. The one hundred-year flood plain as identified through the use of: Federal Emergency Management Agency flood insurance rate maps or flood hazard boundary maps; published maps or information available from the U.S. Army Corps of Engineers, USDA Natural Resource Conservation Service, U.S. Geological Survey, or other agencies; analysis of flood data; field inspections; or, other methods.

These management prescriptions will supersede the Surface Use and Occupancy Requirements (Appendix 1) that normally would be applied to the Habitat Management Area.

A controlled surface use restriction will be applied when needed as a condition of approval for APDs for oil or gas wells proposed in the City of Carlsbad's municipal water well field, or within 3 miles of the field (Map 5). If an APD is filed in that area, the BLM will consult with the City of Carlsbad to determine the appropriate action to take. Prohibitions on blasting during well-site construction and special casing requirements will be the restrictions most often applied. This controlled surface use restriction will apply to an area of about 26,800 acres of public surface and minerals, and about 2,720 acres of federal mineral estate under other surface ownerships.

Other Surface Management Agencies

In some cases, federal minerals in the Carlsbad Resource Area underlie lands managed by other agencies (known as "other surface management agencies"), see Map 6. The leasing requirements of other surface management agencies have been included for purposes of disclosure and to provide a complete view of oil and gas leasing in the resource area. The other surface management agencies in the Carlsbad Resource Area were asked to provide their oil and gas leasing recommendations and leasing stipulations; they are included here without modification. The leasing requirements are described below. The acreages listed refer to federal mineral estate. Future changes in

leasing requirements provided by other surface management agencies will be accommodated in this plan by conducting RMP maintenance actions.

Federal Aviation Administration

- Consult with FAA prior to approving occupancy at Air Base City (Hobbs Industrial Air Park) (160 acres); Carlsbad Airport (160 acres); Jal Airport (280 acres); Artesia Airport (200 acres).

Bureau of Reclamation

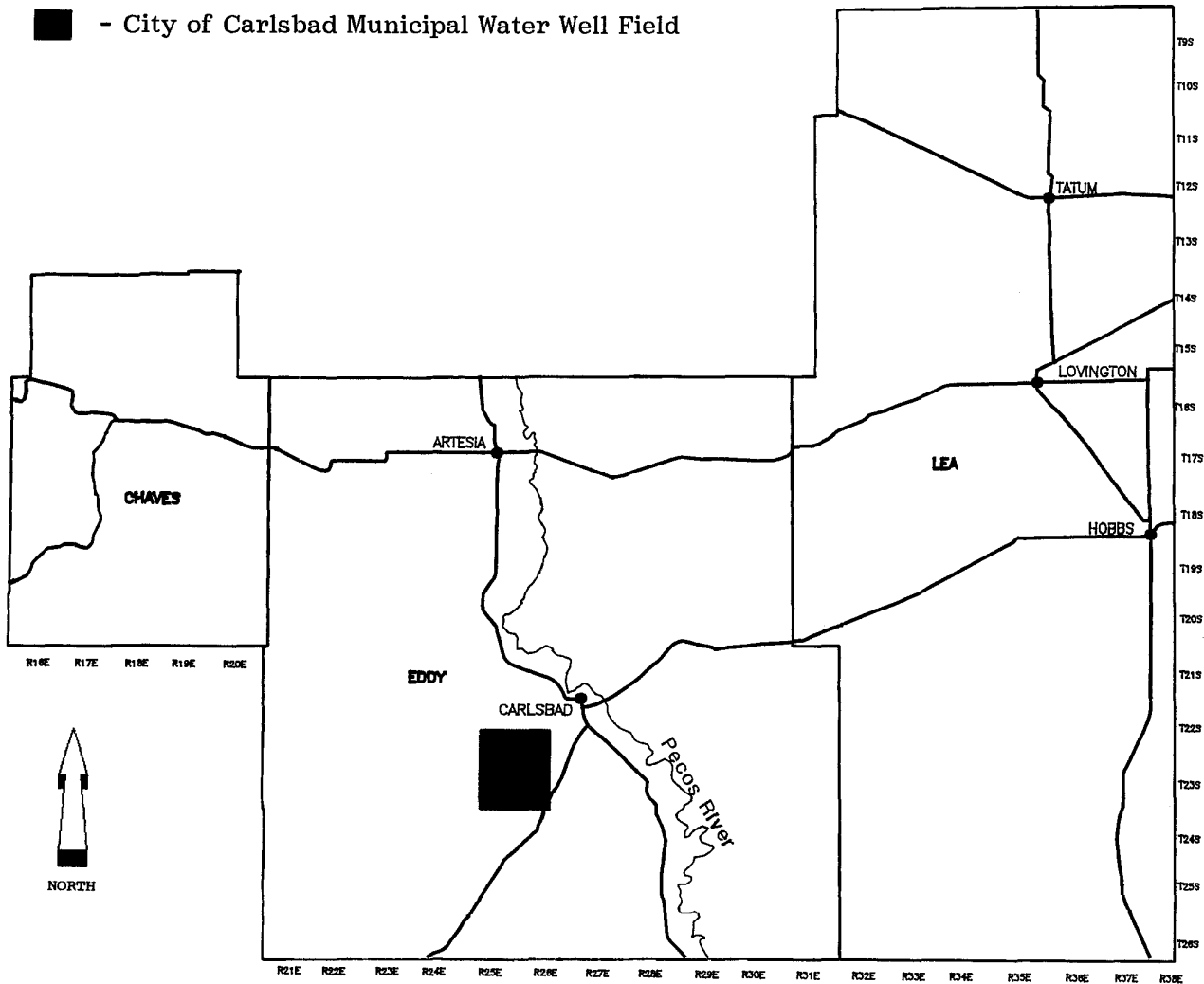
Brantley Reservoir (31,000 acres including the state park)

- No Surface Occupancy within the boundary of Brantley Lake State Park.
- No Surface Occupancy within one-half mile of Brantley Dam site. Drilling proposed within one-half to one mile of the Brantley Dam site will be considered on a case-by-case basis after review of the geology of the proposed drilling location. In no case will surface occupancy be allowed within one-half mile of the dam.
- Surface occupancy below natural elevation 3271' will be considered on a case-by-case basis.
- No storage facilities below elevation 3286' MSL.
- Areas not covered by the requirements mentioned above will be leased and managed under appropriate BLM Roswell District stipulations or Conditions of Approval (e.g., floodplain locations, see Appendixes 1 and 2).

Avalon Reservoir (14,800 acres)

- No Surface Occupancy within one-half mile of the Avalon Dam site.
- No Surface Occupancy below elevation 3190' MSL.

■ - City of Carlsbad Municipal Water Well Field



SCALE
1/2" = 9.5 Miles
BLM-Roswell District, 1994

MAP 5
CITY OF CARLSBAD
MUNICIPAL WATER WELL
FIELD

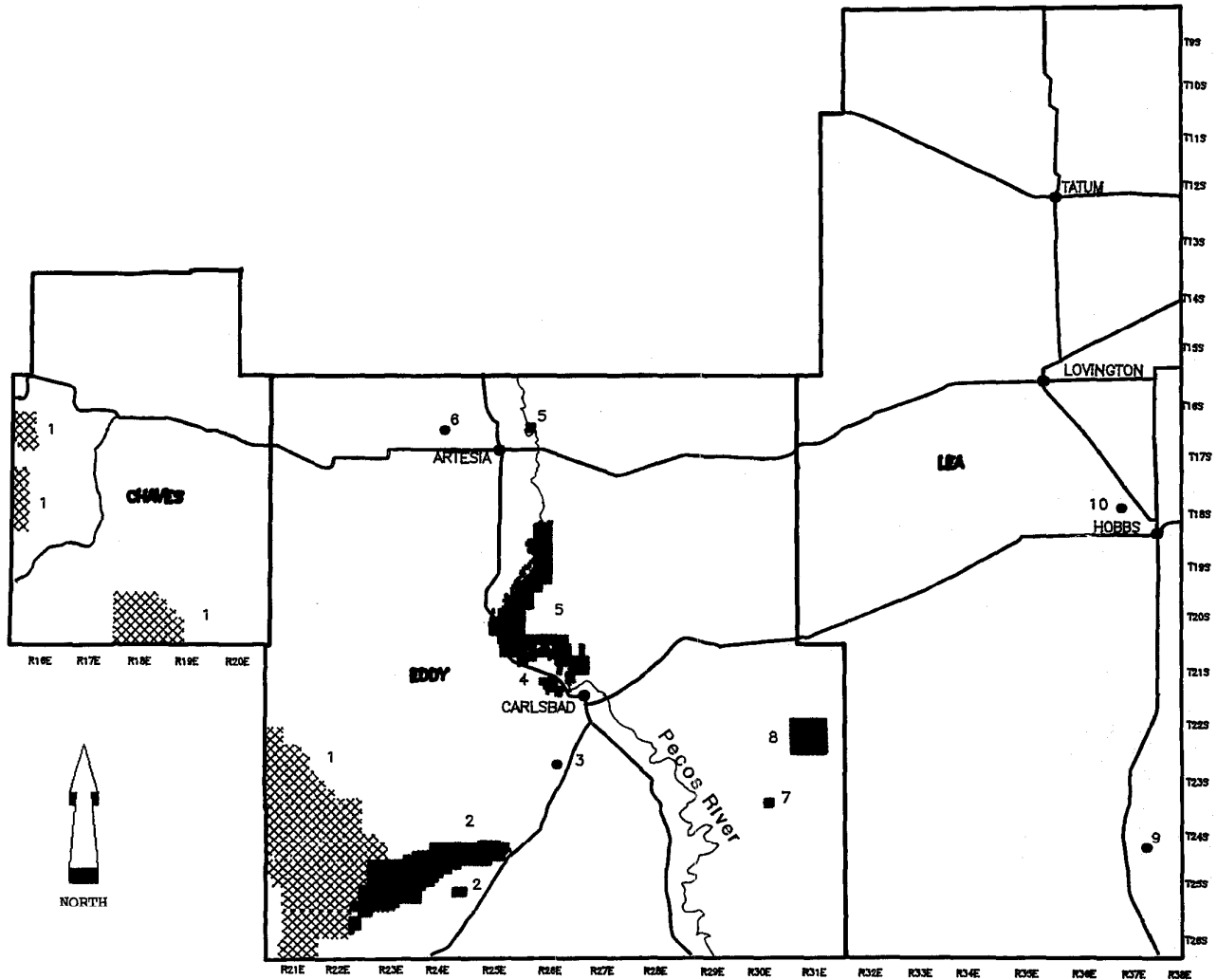
Carlsbad Resource Area

Surface Management By Other Agencies - Surface Stipulations for Federal Minerals

- 1 - Lincoln National Forest X
- 2 - Carlsbad Caverns Nat'l Park X
- 3 - Carlsbad Airport X
- 4 - Living Desert State Park/
State Militia Site X
- 5 - Bureau of Reclamation -
Avalon and Brantley
Reservoirs. X
- 6 - Artesia Airport X
- 7 - Dept. of Energy, Gnome Site X

- 8 - Dept. of Energy, WIPP Site Not Applicable
- 9 - Jal Airport X
- 10 - Hobbs Airport X

NOTE - Reader must refer to the tables and narrative to determine the affected acreage within each area.



SCALE
1/2" = 9.5 Miles
BLM-Roswell District, 1994

MAP 6
SURFACE MANAGEMENT BY OTHER
AGENCIES
Carlsbad Resource Area

- No storage facilities below elevation 3200' MSL.
- Areas not covered by the requirements mentioned above will be leased and managed under appropriate BLM Roswell District stipulations or Conditions of Approval (e.g., floodplain locations, see Appendixes 1 and 2).

If lands presently managed by the BOR revert back to the management of the BLM, they will be leased with the above restrictions and managed under appropriate Roswell District Surface Use and Occupancy Requirements (Appendix 1) and Conditions of Approval (Appendix 2).

Department of Energy

- WIPP Site (10,245 acres), not open to leasing (Note: Although the WIPP Site remains closed to leasing, administration of the federal mineral and surface estates has been transferred from the BLM to the Department of Energy.)
- Gnome Site (680 acres), not open to leasing
New Mexico State Parks

- Brantley Lake (10,000 acres), No Surface Occupancy (see "Bureau of Reclamation," above).
- Living Desert (1,120 acres), not open to leasing.

New Mexico State Militia

- Militia Site (720 acres), not open to leasing

U.S. Forest Service, Lincoln National Forest (175,345 acres)

- Not open to leasing, 26,282 acres
- Open to leasing, 149,063 acres. Acreage on which "no surface occupancy" will be applied has not been identified. Some acreage will have "controlled surface use." Restrictions on areas open to leasing will be determined on a case-by-case basis.

U.S. National Park Service

- Carlsbad Caverns National Park (46,530 acres), not open to leasing.

APPENDIXES

TABLE A-1 LIST OF APPENDIXES

Appendix

1. Surface Use and Occupancy Requirements
2. Conditions of Approval
3. Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas
4. Results of the Section 7 Consultation for the Carlsbad Resource Area
5. Protests on the Carlsbad RMPA

Glossary

APPENDIX 1

SURFACE USE AND OCCUPANCY REQUIREMENTS

This appendix describes practices intended to be applied, when needed, to minimize surface disturbance.

In the Carlsbad Resource Area, the requirements listed below will pertain only to oil and gas related activities. The standards will be applied primarily to the federal surface estate, but could be applied to split estate in order to meet the requirements of Onshore Oil and Gas Order No.1, federal law or regulations, or with the concurrence of surface landowners.

The intent of the Surface Use and Occupancy Requirements is to best manage mechanical surface disturbance and other effects on specified natural resources. Mechanical surface disturbance is created by the use of such things as tools and machinery. Activities such as grazing by livestock or wildlife or certain recreational pursuits (e.g., hiking) are not considered to create surface disturbance in the context of these requirements. Circumstances for waivers of the requirements have been included so that they will not be applied needlessly. Exceptions to the requirements will be considered in emergency situations involving human health and safety and the protection of the environment.

The basis for the "200 meter rule" used in the Surface Use and Occupancy Requirements is 43 CFR 3101.1-2, which states that, at a minimum, mitigation measures are deemed consistent with oil and gas lease rights if they do not require " ... relocation of proposed operations by more than 200 meters ... " The intent of the actions described in this Appendix is to comply with the regulations and allow the relocation of proposed

activities to mitigate impacts, but by no more than 200 meters, without undertaking additional NEPA analysis. The opportunity exists through the NEPA process to design mitigations of impacts that would require relocation greater than 200 meters. The "200 meter rule" simply allows relocation of an activity, such as during on-site meetings prior to APD approval, without the need for detailed NEPA analysis.

The Surface Use and Occupancy Requirements identify minimum use standards for activities around certain natural and man-made features to ensure protection of those features. Specific information on those features is maintained for review at the Carlsbad Resource Area office.

Table A1-1 estimates the acreages affected by the Surface Use and Occupancy Requirements. These estimates reflect the maximum amount of acreage that could be affected and are for purposes of disclosure, comparison and analysis, only. The most likely situation is that the requirements will cumulatively affect only a small area.

- **Wildlife Habitat Projects:** Surface disturbance will not be allowed within up to 200 meters of existing or planned wildlife habitat improvement projects. Large-scale vegetation manipulation projects such as prescribed burns will be excepted. This requirement will be considered for waiver with appropriate off-site mitigation, as determined by the Authorized Officer.

APPENDIX 1

**TABLE A1-1
SUMMARY OF ESTIMATED ACREAGES AFFECTED BY
SURFACE USE AND OCCUPANCY REQUIREMENTS
CARLSBAD RESOURCE AREA**

FOR PURPOSES OF ANALYSIS ONLY

Resource or Feature	Proposed Plan
Wildlife Habitat Projects	5,400
Raptor Nests	85,376
Slopes (All Ownerships)	92,983
Streams, Rivers, Floodplains	65,600
Playa and Alkali Lakes	17,351
Springs, Seeps and Tanks:	
Springs and Seeps	540
Tanks	8,800
Caves and Karst	55,610
Prairie Chickens (includes state lands):	
Timing requirements	460,700
Occupancy requirements	3,150
Sand Dune Lizard (Potential Habitat)	480,000

Notes:

1. For purposes of analysis, acreages represent the maximum number of acres affected by the requirements. Acreages actually affected when the requirements are applied will be substantially less than those listed.
2. Acreages are not additive, since many different features may occur in the same area (e.g., wildlife habitat projects, raptor nests, prairie chicken habitat and lizard habitat could all be in proximity). Adding acreages amounts to double- or triple-counting (or more) of the same acreage.
3. For determining the effects of these requirements on oil and gas activity, the acreages are assumed to fall completely within areas of high hydrocarbon potential. Actually, many of the areas on which the requirements would be applied are in areas of low or moderate hydrocarbon potential.
4. Acreages represent federal surface only, unless noted.

- Raptor Nests and Heronries: Surface disturbance will not be allowed within up to 200 meters of active heronries or by delaying activity for up to 120 days, or a combination of both. Raptor nests on special, natural habitat features, such as trees, large brush, cliff faces and escarpments, will be protected by not allowing surface disturbance within up to 200 meters of nests or by delaying activity for up to 90 days, or a combination of both.

Exceptions to this requirement for raptor

- nests will be considered if the nests expected to be disturbed are inactive, the proposed activity is of short duration (e.g. habitat enhancement projects, fences, pipelines), and will not result in continuing activity in proximity to the nest.

- Slopes or Fragile Soils: Surface disturbance will not be allowed on slopes over 30 percent. Exceptions will be considered for authorized mineral material extraction sites and designated OHV areas, for the installation of projects designed to enhance or protect renewable natural resources, or if a plan of operations and development which provides for adequate mitigation of impacts was approved by the Authorized Officer. Occupancy or use of fragile soils will be considered on a case-by-case basis.

- Streams, Rivers and Floodplains: Surface disturbance will not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains. On a case-by-case basis, an exception to this requirement may be considered based on one or more of the criteria listed below. The first three criteria would not be applied in areas of identified critical or occupied habitat for federally listed threatened or endangered species.

-Additional development in areas with existing developments that have shown no adverse impacts to the riparian areas as determined by the Authorized Officer, following a case-by-case review at the time of permitting.

-Suitable off-site mitigation if habitat loss has been identified.

-An approved plan of operations ensures the protection of water or soil resources, or both.

-Installation of habitat, rangeland or recreation projects designed to enhance or protect renewable natural resources.

Playas and Alkali Lakes: Surface disturbance will not be allowed within up to 200 meters of playas or alkali lakes. Waiver of this requirement will be considered on a case-by-case basis for projects designed to enhance or protect renewable natural resources. An exception for oil and gas development will be considered if playa lake loss was mitigated by the protection and development of another playa exhibiting the potential for improvement. Mitigation could include: installing fencing; developing a supplemental water supply; planting trees and shrubs for shelter belts; conducting playa basin excavation; constructing erosion control structures or cross dikes; or by improving the habitat in another area.

Springs, Seeps and Tanks: Surface disturbance will not be allowed within up to 200 meters of the source of a spring or seep, or within downstream riparian areas created by flows from the source or resulting from riparian area management. Surface disturbance will not be allowed within up to 200 meters of earthen tanks or the adjacent riparian areas created as a result of the presence of the tanks. Exceptions to this requirement will be considered for the installation of habitat or rangeland projects designed to enhance the spring or seep, or downstream flows.

Caves and Karst: Surface disturbance will not be allowed within up to 200 meters of known cave entrances, passages or aspects of significant caves, or significant karst features. Waiver of this requirement will be considered for projects that enhance or protect renewable natural resource values, or

when an approved plan of operations ensures the protection of cave and karst resources.

- **Prairie Chickens:** Drilling for oil and gas, and 3-D geophysical exploration operations will not be allowed in lesser Prairie Chicken habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00 a.m. to 9:00 a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise. Exceptions to these requirements will be considered for areas of no or low prairie chicken booming activity, or unoccupied habitat, including leks, as determined at the time of permitting, or in emergency situations.
- **Sand Dune Lizard:** Surface disturbance will not be allowed in documented occupied habitat areas, or within up to 100 meters of suitable habitat associated with occupied

habitat areas identified through field review. An exception to this restriction will be considered when an on-site evaluation of habitat extent, available species occurrence data, the proposed surface use, and proposed mitigations indicate the proposal will not adversely affect the local population.

- **Visual Resource Management:** Painting of oil field equipment and structures to minimize visual impacts will be conducted according to the requirements of Notice to lessees (NTL) 87-1, New Mexico. Low profile facilities also may be required, when needed, to reduce the contrast of a project with the dominant color, line, texture, and form of the surrounding landscape. Other surface facilities or equipment approved by the BLM, such as large-scale range improvements or pipelines, will be painted, when needed, to conform with the requirements of visual resource management to minimize visual impacts. Paint colors will be selected from the ten standard environmental colors approved by the Rocky Mountain Coordinating Committee. The selected paint color will match as closely as possible the predominant soil or vegetation color of the area.
- **Prairie Dog Towns:** Surface disturbance will not be allowed on public lands within known prairie dog towns or towns identified in the future. Exceptions to this requirement will be considered for maintaining existing structures or facilities. Prairie dog control will not be authorized on public lands, except in emergency situations involving public health.

APPENDIX 2

CONDITIONS OF AFFROVAL

This appendix describes standard conditions of approval. When appropriate, conditions of approval may be selected from this list and attached to use authorizations. A check-list or other suitable means may be used to identify applicable conditions of approval. The emphasis is primarily on oil and gas operations and rights-of-way, but these conditions may be applied to other activities, as well.

GENERAL CONDITIONS OF APPROVAL

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this authorization.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the pipeline route or on facilities authorized. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, *etc.*) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on this pipeline (unless the release or threatened release is wholly unrelated to the holder's activity on the pipeline). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the authorization, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Any cultural and/or paleontological resource (historic or prehistoric site or Object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder shall be responsible for the cost of evaluation and any

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decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

6. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes.

7. The holder shall be responsible for weed control on disturbed areas within the limits of the site. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods, which include following EPA and BLM requirements and policy.

8. The holder shall be responsible for maintaining the site in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

BURIED PIPELINES (RIGHT-OF-WAY) (PERMIT)

9. The holder shall conduct all activities associated with the construction, operation, and termination of the pipeline within the authorized limits.

10. The pipeline shall be buried with a minimum cover of _____ inches between the top of the pipe and ground level.

11. Blading of all vegetation ****shall/shall not**** be allowed. Blading is defined as the complete removal of brush and ground vegetation. Clearing of brush species shall be allowed. Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, *etc.*) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface. In areas where blading and/or clearing is allowed, the maximum width of these operations shall not exceed _____ feet.

12. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

13. Vegetation, soil, and rocks left as a result of construction or maintenance activity shall be randomly scattered over the project area and shall not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer, except that an earthen berm shall be left over the ditch line to allow for settling back to grade.

14. The holder shall seed all surface disturbed by construction activities. Seeding shall be done according to the attached seeding requirements (Exhibit _), using the attached seed mixture (as determined to meet Desired Plant Community objectives).

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15. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____.

16. The holder shall post signs designating the BLM serial number assigned to this authorization at the following locations: the points of origin and completion, or entry to and exit from public lands, of the pipeline and at all major road crossings. These signs shall be posted in a permanent, conspicuous manner, and shall be maintained in a legible condition for the term of the authorization.

17. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder shall take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

SURFACE INSTALLED PIPELINE

18. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. **2803/2883**. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from fire or soil movement (including landslides and slumps as well as wind and water caused movement of particles) caused or substantially aggravated by any of the following within the permit area:

A. Activities of the holder, including but not limited to, construction, operation, maintenance, and termination of the facility.

B. Activities of other parties including but not limited to: (1).
land clearing.
(2). Earth-disturbing and earth-moving work. (3).
Blasting.
(4). Vandalism and sabotage.

C. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for anyone event and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction of in which the damage of injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from the negligent acts of the United States.

19. The holder shall conduct all activities associated with the construction, operation, and termination of the pipeline within the authorized width of _____ feet.

20. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

21. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

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22. The pipeline shall be buried a minimum of _____ inches under all roads, including "two-tracks" and trails. Burial shall continue for 20 feet on each side of each crossing. The condition of the road, upon completion of the construction, shall be returned to at least its former state, with no bumps, dips, or soft spots remaining in the road surface.

23. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

24. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____.

25. The holder shall post signs designating the BLM serial number assigned to this pipeline at the following locations: the points of origin and completion, or entry to and exit from public lands, of the pipeline and at all major road crossings. These signs shall be posted in a permanent, conspicuous manner, and shall be maintained in a legible condition for the term of the authorization.

26. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder shall take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

PERMANENT RESOURCE ROADS

Road Width and Grade

27. The road will have a driving surface of ___ feet (all roads shall have a minimum driving surface of _ feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be _ feet.

I I Those segments of road where grade is in excess of 10 percent for more than 300 feet shall be designed by a professional engineer.

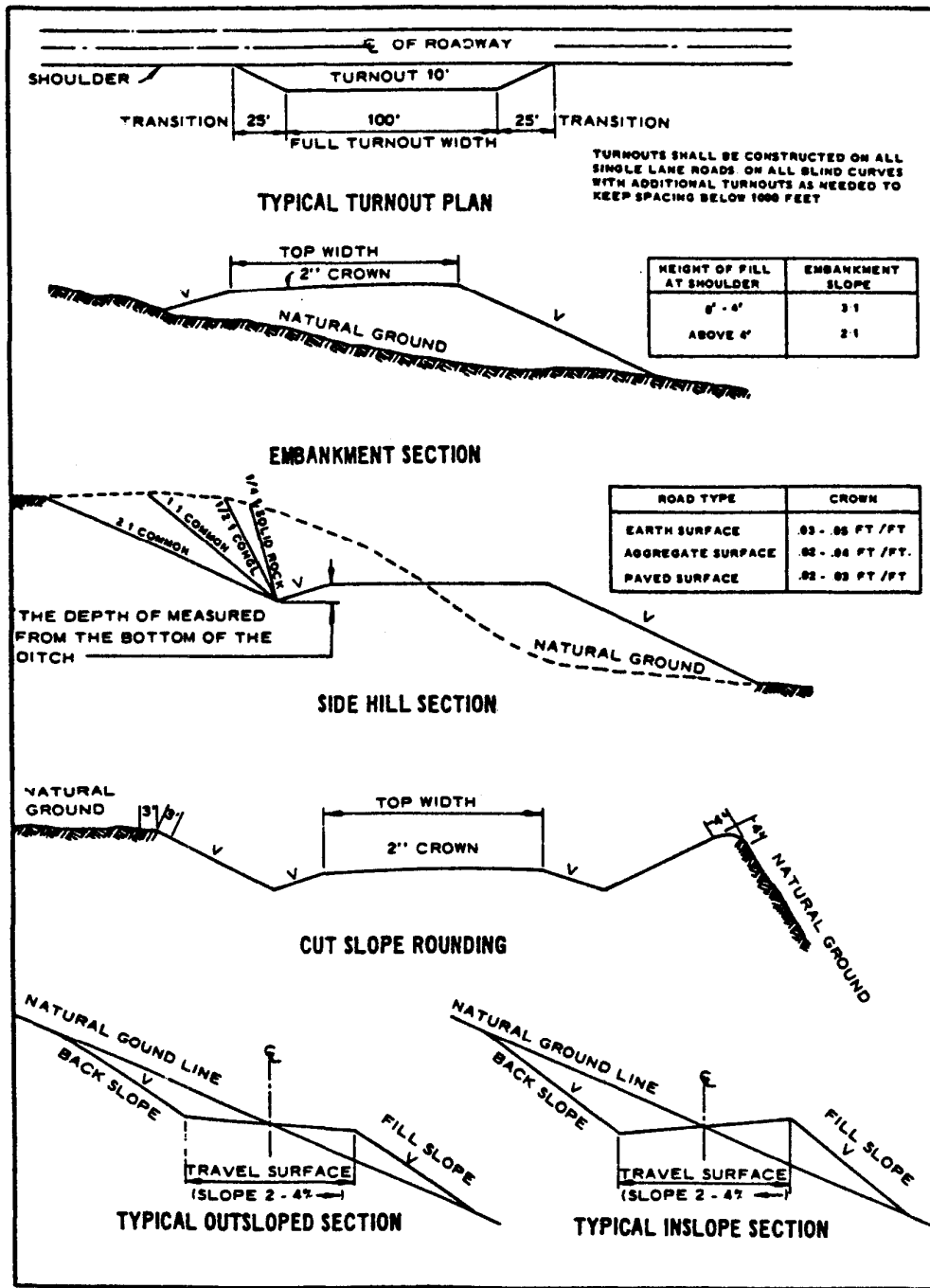
Crowning and Ditching

28. Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure A4-1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2 percent (i.e., 1" crown on a 14' wide road).

I I Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

I I Flat-blading is authorized on segment(s) delineated on the attached map.

FIGURE A2-1: CROSS-SECTIONS AND PLANS FOR TYPICAL ROAD SECTIONS



Drainage

29. Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

SPACING INTERVAL FOR TURNOUT DITCHES

Percent slope	Spacing interval
0% - 4%	400' - 150'
4% - 6%	250' - 125'
6% - 8%	200' - 100'
8% - 10%	150' - 75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at foot intervals.

400 foot intervals.

 foot intervals.

 locations staked in the field as per spacing intervals above.

locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch.

Drainage dip location and spacing shall be determined by the formula:

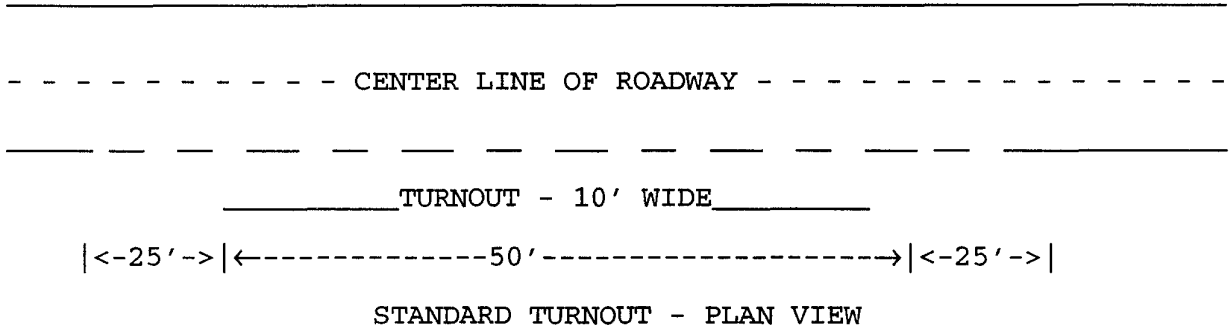
$$\text{spacing interval} = \frac{400'}{\text{road slope in \%}} + 100'$$

Example: 4% slope: spacing interval = $\frac{400}{4} + 100 = 200$ feet 4

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Turnouts

30. Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



Surfacing

31. Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of __ inches of _____. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

Cattleguards

32. Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

Maintenance

33. A. The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

B. Failure of the holder to share maintenance costs in dollars, equipment, materials, or manpower proportionate to the holders use with other authorized users may be adequate grounds to terminate the authorization. The determination as to whether this has occurred and the decision to terminate shall rest with the Authorized Officer. Upon request, the Authorized Officer shall be provided with copies of any maintenance agreement entered into.

Public Access

34. Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

Road Rehabilitation Specifications

35. When the road is abandoned, it will be ripped at least sixteen inches deep, including turnouts. The caliche may be reclaimed for re-use before ripping, if so desired. Alternately, the caliche can be plowed under with a grader, or other soil turning device, and the plowed surface disked before seeding. All culverts or other structures will be removed. All fill material will be replaced into the cut areas; barrow and lead-off ditches, drainage dips, or other erosion control earthwork will be filled or smoothed; and the abandoned road returned to the natural contours, as closely as possible. Water breaks at least eight inches high will be constructed as shown on accompanying Illustration Sheet. Traffic barriers will be installed at all vehicular access points to prevent further use of the road.

Reseed the entire area with the following mixture (to be determined by OPC):

All disturbed areas are to be seeded with the seed mixture listed above. The seed and any fertilizer involved are to be applied together by broadcasting with a seed spreader, then harrowed for seed coverage. Use of a seed drill is acceptable. Appropriate measures will be taken to ensure that the seed/fertilizer mixture is evenly and uniformly planted. There will be no primary or secondary noxious weeds in the seed mixture. Seed will be tested for viability and purity in accordance with State law(s) within nine months prior to purchase. Commercial seed will be either certified or registered and the seed mixture container will be tagged in accordance with State law(s). The seed will be available for inspection by the Authorized Officer. The seeding will be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth will not be made before completion of the first growing season after seeding. Waiver of this requirement would be considered if diligent attempts to revegetate a site have failed and the Authorized Officer determines that further attempts would be futile.

Normally, the best time for seeding is between June 15 and September 15. However, the grantee may reseed immediately after completing surface abandonment procedures. The BLM reserves the right to require reseeding at a specific time if seed does not germinate after one complete growing season. Contact the appropriate resource area office at (Phone No.) at least two working days before the start of reseeding activities or if there are any questions.

OVERHEAD ELECTRIC DISTRIBUTION LINES

36. The holder shall conduct all activities associated with the construction, operation, and termination of the powerline within the authorized limits.

37. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

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38. Powerlines shall be constructed to standards outlined in "Suggested Practices for Raptor Protection on Powerlines," Raptor Research Foundation, Inc., 1981, unless otherwise agreed to by the Authorized Officer in writing.

The holder is responsible for demonstrating that power pole designs not meeting these standards are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to power line structures constructed under this authorization, should they be necessary to ensure the safety of large perching birds. These modifications and/or additions shall be made by the holder without liability or expense to the United States.

39. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence will be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

40. Construction holes left open over night shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.

41. The holder shall evenly spread the excess soil excavated from pole holes in the immediate vicinity of the pole structure.

42. The BLM serial number assigned to this authorization grant shall be posted in a permanent, conspicuous manner, and be maintained in a legible condition for the term of the authorization at all major road crossings and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

43. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures prescribed in the grant or determined at the time of abandonment.

44. All surface structures (poles, lines, transformers, *etc.*) shall be removed within _____ days of abandonment, relinquishment, or termination of use of the serviced facilities or within _____ days of abandonment, relinquishment, or termination of this authorization, whichever comes first. This will not apply where the powerline extends to serve an active, adjoining facility or facilities.

COMMUNICATION SITES

45. The authorization is conditioned upon the submission of a copy of an approved license and/or renewal license granted by the Federal Communications Commission (FCC) or the Interdepartmental Radio Advisory Committee (IRAC) for each electronic station installation authorized or future amendments of this authorization. A copy of the FCC or IRAC authorization shall be submitted within 90 days of issuance of this authorization or within 90 days following approval of an amendment to this authorization. Failure to submit the FCC or IRAC authorization copy within the time specified shall be grounds for termination of this authorization or cancellation of an amendment to this authorization. The Authorized Officer may grant an extension of up to 90 days, if requested in writing by the holder.

46. The holder and its sublessees shall at all times operate their radio-electronic equipment in such a manner as not to cause interference with radio-electronic operations of existing users in the vicinity. If such interference results from holder's or sublessee's operations, holder shall promptly, at its own

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expense, modify the equipment and operations, or shut down if necessary to eliminate or reduce the interference to the satisfaction of the FCC, IRAC" and/or the Authorized Officer.

47. The holder shall notify the Authorized Officer of any intent to locate additional users within or upon their existing facilities, not less than 45 days prior to occupancy of holder's facilities. Information that must be included is:

- a. Name, current address, and phone number of the third party user(s).
- b. Expected date of occupancy.
- c. A photo or sketch of the type of antennas to be installed, as well as any other planned physical changes to the exterior facilities operated by the holder. If the proposed use is not specified in the original authorization shall be required.

48. No less than 45 days prior to occupancy of the holder's facility, the holder shall notify existing users within a 1-mile radius that the holder intends to accommodate a new communication user in its facility. Existing users can then file any comments pertaining to potential frequency or electromagnetic problems with the Federal Communications Commission, 1919 M Street NW, Washington, DC 20554, with a copy to the Authorized Officer.

49. The holder shall be responsible for the actions and operations of any third party users associated with this facility. All such use shall be subject to the applicable terms, conditions, and stipulations of this authorization.

50. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____

51. The holder shall post signs designating the BLM serial number assigned to this facility at the points of entry to and exit from the site. These signs shall be posted in a permanent, conspicuous manner, and shall be maintained in a legible condition for the term of the authorization.

52. The holder agrees to share road maintenance costs with all present and future users of the access road. At such future time as a Users Association for this communication site is formed, the holder shall join the Users Association and remain a member in good standing. Within 30 days of the creation of such Users Association the holder shall provide the authorized officer with evidence of membership. Failure of the holder to join the Users Association and remain a member in good standing shall constitute sufficient grounds for termination of this authorization.

Oil AND GAS RELATED SITES (RIGHT-OF-WAY)

53. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The! paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____

54. The holder shall post a sign designating the BLM serial number assigned to this authorization in a permanent, conspicuous location on the site when3 the sign will be visible from the entry to the site. This sign will be maintained in a legible condition for the term of the authorization.

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SALTWATER DISPOSAL WELLS (COMMERCIAL)

55. This permit is subject to all terms, conditions, and stipulations of the NMOCDC approval and applicable Roswell District General Requirements for Oil and Gas Operations on Federal Leases (copy attached).

56. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. **2803/2883**. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from fire or soil movement (including landslides and slumps, and movement by wind and water) caused or substantially aggravated by any of the following within the authorized site or facilities:

A. Activities of the holder, including but not limited to, construction, operation, maintenance, and termination of the facility.

B. Activities of other parties including but not limited to:

- (1) Land clearing.
- (2) Earth-disturbing and earth-moving work.
- (3) Blasting.
- (4) Vandalism and sabotage.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for anyone event and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction of in which the damage of injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from the negligent acts of the United States.

57. As a guarantee of faithful performance of the provisions of this grant, the holder agrees to deliver and maintain a surety bond, or other performance security acceptable to the Authorized Officer, in the amount of _____, (minimum of \$25,000) to cover the costs of plugging and reclamation. Should the sureties or bonds delivered under this grant become unsatisfactory to the Bureau, the holder shall, within thirty (30) days of demand, furnish a new bond, or other acceptable security, with surety.

The holder may deposit in a Federal depository as directed by the Bureau, and maintain therein, cash in the amounts provided for above or negotiable securities of the United States having a market value at the time of deposit of not less than the dollar amounts provided for above.

58. The holder agrees to secure the prior approval of the Authorized Officer before commencing any operations such as: drilling out cement plugs, cementing operations, perforating (using explosive or hydraulic fracturing), deepening, altering or pulling a portion of the well's casing, plugging operations, or any other operation affecting the well.

59. The holder agrees to use the well solely for salt water disposal. No other substance--including oil, condensates, sludge, drilling fluids, other chemicals, or any toxic pollutant (as this term is defined under the Clean Water Act 40 CFR 104-149, Section 502)-shall be injected.

60. At any time deemed necessary by the Authorized Officer, earthen dikes shall be constructed and maintained around all tanks, vessels, and storage facilities. These dikes will be designed to contain, at

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a minimum, the entire contents of the largest tank within the facility, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

61. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____.

62. The holder shall post a sign in a permanent, conspicuous location at the site. At a minimum, the sign will state the holder's name, the well name, the BLM serial number, and the legal location by township, range, and quarter-quarter of section. The sign will be maintained in a legible condition for the term of the authorization.

63. Upon cancellation, relinquishment, or expiration of this authorization, the holder shall comply with those abandonment procedures, including restoration and decontamination (if necessary) of the surface and plugging of the well bore, prescribed in the authorization or determined at the time of abandonment.

BURIED TELEPHONE CABLES

64. The holder shall conduct all activities associated with the construction, operation, and termination of the telephone line within the authorized limits.

65. There shall be no clearing or blading of the telephone route unless otherwise agreed to in writing by the Authorized Officer.

66. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

67. Vegetation, soil, and rocks left as a result of construction, drilling, or maintenance activity shall be randomly scattered over the project area and shall not be left in rows, piles, or berms (except for a berm left over the ditch line to allow for settling back to grade), unless otherwise approved by the Authorized Officer.

68. The holder shall post signs designating the BLM serial number assigned to this authorization at the following locations: the points of origin and completion, or entry to and exit from public lands, of the telephone line and at all major road crossings. These signs shall be posted in a permanent, conspicuous manner, and shall be maintained in a legible condition for the term of the authorization.

69. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____.

70. The holder shall not use the telephone cable route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder shall take whatever steps are necessary to ensure that the telephone cable route is not used as a roadway.

CATHODIC PROTECTION SITES

71. Unless otherwise approved, in writing, by the Authorized Officer, the holder shall reseed all surface disturbed by construction activities. If reseeding is required, it will be done according the attached seeding requirements (Exhibit), using seed mixture as determined by DPC.

72. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____ Munsell Soil Color Chart Number _____ .

73. The holder shall post a sign designating the BLM serial number assigned to this authorization and the holder's name at the site. This sign will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the term of the authorization.

APPLICATION FOR PERMIT TO DRILL

74. The operator shall post signs identifying the location permitted herein in accordance with the requirements contained in Onshore Oil and Gas Order #1 and 43 CFR 3162.6.

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN:

(example) OPERATORS NAME: XYZ Oil & Gas Company
WELL NAME & NO: #1 XYZ Federal
LEASE NO.: NM-XXXXX
LOCATION: XX' FXL & XX' FXL- Sec. XX. T. XX S .. R. XX E .. NMPM

On lease - Surface Requirements Prior to Drilling:

75. The approval of this action does not in any way grant or imply approval of any off-lease or off-unit action. It is the responsibility of the applicant to obtain any such approvals from the appropriate surface managing agency, including the B.L.M., and/or any private landowners.

76. The BLM will monitor construction on this drill site. Notify the appropriate Resource Area Office, BLM at least (specify) working days prior to commencing construction at (505) _____ _

77. Prior to commencing construction of the road, pad, or other associated developments, the operator shall provide the dirt contractor with a copy of the approved Surface Use Plan and the attached Conditions of Approval.

78. All vehicles and equipment associated with drilling, completion, or production phases of this well shall be confined to the approved road, pad, and other areas herein approved.

79. All topsoil and vegetation encountered during the construction of the drill site areas shall be stockpiled and made available for resurfacing of the disturbed areas after completion of the drilling operations. Topsoil on the (well name and number) is approximately (specify) inches in depth. A minimum of approximately (specify) cubic yards of topsoil material shall be stockpiled on the (specify) edge / at the (specify) corner of the location for reclamation of the pad and pit area.

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80. The drill pad and access road for this well must be surfaced with (specify) inches of compacted caliche, gravel, or other approved surfacing material.

81. Caliche, gravel, or other related materials from new or existing pits on Federal mineral estate shall not be taken without prior approval from the Authorized Officer.

82. Payment for Federal mineral materials to be used for construction is required prior to construction of the pad and access road.

Drilling Pits:

83. A. Reserve pits shall be constructed such that at least one half the total pit volume is below natural ground level (minimum of 4 feet) unless approved by the Authorized Officer or a metal closed pit system is used. All mud pits shall be constructed so as not to leak, break, or allow discharge of liquids. Pits are not to be located in any natural drainage. Any plastic material used to line pits, must be at least mil in thickness, have a bursting strength of PSI, and be removed to below ground level before the pits are covered.

B. Reserve pits shall be fenced on three sides during drilling operations. The fourth side shall be fenced immediately upon rig release. Any pit or open top tank containing oil and/or toxic liquids shall be equipped to deter entry by birds, bats, and other wildlife, and livestock.

C. Liquids in pits will be allowed to evaporate, or be properly disposed of otherwise, before pits are reclaimed. Under no circumstances shall pits be cut to be drained.

Containment Dikes:

84. Firewalls/containment dikes are to be constructed and maintained around all storage facilities/batteries. The containment structure must have sufficient volume to contain, at a minimum, the entire contents of the largest tank within the facility/battery, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Cave Protection Requirements:

85. A. If, during any construction activities any sinkholes or cave openings are discovered, all construction activities shall immediately cease, and the BLM office will be notified.

85. B. The BLM will, within 24 hours of notification in "A" above, conduct an on-the-ground field inspection for karst. At the field inspection, the authorized field inspector will authorize or suggest mitigating measures to lessen the damage to the karst environment. A verbal order to proceed or stop the operation will be issued at that time.

Painting:

86. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is _____, Munsell Soil Color Chart Number _____

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Fences:

87. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

Well Completion Requirements:

88. If the well is completed, the reserve pit(s) shall be backfilled when dry, and cut-and-fill slopes shall be reduced to a slope of 3: 1 or less. All areas of the pad not necessary for operations must be re-contoured to resemble the original contours of the surrounding terrain, and stockpiled topsoil must be re-distributed and the reclaimed area re-seeded. Seeding shall be done according to the attached seeding requirements (Exhibit B), using the attached seed mixture (as determined by Desired Plant Community).

89. All open-vent exhaust stacks associated with heater-treater, separator and dehydrator units shall be modified to prevent birds and bats from entering them and to the extent practical to discourage perching and nesting.

New production equipment installed on federal leases after November 1, 1993, will have the open-vent exhaust stacks constructed to prevent the entry of birds and bats and, to the extent practical, to discourage perching and nesting.

Abandonment:

90. If the well is dry and is to be plugged, approval of the proposed plugging program may be obtained verbally. However, verbal approval must be confirmed in writing by immediately filing an original and the required number of copies of the Notice of Intent to Abandon (Form 3160-5) with the appropriate BLM area office. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where plugs are to be placed, type of plug, type of plugging mud, etc.

91. Following receipt of "Subsequent Report of Abandonment", final BLM requirements for surface reclamation will be as specified in the authorization or determined at the time of abandonment.

92. If the well is not drilled, notify the BLM so that an official release can be approved.

MINERAL MATERIAL SITES

93. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

94. The holder shall conduct all activities associated with the construction, operation, and termination of the material pit within the authorized limits.

95. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass

APPENDIX 2

through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates shall be allowed unless approved by the Authorized Officer.

96. The holder shall be responsible for the actions and operations of any third party users associated with this authorization. All such use shall be subject to the applicable terms conditions and stipulations of this authorization.

97. The road proposed as part of this authorization shall be constructed and maintained in accordance with BLM road standards, including the New Mexico Roads Policy.

98. The holder shall seed all surface disturbed by construction activities. Seeding shall be done according to the attached seeding requirements (Exhibit ___), using the attached seed mixture (as determined by DPC).

99. Suitable topsoil material removed in conjunction with clearing and stripping shall be conserved in stockpiles (within the material site) (at the following staked locations: specify location). Topsoil shall be stripped to an average depth of (specify) inches. A total of (specify) cubic yards of topsoil shall be stockpiled.

100. Excess excavated, unsuitable, or slide material shall be disposed of as directed by the Authorized Officer.

101. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of (designate) inches deep, the soil shall be deemed too wet to adequately support construction equipment.

102. Existing roads and trails on public lands that are blocked as the result of the material pit activities shall be rerouted or rebuilt as directed by the authorized officer.

103. The holder shall recontour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavations, and grading to reestablish the approximate original contour of the land as determined by the authorized officer.

104. The holder shall uniformly spread topsoil over all unoccupied disturbed areas. Spreading shall not be done when the ground or topsoil is frozen or wet.

105. The BLM will monitor construction on this material pit site. Notify the appropriate Resource Area Office, BLM at least (specify) working days prior to commencing excavation at (505) _____ .

HYDROSTATIC TEST WATER DISCHARGE SITES

106. Before being authorized to discharge any hydrostatic test water, the Holder must submit to the BLM's Authorized Officer a hydrostatic test water discharge plan approved by the New Mexico Oil Conservation Division, Discharge of hydrostatic test water must comply with Environmental Protection Agency regulations described in 40 CFR 260, including testing the waste for hazardous waste characteristics before disposal. Generators of hydrostatic test water also must meet the discharge plan requirements of the New Mexico Water Quality Act and the New Mexico Water Quality Control Commission regulations 3-106b.

107. Prior to discharging hydrostatic test water from the pipeline, the Holder shall design and install a suitable energy dissipator at the outlet(s), and design and install appropriate erosion protection structures

APPENDIX 2

needed to ensure that there will be no erosion or scouring of the natural surface or channels within the affected area as a result of the discharge. The Holder will be held accountable for any erosion, scouring, or depletion of vegetation resulting from the discharge. Any structures or objects, including sandbags, rocks, hay bales, or other material installed for erosion control, will be removed from the site upon completion of the hydrostatic testing.

108. The Holder shall inform the Authorized Officer three working days prior to the completion of the hydrostatic test and water discharge.

FLOODPLAIN DEVELOPMENT

109. If a threat of flooding by the Pecos River occurs during drilling operations, the _____ Resource Area Manager will issue a shut-in order. Toxic substances and, possibly, drilling equipment will be removed from the floodplain.

110. A drilling pad will be elevated at least _____ (inches, feet) and surfaced according to Condition of Approval 80.

111. All riparian habitat will be protected according to instructions provided by the Authorized Officer. Trees will not be cut down unless authorized.

112. Self-contained metal tanks are required for floodplain locations.

113. Pits containing oil, tank bottoms or other hydrocarbons, salt water, or any toxic substances will not be allowed in the floodplain.

114. Provisions for containing salt water flow must be made prior to beginning drilling, without resorting to reserve pits constructed in the ground. Metal tanks or tank trucks must be in place to collect salt water. Salt water storage will not be allowed in the floodplain.

115. Production facilities will be located outside the floodplain.

116. Flowlines from the wellhead to production facilities will be buried, if soil conditions permit burial.

117. Special precautions will be taken to reduce damage from flooding:

- a. The well will be equipped with a down-hole shut-in device, rated at working pressure of 1,500 psi;
- or
- b. The wellhead will be buried below ground in a concrete cellar with a grate over it; or,
- c. Three steel posts will be set in concrete. Horizontal steel cross bars will connect the posts.

Heavy gauge chain link fencing will be welded or bolted to the post and cross bars. The V must point upstream or in the direction specified.

118. Chemical toilets will be used instead of latrines.

DRILLING RIG STORAGE

119. The holder shall conduct all activities associated with the operation, and termination of the rig storage within the authorized limits. All activity will be limited to (describe authorized area of activity) and the immediate perimeter (describe distance--maximum of 20 feet).

APPENDIX 2

120. If the storage of this rig should interfere with the producer's operations, the holder shall be required to remove it immediately.

121. Should the well be plugged and abandoned during the term of this permit, the permittee will be required either to remove the drilling rig within 30 days or assume all responsibility for restoration of the well pad and access road.

122. The BLM will be notified in writing within 30 days after removal of the drilling rig. Address correspondence to:

Bureau of land Management
Roswell Resource Area
2909 West Second Street
Roswell, NM 88201
Attention: Realty Section

or

Bureau of land Management
Carlsbad Resource Area
620 E. Greene
Carlsbad, NM 88220-6269
Attention: Realty Section

GEOPHYSICAL EXPLORATION

The following special conditions are attached, when needed, to the "Terms and Conditions for Notice of Intent to Conduct Geophysical Exploration." Figure A4-2 is a copy of the Notice of Intent, located at the end of this Appendix.

123. There shall be no 3-D geophysical activities in Lesser Prairie Chicken habitat between March 15 and June 15. Other geophysical operations may be conducted during this period if they do not commence until after 9:00 a.m. and are not conducted between the hours of 3:00 a.m. and 9:00 a.m. Any deviation from this requirement must be approved by the Authorized Officer.

124. All gas or diesel combustion engines must have mufflers installed to effectively reduce the impact of excessive noise levels within Lesser Prairie chicken habitat.

125. Sand dune lizard study sites (See Exhibit __, map) identified in the project area shall be avoided by vehicles involved in geophysical operations. A flagged buffer zone surrounding the study sites will identify the areas of concern. No A TVs shall be driven within the study sites. Geophones shall be hand carried onto the study sites. Drive-arounds shall be strictly adhered to within the study site areas.

126. Geophysical operations at sand dune lizard study sites will be monitored. One day prior to commencing geophysical operations within the immediate areas of sand dune lizard study sites, the geophysical company's representative shall call _____ at _____ .

127. All large, hummocky sand dunes encountered during geophysical operations shall be avoided by driving around the sand dunes.

APPENDIX 2

128. Any large trees (e.g., soapberry, elm, or large mesquite) encountered in the area of operations shall be avoided and shall not be disturbed.

129. Playas shall be avoided by using re-routes or skips.

130. Wildlife watering facilities shall be avoided by using re-routes or skips.

131. Archaeological sites shall be avoided by adhering to the re-routes flagged in the field, which are listed in the attachment to the NOI. Additional cultural resources protections provided in cultural report _____, which are listed in the attachment, shall be followed.

132. Any fence needing to be cut during operations to allow access shall be immediately repaired to a condition as good as or better than the condition in which the fence was found. No fence shall be removed.

133. Where appropriate, disturbed areas shall be rehabilitated as directed by the Authorized Officer. Rehabilitation techniques may include, but are not limited to: ripping, disking, or other seed bed preparation; reseeding; placement of erosion control devices; and berming, barricading, and/or signing geophysical routes where they cross roads.

134. Operations shall be suspended when, in the judgement of the Authorized Officer, they have the possibility of unduly harming the surface during periods of wet weather or drought.

FILMING PERMITS

135. All vehicular traffic shall be confined to existing roads.

136. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

137. Upon cancellation, relinquishment, or expiration of this authorization, the holder shall comply with rehabilitation procedures prescribed by the Authorized Officer.

138. The holder shall notify the Authorized Officer upon completion of operations so that a compliance check can be conducted.

139. Acknowledgment, through the film credits, shall be given to: the U.S. Department of the Interior, Bureau of Land Management, Roswell Resource Area.

140. The permittee shall provide the BLM with proof of an insurance policy, naming the Bureau of Land Management as "additionally insured" or "co-insured".

141. The permittee shall provide the appropriate resource area office with a copy of the finished film product within two weeks of public distribution.

APPENDIX 2

FIGURE A2-2

Form 3150-4a
(July 1993)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

TERMS AND CONDITIONS FOR NOTICE OF INTENT
TO CONDUCT OIL AND GAS GEOPHYSICAL EXPLORATION

FORM APPROVED
OMB NO. 1004-0162
Expires: April 30, 1996

BLM Case No.
State Case No.

Company Name		Date NOI Filed	
Address			
City		State	Company Project Name
Zip Code	Phone No. (include area code)	Client	Crew Number

GENERAL

1. A copy of the approved Notice of Intent to Conduct Oil and Gas Geophysical Exploration Operational and Terms and Conditional shall be kept in the field with each seismic crew.
2. The BLM shall be notified at least 3 days no DO more than 14 days before entering onto public lands. If conditions have changed, additional terms and conditions may be necessary.
3. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archeological sites, or for collecting artifacts. If historic or archeological materials are discovered, the operator is to immediately stop work that might further disturb such materials, and contact the Authorized Officer (AO). Within five working days the AO will inform the operator as to:
 - Whether the materials appear eligible for the National Register of Historic Places;
 - The mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
 - A timeframe for the AO to complete ID expedited review under 36 CFR 800.11 to COL16m. through the Site Historic: Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or delay associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume operation.

4. Due care must be taken to safeguard all livestock, wildlife, and wild horses in the vicinity of the exploration operations. Measures to mitigate adverse effects on protected or threatened/endangered species will be determined by the AO after consultation with the operator.
5. Operations shall be suspended when in the judgment of the Authorized Officer they have the possibility of unduly harming the surface during periods of wet weather.
6. Range improvements (fences, reservoirs, etc.) or land treatment projects (contour furrowing, seeding, or range monitoring sites) shall not be disturbed or altered without prior written approval of the Authorized Officer.
7. Federally owned or controlled water shall not be used without written permission of the Authorized Officer.
8. All fires set or caused as a result of these exploration operations shall be extinguished without expense to the government. All fires shall be reported to the BLM as soon as possible.
9. The operator shall notify the Authorized Officer in writing of any changes in the original application and secure written approval for the changes before proceeding.
10. When it is determined that activities will come closer than one quarter (1/4) mile of developed recreation sites, historic trails, springs or flowing water wells the Authorized Officer will be consulted to determine if the action is permissible.
11. Advanced written permission shall be obtained before conducting surface disturbing activities. This includes, but is not limited to: towing with a tractor, blading, dozing, snow removal, and vegetation removal.
12. Powder magazines and explosives shall be stored and handled according to U.S. Bureau of Alcohol, Tobacco and Firearms (ATF) standards. As required by ATF, loaded shotguns shall not be left unsecured.

(Continued on reverse)

APPENDIX 2 FIGURE

A2-2 (continued)

RECLAMATION/CLEANUP

1. Reclamation of disturbed areas shall be done concurrently with the geophysical operation, in-so-far as possible.
2. Shallow hole plugging shall be completed using the guidelines developed by the appropriate State/local regulatory agency or agencies and the Bureau of Land Management State Office. The requirements vary from State to State; therefore, those specific to the State the project is being conducted in will be followed.
3. Where appropriate, disturbed areas shall be reseeded, as directed by the Authorized Officer, until vegetative cover is established that is commensurate with pre-survey conditions. In areas where reseeded is not appropriate, the authorized officer shall determine what steps should be taken.
4. All trash, flagging, lath, etc. shall be removed and hauled to an authorized disposal site.
5. No oil or lubricants shall be drained onto the ground surface.
6. The operator shall notify the Authorized Officer of the date operations are completed.

COMPLETION OF PROCEDURES

1. A Notice of Completion (NOC) (Form 3150-5) shall be filed within 30 days of completion of operations including reclamation. A map (minimum scale of 1:24,000) must be attached to the NOC showing public lands crossed and the final location of source points.

I understand and agree to comply with these terms and conditions and any attached special conditions.

(Signature of Appropriate Representative)

(Date)

Special Conditions Attached

APPENDIX 3

PRACTICES FOR OIL AND GAS DRILLING AND OPERATIONS IN CAVE AND KARST AREAS

This appendix describes practices for detecting and avoiding significant caves and significant karst features with respect to oil and gas drilling, and for mitigating impacts to significant caves and karst when they cannot be avoided. These mitigations are predicated on the BLM's responsibilities for resource management and protection derived from the Federal Land Policy and Management Act, the Federal Cave Resources Protection Act, and the National Environmental Policy Act. The practices described here supersede those of the Draft "Interim Guide for Oil and Gas Drilling and Operations in Cave and Karst Areas" (February 1993).

POTENTIAL FOR CAVES OR KARST

A map of cave or karst potential will be maintained to provide the public with current information about the likelihood of the presence of cave or karst resources. The map will serve as an indicator of the potential for encountering caves or karst for which special practices could be required, following NEPA analysis, to mitigate drilling impacts. The primary use of the map is as a source of information for individuals or companies contemplating the leasing of federal minerals.

Three zones of cave or karst occurrence have been identified and categorized: high potential; medium potential; and low potential. Areas that contain known cave or karst features are in the high potential zone. Areas containing known soluble rock formations with the potential for cave or karst development are in the medium potential zone. These zones were identified using geologic maps and existing information on caves and karst. All other lands fall into the low potential zone. These zones may be increased or decreased in size as new information from drilling, cave exploration or other sources becomes available.

The cave or karst occurrence zones have been

further divided into smaller geographic areas to provide an additional means of identification of a specific area (See Table A3-1 and Map A3-1). An estimate has been made for each of these areas as to the lowest likely depth at which caves might be expected. Again, this is simply a source of information for individuals or companies contemplating the leasing of federal minerals.

The lease notice "Potential Cave or Karst Occurrence Area" (Roswell 46), will be applied to leases when all or part of the lease is located in a high or medium potential cave or karst occurrence area. Refer to Figure A3-1 for an example of the lease notice. The purpose of the lease notice, as with maps of cave or karst potential, is to provide information to the purchasers of federal oil and gas leases.

Because the identification of cave or karst potential zones is only informational, the mitigations described below will be applied, when and where appropriate, irrespective of any identified zone of cave or karst potential. However, the emphasis of management will be on caves presently designated significant or on those designated in the future as significant, and on significant karst features.

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**TABLE A3-1
CAVE OR KARST OCCURRENCE AREAS
CARLSBAD RESOURCE AREA**

Area^{1/}	Area Name	Depth^{2/}	Potential^{3/}
1	Hope	350	High
2	Deer Canyon	500	High
3	Sinkhole Flats	350	High
4	Seven Rivers Hills	350	High
5	Three Forks	500	High
6	Dunaway Canyon	500	High
7	Azotea Mesa	2,500	High
8	Guadalupe Ridge	2,500	High
9	Burton Flats	350	High
10	Dog Canyon Draw	350	High
11	Chosa Draw	350	High
12	Nash Draw	350	High
13	Remuda Basin	350	High
14	Los Medaños	350	High
15	Big Sinks	350	High
16	Red Bluffs	350	High
17	San Simon Swale	350	High
18	High Plains	None	Low
19	East Guadalupe Escarpment	500	Medium
20	Dark Canyon	1,500	Medium
21	Artesia	None	Low
22	Medium Potential	350	Medium
23	Lonesome Ridge	2,500	High
24	Lost Cave	1,500	High

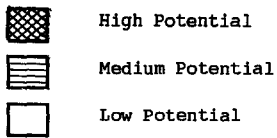
^{1/} Refers to areas on the "Cave or Karst Occurrence Areas" map for the Carlsbad Resource Area.

^{2/} Lowest likely depth, in feet, at which caves might be expected, measures from the surface.

^{3/} Potential for cave or karst occurrence.

Source: BLM files, 1994.

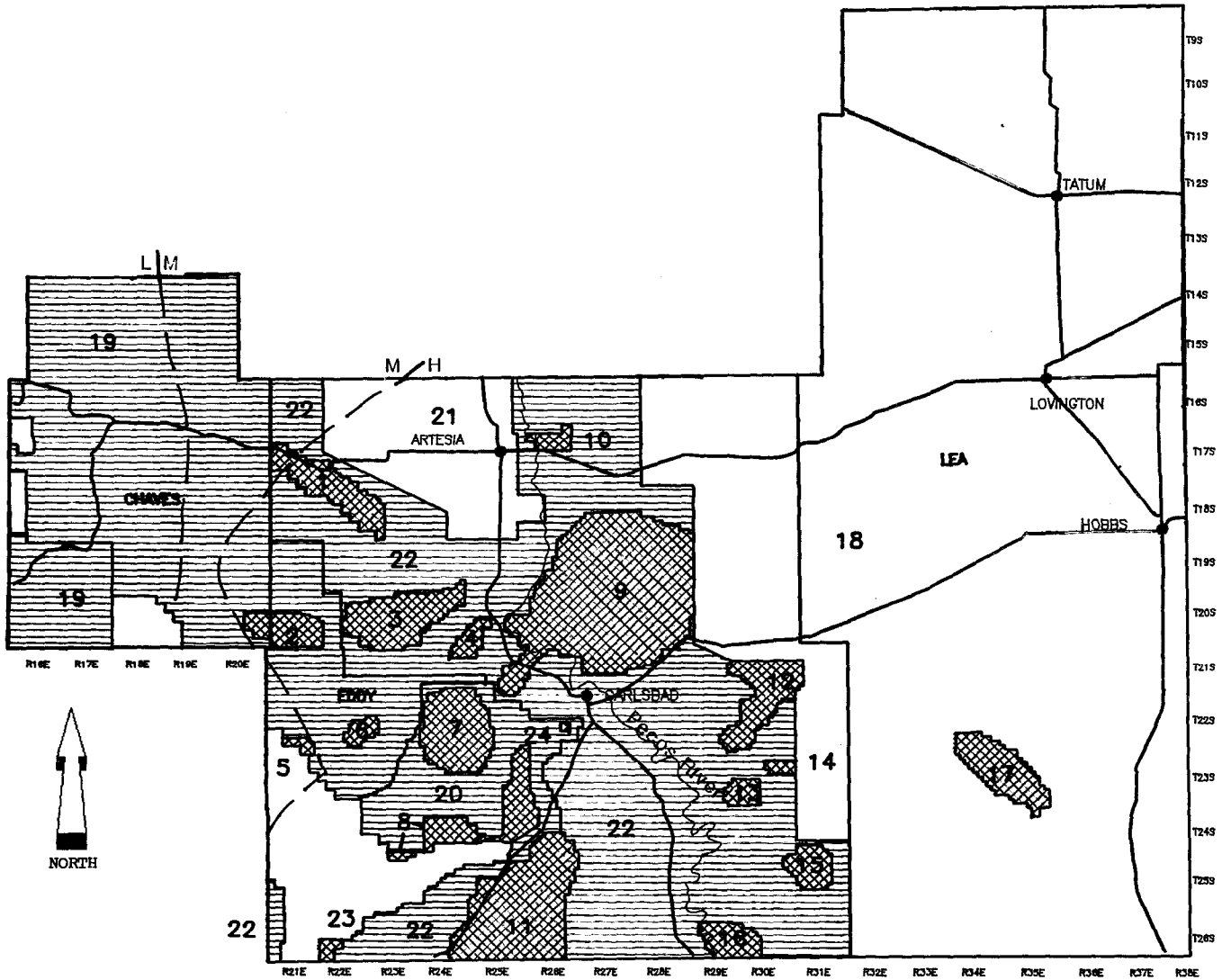
Cave or Karst Occurrence Areas



Oil & Gas Potential
Occurrence Boundaries

H = High Potential
 M = Moderate Potential
 L = Low Potential

NOTE - The table associated with this map shows the relative depth of each area shown on this map. For example, area number 9 is the Burton Flats area which has a high potential for the occurrence of caves or karst features to a depth of 350 feet.



SCALE
 1/2" = 9.5 Miles
 BLM-Roswell District, 1994

MAP A3-1 CAVE or KARST OCCURRENCE AREAS Carlsbad Resource Area

FIGURE A3-1

LEASE NOTICE

Potential Cave or Karst Occurrence Area

All or portions of the lease are located in a potential cave or karst occurrence area. Within this area, caves or karst features such as sinkholes, passages, and large rooms may be encountered from the surface to a depth of as much as 2,500 feet, within surface areas ranging from a few acres to hundreds of acres. Due to the sensitive nature of the cave or karst systems of this area, special protective measures may be developed during environmental analyses and be required as part of approvals for drilling or other operations on this lease. These measures could include: relocation of the proposed well; changes in drilling operations; special casing and cementing programs; modifications to surface facilities; or other reasonable measures to mitigate impacts to cave or karst values. These measures may be imposed in accordance with 43 CFR 3101.1-2; 43 CFR 3162.5-1; Onshore Oil and Gas Order No.1; and Section 6 of the lease terms.

Roswell 46
February
1991

MITIGATION OF DRILLING IMPACTS

The need to relocate drilling locations to avoid caves or karst, and any special drilling or production practices employed to mitigate impacts to caves or karst, will be determined during the NEPA analysis of APDs or other applications. The practices described below will be applied where needed, and to the extent necessary, to ensure that the potential impacts of drilling oil or gas wells, or of constructing other facilities, in cave or karst areas would be minimized according to the following process:

- (1) Detect potential cave or karst resources and determine their significance.
- (2) Avoid cave or karst resources where possible.
- (3) Mitigate impacts to caves or karst that cannot be avoided.

The results of any detection efforts will be

addressed in the NEPA analysis and appropriate mitigations will be developed, if needed, as part of the analysis.

Depending on the results of detection, avoidance will be considered as a means of mitigating potential impacts. In most cases, avoidance will be accomplished by relocation of the proposed well location, which is often done in consultation with the operator at the time of a field examination. Moving a proposed location up to 200 meters is a commonly employed avoidance measure. The need to move a location more than 200 meters will be addressed in the NEPA analysis of an APD. If the construction of a pipeline, road, power line or other facility is proposed, rerouting or relocation will be required to accomplish avoidance.

The management of oil and gas operations in cave or karst areas, including approvals for drilling oil or gas wells, will be guided by procedures described below, Surface Use and Occupancy Requirements (Appendix 1), and

Conditions of Approval (Appendix 2). These practices will be modified as new and cost effective technologies for cave and karst protection become available.

tanks; Detection Methods

The primary detection method will be the review of BLM or other records on the presence of caves or karst features in the area of interest, in conjunction with a field exam by a BLM employee or cave inventory contractor to determine the presence of unrecorded cave or karst features. Depending on the results of initial detection efforts and a determination of potential significance by the BLM, cave exploration could be employed to gain additional information. As various geophysical techniques are proven useful for cave detection and become generally available for use, they may be the considered on a case-by-case basis as a means of locating unrecorded cave or karst features.

Surface Mitigation

Whether or not a proposed activity has been relocated to reduce potential impacts on caves or karst, surface mitigations will be applied, when needed, to minimize the risk of impacts during construction, drilling or production. Appropriate surface mitigations will be developed during the NEPA analysis of a proposal and in could include one or more of the following practices, most of which have long been employed to mitigate impacts.

Practices to minimize potential impacts from reserve pit spills or leakage:

- The use of a closed system or steel tanks;
- Reorientation of the rig and related pit location, while giving consideration to human safety;

Practices to minimize potential impacts from-leaking tanks or pipelines:

- The construction of berms around storage tanks sufficient to contain spills,

in accordance with Conditions of Approval (Appendix 2);

- The installation of leak detection systems for pipelines or
- The use of permanent liners in storage tank areas;
- The use of differential pressure shut-off valves;
- The use of corrosion-inhibiting coatings and cathodic protection.

Practices to minimize the potential impacts of vented or escaping gases settling in caves:

- The flaring or venting of gas to protect human safety and to better disperse gases and eliminate possible gas ignitions;
- The use of stock tank vapor recovery systems.

Subsurface Mitigation

Applicable and reasonable subsurface mitigations will be applied where the presence of caves or karst is obvious or expected, based on the results of detection efforts, and lost circulation zones. The options could include, but are not limited to, the following practices.

Drilling:

- Cable tool drilling techniques will be used when possible in areas where encounters of caves or karst are expected at depths not greater than 350 feet.
- Rotary drilling techniques in cave or karst areas will include the use of either fresh water mud, foam, or compressed air as a circulating medium in zones where caves or karst are expected. Below those zones, the operator may use whatever drilling fluid is

appropriate.

Casing and Cementing:

- All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run according to American Petroleum Institute and BLM standards.
- A "cave protection" casing could be required in instances when a designated significant cave would be jeopardized. The cave-protection casing string would be set at least 100 feet below the deepest known cave-bearing zone as determined by drilling or other pertinent methods.
- Regardless of the type of drilling machinery used, if bit drops of four feet or more and circulation losses greater than 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be notified by the Operator. The BLM will assess the consequences of the situation and work with the Operator on corrective actions to resolve the problem. If corrective actions fail, the well will be plugged.
- The casing will be cemented in place using one or a combination of any of the following methods that are environmentally sound, as determined by the BLM and the Operator:
 1. If a large void or severe lost circulation zone is encountered, isolation from above and below rather than complete cement coverage of these zones could be employed. This would be accomplished by using stage cementing equipment, external casing packers, cement baskets, and one-inch remedial cementing techniques.
 2. For a less severe lost circulation zone encountered while drilling, the operator

would attempt to circulate cement to the surface using a single or multistage cementing job composed of a "lead" and "tail" slurry for each stage.

3. Foam cementing techniques may be used.

Any corrective actions proposed to resolve problems related to bit drops or lost circulation will require BLM concurrence before implementation. A decision on how to proceed will be reached within 24 hours of notification.

MONITORING DRILLING OPERATIONS

Where the presence of significant caves or significant karst features are obvious or expected based on the results of detection efforts, and in lost circulation zones, constant monitoring of drilling operations by the BLM could be required.

MONITORING PRODUCTION OPERATIONS

On wells within one-half mile of significant caves, annual pressure tests will be performed by the Operator on all casing annuli. If the test results indicated a casing failure, remedial actions approved by the BLM will be undertaken to correct the problem.

PLUGGING AND ABANDONMENT

The BLM standards for plugging and abandonment in Onshore Oil and Gas Order NO.2 will be applied to protect or isolate all useable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, caves, and any prospectively valuable deposits of minerals. This includes any zones encountered during drilling that contain fluids with a potential to migrate.

RECORD KEEPING

The Operator will track the customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops,

APPENDIX 3

percent of mud returns, and presence or absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate, of penetration not attributable to a change in the formation type should be documented and and evaluated as it is encountered.

The BLM may review data held by companies BLM on wells drilled in cave or karst areas, to gain information about impacts to caves and karst. This information will be used to categorize lost-circulation zones on the basis of depth, relative volume, and severity, and to evaluate and

compare the relative success or failure of different remedies attempted to combat lost-circulation problems while drilling and cementing casing in these zones. This information also will be used to update information about the occurrence of cave

"karst features. Information concerning cave resources gathered during drilling will be submitted, as well, to be retained by the

in accordance with the Roswell District Cave Management Plan and the regulations implementing the Federal Cave Resources Protection Act.

APPENDIX 4
RESULTS OF SECTION 7 CONSULTATION
CARLSBAD RESOURCE AREA

This appendix lists results of consultation with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act.

TABLE A4-1

LIST OF DOCUMENTS IN APPENDIX 4

Document

1. Table A4-2, Federally Listed Species Occurring or Potentially Occurring in the Carlsbad Resource Area
2. Table A4-3, State-Listed Species Occurring or Potentially Occurring in the Carlsbad Resource Area
3. Table A4-4, BLM Sensitive Species Occurring or Potentially Occurring in the Carlsbad Resource Area
4. Biological Assessment
5. Biological Opinion
6. BLM response to the Biological Opinion

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**TABLE A4-2
FEDERALLY LISTED SPECIES OCCURRING
OR POTENTIALLY OCCURRING IN THE CARLSBAD RESOURCE AREA**

Common Name	Scientific Name	Status
Mammals		
Black-footed ferret	<i>Mistela nigripes</i>	FE
Swift fox	<i>Vulpes velox velox</i>	FC
Birds		
Bald eagle	<i>Haliaeetus leucocephalus</i>	FT
American peregrine falcon	<i>Falco peregrinus</i>	FE
Northern aplomado falcon	<i>Falco femoralis</i>	FE
Interior least tern	<i>Sterna antillarum athalassos</i>	FE
Mountain plover	<i>Charadrius montanus</i>	FC
Baird's sparrow	<i>Ammodramus bairdii</i>	FC
Southwestern willow flycatcher	<i>Empidonax trailli extimus</i>	FE
Mexican spotted owl	<i>Strix occidentalis lucida</i>	FT
Brown pelican	<i>Pelecanus occidentalis</i>	FE
Fish		
Pecos bluntnose shiner	<i>Notropis simus peconsensis</i>	FT
Pecos pupfish	<i>Cyprinodon pecosensis</i>	FC
Pecos gambusia	<i>Gambusia nobilis</i>	FE
Invertebrates		
Pecos assiminea snail	<i>Assiminea pecos</i>	FC
Plants		
Lee's pincushion cactus	<i>Coryphantha sneedii</i> var. <i>leei</i>	FT
Kuenzler's hedgehog cactus	<i>Echinocereus fendleri</i> var. <i>kuenzleri</i>	FE
Lloyd's hedgehog cactus	<i>Echinocereus lloydii</i>	FE
Gypsum wild buckwheat	<i>Eriogonum gypsophilum</i>	FT

Note: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate, Category 1.

Source: BLM files, 1996.

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**TABLE A4-4
STATE-LISTED SPECIES OCCURRING
OR POTENTIALLY OCCURRING IN THE CARLSBAD RESOURCE AREA**

Common Name	Scientific Name	Status
Mammals		
Guadalupe southern pocket gopher	<i>Thomomys umbrinus guadalupensis</i>	SE
Birds		
Bald eagle	<i>Haliaeetus leucocephalus</i>	ST
American peregrine falcon	<i>Falco peregrinus</i>	SE
Common black-hawk	<i>Buteogallus anthracinus</i>	ST
Northern aplomado falcon	<i>Falco femoralis</i>	SE
Interior least tern	<i>Sterna antillarum athalassos</i>	SE
Bell's vireo	<i>Vireo bellii</i>	ST
Gray vireo	<i>Vireo vicinior</i>	ST
Varied bunting	<i>Passerina versicolor</i>	ST
Baird's sparrow	<i>Ammodramus bairdii</i>	ST
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	ST
Mexican spotted owl	<i>Strix occidentalis lucida</i>	SE
Brown pelican	<i>Pelecanus occidentalis</i>	SE
Neotropic cormorant	<i>Phalacrocorax brasilianus</i>	ST
Common ground-dove	<i>Columbina passerina</i>	SE
Broad-billed hummingbird	<i>Cynanthus latirostris</i>	ST
Reptiles		
River cooter	<i>Pseudemys concinna</i>	ST
Blotched water snake	<i>Nerodia erythrogaster</i>	ST
Arid land ribbon snake	<i>Thamnophis proximus</i>	ST
Mottled rock rattlesnake	<i>Crotalus lepidus lepidus</i>	ST
Sand dune lizard	<i>Sceloporus arenicolus</i>	ST
Fish		
Pecos bluntnose shiner	<i>Notropis simus pecosensis</i>	ST
Pecos gambusia	<i>Gambusia nobilis</i>	ST
Pecos pupfish	<i>Cyprinodon pecosensis</i>	ST
Greenthroat darter	<i>Etheostoma lepidum</i>	ST
Bigscale logperch	<i>Percina macrolepida</i>	ST
Mexican tetra	<i>Astyanax mexicanus</i>	ST
Gray redhorse	<i>Moxostoma congestum</i>	ST
Blue sucker	<i>Cycleptus elongatus</i>	SE

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**TABLE A4-4
STATE-LISTED SPECIES OCCURRING
OR POTENTIALLY OCCURRING IN THE CARLSBAD RESOURCE AREA**

Common Name	Scientific Name	Status
Invertebrates		
Pope's mussel	<i>Popenaias popei</i>	SE
Ovate vertigo	<i>Vertigo ovata</i>	ST
Pecos spring snail	<i>Fontelicella pecosensis</i>	ST
Noel's amphipod	<i>Gammarus desperatus</i>	SE
Pecos assiminea snail	<i>Assiminea pecos</i>	SE
Plants		
Scheer's pincushion cactus	<i>Coryphantha scheeri</i> var. <i>scheeri</i>	SE
Lee's pincushion cactus	<i>Coryphantha sneedii</i> var. <i>leei</i>	SE
Threadleaf false carrot	<i>Aletes filifolius</i>	SS
Chapline's columbine	<i>Aquilegia chaplinei</i>	SE
Gypsum milkvetch	<i>Astragalus gypsodes</i>	SE
Kuenzler's hedgehog cactus	<i>Echinocereus fendleri</i> var. <i>kuenzleri</i>	SE
Lloyd's hedgehog cactus	<i>Echinocereus lloydii</i>	SE
Button cactus	<i>Epithelantha micromeris</i>	SE
Gypsum wild buckwheat	<i>Eriogonum gypsophilum</i>	SE
Prairie gentain	<i>Eustoma grandiflora</i>	SE
Catchfly gentain	<i>Eustoma exaltatum</i>	SE
McKittrick pennyroyal	<i>Hedeoma apiculatum</i>	SE
Crested coral-root	<i>Hexalectris spicata</i>	SE
Gypsum blazing star	<i>Mentzelia perennis</i>	SS
Guadalupe milkwort	<i>Polygala rimulicola</i> var. <i>rimulicola</i>	SE

Note: SE = State Endangered; ST = State Threatened; SS = State Sensitive

Source: BLM files, 1996.

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**TABLE A4-4
BLM SENSITIVE SPECIES OCCURRING
OR POTENTIALLY OCCURRING IN THE CARLSBAD RESOURCE AREA**

Common Name	Scientific Name	Status
Mammals		
Cave bat	<i>Myotis velifer brevis</i>	FC2
Yuma myotis	<i>Myotis yumanensis</i>	FC2
Long-eared myotis	<i>Myotis evotis</i>	FC2
Fringed myotis	<i>Myotis thysanodes</i>	FC2
Long-legged myotis	<i>Myotis volans</i>	FC2
Townsend's big-eared bat	<i>Plecotus townsendii</i>	FC2
Big free-tailed bat	<i>Nyctinomops macrotis</i>	FC2
Western small-footed myotis bat	<i>Myotis ciliolabrum</i>	FC2
Gray-footed chipmunk	<i>Tamias canipes</i>	FC2
Arizona black-tailed prairie dog	<i>Cynomys ludovicianus arizonensis</i>	FC2
Pecos River muskrat	<i>Ondatra zibethicus ripensis</i>	FC2
Birds		
White-faced ibis	<i>Plegadis chihi</i>	FC2
Fulvous whistling duck	<i>Dendrocygna bicolor</i>	FC2
Northern goshawk	<i>Accipiter gentilis</i>	FC2
Ferruginous hawk	<i>Buteo regalis</i>	FC2
Black tern	<i>Chlidonias niger</i>	FC2
Burrowing owl	<i>Speotyto cunicularia hypugaea</i>	FC2
Reptiles		
Texas horned lizard	<i>Phrynosoma cornutum</i>	FC2
Fish		
Plains minnow	<i>Hybognathus placitus</i>	FC2
Rio Grande shiner	<i>Notropis jemezianus</i>	FC2
Headwater catfish	<i>Ictalurus lupus</i>	FC2

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TABLE A4-4
BLM SENSITIVE SPECIES OCCURRING
OR Potentially OCCURRING IN THE CARLSBAD RESOURCE AREA

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Plants		
Tharp's bluestar	<i>Amsonia tharpii</i>	FC2
Guadalupe smooth aster	<i>Aster laevis</i> var. <i>guadalupensis</i>	FC2
Shining coral-root	<i>Hexalectris nitida</i>	FC2
<u>Wright's water-willow</u>	<u><i>Justicia wrightii</i></u>	<u>FC2</u>

Note: FC2 = Federal Candidate Category 2. These species were listed as FC2 by the U.S. Fish and Wildlife Service, but are no longer considered candidate species. The BLM has included these former FC2 species into a statewide BLM sensitive species list.

Source: BLM files, 1996



IN REPLY REFER TO:

6500 (067)

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

CARLSBAD RESOURCE AREA
620 E GREENE STREET
CARLSBAD NM 88220-6292

JUL 03 1996

Memorandum

To: Field Supervisor, NM Ecological Services,
U.S. Fish and Wildlife Service, Albuquerque, NM

From: Area Manager, Carlsbad, NM

Subject: Biological Assessment

The Bureau of Land Management, Roswell District, Carlsbad Resource Area Office has updated the Biological Assessment (BA) for our Resource Management Plan, and ongoing site specific activities regarding Category 1 and listed species. After working with your staff to incorporate their suggestions, and all the necessary requirements, we feel our BA is very adequate.

In accordance with the consultation procedures outlined in Section 7 of the Endangered Species Act (ESA), we submit the enclosed BA for your concurrence. We respectfully ask that you review the document and concur or respond by July 9, 1996.

If you have any questions or need additional information please contact John Sherman of my staff at (505) 887-6544.

/s/ TIMOTHY J. BURKE

Enclosure

1 - Biological Assessment

cc:

NM-060
NM-931

APPENDIX 4 Biological, ASSESSMENT
UPDATE FOR
CARLSBA.D RESOURCE AREA
RESOURCE MANAGEMENT PLAN/SITE SPECIFIC ONGOING ACTIVITIES

Prepared by:

U.S. Department of the Interior
Bureau of Land Management Roswell
District Office Carlsbad Resource
Area

July 1996

APPENDIX 4

Introduction

The Bureau of Land Management (BLM) is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American public. Management is based upon the principles of multiple use and sustained yield: a combination of uses that takes into account the long-term needs of future generations for renewable and non-renewable resources.

The Carlsbad Resource Area (CRA) encompasses about 6.4 million surface acres of all ownerships. There are about 2.2 million acres where both the surface and subsurface is in federal ownership and an additional 1.9 million acres of federal minerals underlying other surface ownerships. Eddy and Lea counties and the southwest "bootheel" portion of Chaves county comprise the CRA (see Map 1).

purpose and Need

In 1988, the BLM, Roswell District, CRA completed its Resource Management Plan (RMP). This plan provided a comprehensive framework for managing the public lands and for allocating resources in the CRA for up to twenty years. In addition, a biological assessment (BA) was completed in conjunction with the RMP as a requirement of the Endangered Species Act. However, as the listing of species as Threatened or Endangered is extremely dynamic, there is a need to update the existing biological assessment to include newly listed species, and to amend the status of other species.

As with the existing BA, this amendment is intended to meet the requirements set forth in the Endangered Species Act, and amendments thereof, for BLM authorized activities proposed in the Carlsbad RMP/EIS. Potential effects to Federally listed threatened, endangered, and candidate (Category 1) species from RMP actions and site specific ongoing activities or projects including grazing, oil and gas development, and recreational activities were reviewed and are addressed.

Since the completion of the CRA RMP in 1988, 14 species have been designated as category 1 candidates, proposed endangered, threatened, endangered, or have had a change in status. This amended biological assessment will address the impacts of activities in the RMP on those 14 species, as well as the species currently listed and addressed in the existing biological assessment.

The following species were addressed in the 1988 RMP biological assessment under their current listed status. New information concerning the biological status of the Gypsum wild buckwheat has been incorporated into this analysis.

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Black-footed ferret
American peregrine falcon
Bald eagle
Pecos gambusia
Gypsum wild buckwheat
Kuenzler's hedgehog cactus
Lee's pincushion cactus
Lloyd's hedgehog cactus

The following species are newly listed, or have had a change of listing status since the completion of the RMP according to the current consultation list #2-22-95-1-518.

Swift fox
Arctic peregrine falcon
Brown pelican
Interior least tern
Mexican spotted owl
Mountain plover
Northern aplomado falcon
Southwestern willow flycatcher
Arkansas River shiner
Pecos bluntnose shiner
Pecos pupfish
Koster's tryonia
Pecos assiminea snail
Puzzle sunflower

BLM Resource Programs

Public land resources managed by the BLM in the CRA include oil and gas, potash, and various other mineral commodities; rangeland resources including livestock~: forage, watersheds, wildlife habitat, wetland/riparian areas, natural caves and other natural habitat features; cultural resources; and a variety of outdoor recreation activities. With the exception of the cultural program, a summary description of all resource~ programs within the CRA is listed below.

oil and Gas Program:

The oil and gas industry is well established in the area, with producing oil and gas fields, support services, refineries, and gas compressor stations. All phases of oil and gas activities have occurred in the resource area, including geophysical exploration, exploratory drilling, field development, production, and oil refining.

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Most of the CRA has high or moderate potential for the occurrence of oil and gas as depicted in Map 2. The high potential areas are those areas now producing oil and gas or which have high industry interest. Moderate potential areas are those areas which have had oil and gas shows in favorable geologic environments. Low potential areas are those areas where the geologic environment is unfavorable or where little or no information is available. Although oil and gas development is scattered throughout the resource area, there are areas of higher concentration of development and surface disturbance. These areas are shown on Map 3.

During the period of 1904 to 1991, 35,702 federal, state and fee wells were drilled in the CRA. As of March 21, 1995, there were 4,671 Federal leases in effect in the CRA, covering approximately 1.9 million acres.

Total projected disturbed acreage by the end of 1997 from all federal drilling activity will be 41,573 acres. Since approximately one-third of subsurface minerals are non-federal, cumulative disturbed acreage in the resource area from drilling federal, state and fee wells could be expected to increase proportionately by one-third to approximately 55,292 acres. This surface disturbance would continue as long as the wells are producing and until reclamation has occurred.

Currently there are several Notice To Leasees (NTL) for oil and gas development. These include the netting of pits, and the placing of caps over exhaust stacks on heater-treater/separator/dehydrator units to prevent entry to birds and bats. In addition, there are a number of standard operating Conditions of Approval (COA) which are also attached to each and every application for drilling (Appendix 1). Overall leases can also have specific stipulations attached (Appendix 3).

Lands and Realty Program:

The CRA currently has about 6,200 active rights-of-way (ROW) managed under its realty program. Presently, about 91,700 acres of public land are affected by existing ROWs. Approximately 500 to 600 oil and gas related ROWs are issued by the resource area each year. The majority of ROWs are issued for either roads, pipelines, or powerlines, but not all ROWs are related directly to oil and gas activity. Predominantly, ROWs are issued for a 30 year period, but they can be issued for as long as is necessary to meet the objective of the ROW. As the oil and gas industry is the main applicant for ROWs within the CRA, 30 years is approximately the life of an oil or gas well and thus, is generally the length of time a ROW is needed. Once ROWs are no longer needed, they are relinquished back to the BLM. Relinquishment procedures vary depending on the type of ROW. For buried pipeline ROWs, the

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requirements include disconnecting both ends of the pipeline, flushing with fresh water., removing all vents, risers, etc., capping both ends of the pipeline and reclamation of the ROW if reclamation has not already occurred. Surface pipeline ROW relinquishment includes removal of the pipeline and ensuring reclamation efforts are successful. Powerline ROW relinquishment includes removal of poles within 180 days and ensuring reclamation efforts have been successful. Road ROWs are disked, bermed and reseeded with a seed mixture native to the associated ecosystem. Caliche material associated with any ROW is either removed totally and a seed mixture native to the area is sowed, or the caliche and native soils are disked together and a seed mixture consisting of four-wing saltbush, blue and sideoats gramma, plains bristlegrass, and alkali sacaton is planted. Reclamation efforts take an average of 1-5 years to replenish vegetative cover, depending on the level of rainfall.

Five ROW corridors, established prior to the RMP, were designated in the CRA RMP to facilitate the future product transportation and sales needs of the oil and gas industry (Map 4). Several ROWs cross the Pecos River. These crossings will be preferred locations for any new river crossings. Raptor proofing of powerlines is also a standard COA for all powerline ROWs (Appendix 1).

As with the existing situation, 500 to 600 oil and gas-related rights-of-way would be expected to be issued over the next year. These rights-of-way would impact roughly an additional 12,300 acres of public land. The total federal surface area included in all rights-of-way through 1997 would be approximately 104,000 acres (not all of which are disturbed).

Potash Program:

There are five companies mining and refining potash in the resource area. All of the refining plants are located on private land with only portions of the mine tailings piles extending onto BLM administered lands. Each company has shafts outlying from the main refining plants. This includes 5 outlying shafts, impacting approximately 150 acres of BLM land.

Each potash company produces thousands of gallons of salt water. Three of the mines have constructed their own salt water holding ponds while the other two mines put their saltwater and sludge into naturally occurring salt lakes (hypersaline lakes/geologic playas)

- They are currently permitted by the Environmental Protection Agency (EPA) to dump into these lakes. However, currently there is a research project being conducted by the National Biological Survey (NBS), National Wildlife Health Center to determine the cause of waterfowl mortality on several of the salt lakes within the area. The title of this project is the "Investigation Into Avian Mortality In the Playa Lakes Region of

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Southeastern New Mexico". The Interim Report (August 1995) from that investigation concludes that the cause of death of the birds found in the study area is salt/sodium toxicity/water deprivation/dehydration. The report also suggests that, based on analysis of the water chemistries, and comparison with reports from other hypersaline environments, that the problem with the study sites may not rest entirely with the nature of the potash discharge, but that creating any permanent hypersaline environment, no matter what the source; may present a risk to wildlife. This could mean that rainfall filling the playas could be a risk to wildlife populations as well.

Grazing program/Grazing Administration:

The CRA contains 268 grazing allotments, which cover approximately 2.19 million acres of public land. There are 265 permittees currently licensed to graze livestock. The current permitted use for the entire resource area is 374,382 animal unit months (AUMs), which is an average of 5~8 acres per AUM. Of the 268 grazing allotments, 58 have either an allotment management plan (AMP) or a coordinated resource management plan (CRMP) in place.

with the exception of some Special Management Areas (SMA) including a portion of the wetland/riparian habitats, all of the public lands administered by the era are allocated for grazing. Those riparian areas currently affected by grazing are intensively managed to curtail adverse impacts to these important areas. Methods of intensive management include, but are not limited to, excluding of livestock thru fencing, development of pipeline/trough systems to draw livestock away from riparian areas and prescribed livestock grazing systems to alleviate year round impacts to riparian areas. The latter generally includes designated winter grazing in riparian areas. Refer to the following "Wildlife/Riparian Programs" section for a list of all riparian areas within the resource area and a summary of the respective improvement projects, and grazing systems for each area/allotment.

Grazing systems in place in the CRA include yearlong (cattle in every pasture all year), rest rotation (1 or more pastures not grazed all year), deferred rotation (1 or more pastures not grazed for a portion of the year), seasonal use (all cattle removed from the allotment for a portion of the year), and holistic resource management (high intensity/short duration grazing use). A list of the approximate acres under each system is as follows :

Yearlong	- 583,500
Rest Rotation	- 676,950
Deferred Rotation	- 676,950
Seasonal	- 110,000
Holistic	- 145,000
Excluded from grazing	- 7,600

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Allowed forage utilization levels generally follow the rule of "take half and leave half", but the CRA has used 45% as the use level on upland sites (all habitat types) since about 1980. Riparian use guidelines are currently being developed in conjunction with the New Mexico Resource Advisory Council.

Range condition, trend and utilization levels are determined using permanent study plots located on upland sites in key areas throughout the grazing allotment. Studies conducted at these plots include three 100 point pace-point transects, 30 clip and weigh plots, and a utilization transect. In addition, photos are taken of the study plot and each 100 point transect line. Range condition is determined by comparing measured vegetation to Range Site descriptions of the key site that were developed by the NRCS. The closer the measured vegetation is to the description, the higher the condition rating. Trend is measured by comparing cover data from the pace-point transects (litter, bare ground, rock, or direct hit on vegetation) over time. If litter and vegetation hits go up and bare ground hits go down, trend is considered to be improving. Composition data from these transects is also analyzed to determine trend. Finally, the photos are used to give a visual indication of trend. Range Condition, by acres, is approximately as follows (1993 data):

Excellent	- 39,600 (1.8%)
Good	- 1,091,200 (49.6%)
Fair	- 996,600 (45.3%)
Poor	- 30,800 (1.4%)
Unclassified	- 41,800 (1.9%)

New BLM grazing regulations which became effective August 21, 1995 describe four 'fundamentals of ecosystem health, which are as follows:

- 1) watersheds are in, or progressing toward, "properly functioning condition."
- 2) Ecological processes are maintained, or progressing toward attainment.
- 3) Water quality meets state standards.
- 4) Habitats for T/E species are either restored, maintained, or improving.

Currently, the New Mexico Resource Advisory Council, established under the new regulations, is developing rangeland standards and livestock grazing guidelines to attain these fundamentals of ecosystem health.

Riparian/Wildlife Programs:

The wildlife program within the era, includes inventory, planning,

implementation of habitat improvement projects, developing mitigative measures focused at curtailing potential impacts from other resource activities, and compliance/monitoring.

Riparian Habitat

The development of a Wetland-Riparian Habitat Management Plan (HMP) in 1989 outlined many specific measures for the improvement and protection of all riparian/wetland communities, and many xeric-riparian communities throughout the resource area. The HMP prescribes management guidance for essentially all riparian habitats within the CRA located on public lands. These areas are listed in Tables 1 and 2. Improvement and protection of these habitat types in turn has improved conditions for the aquatic species associated with these habitat types.

Planning issues for the past five years have focused around the development of a CRMP for the Black River Special Management Area (SMA) and a draft HMP for the East Guadalupe Escarpment. Both plans, early in the development phases, were sent to the USFWS for their input/review. All comments received from the USFWS were incorporated into the respective document. The final East Guadalupe Escarpment HMP will be sent out for review in 1996. The Black River CRMP covers 1240 acres of which 250 acres is riparian or xeric-riparian habitat. The East Guadalupe Escarpment HMP covers all public lands west of the Pecos River within the CRA. This includes approximately 925,000 acres. Within this document, riparian habitat management is not discussed because it is already addressed for the entire resource area within the Wetland-Riparian HMP.

Planning efforts in the future include the Delaware River exchange area and CRMPs for allotments with riparian habitat. Of the 268 designated allotments within the resource area, 25 have either perennial or ephemeral riparian habitat and/or hypersaline lake habitat. Thirteen of the 25 "riparian allotments" have existing plans (AMP/CRMP). These plans outline management of the wildlife/riparian/T&E resources in conjunction with livestock grazing over a specific time period, which is generally 20 years. Following is a summary description of the riparian areas within the resource area, and a Table (Table I) depicting the condition of these riparian areas in 1993.

1) Pecos River--The Pecos river runs from north to south through the resource area covering approximately 105 miles. Of that 105 miles, BLM administers approximately 29 miles including 4 miles north of Carlsbad (includes a portion of Avalon lake) and 25 miles south of Carlsbad. With the exception of two solid parcels south of Carlsbad, one 4 mile stretch and one 6 mile stretch, the rest of the BLM administered acreage along the Pecos river is made up of scattered parcels ranging from 1 mile in length to a couple hundred yards. For example the area Bluntnose shiner designated critical

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habitat consists of three separate parcels, a 1/2 mile segment, a 200 yard segment and a 1/4 mile segment. In addition, some of the scattered parcels only occur on one side of the river and do not straddle the river. Several dams exist on this river within Eddy county including Brantly, Avalon, and Six-Mile which are primarily used for irrigation. Second to irrigation/water rights, recreation and wildlife/fisheries habitat are important values of the river system.

Historically, this river system was lined with cottonwood trees and various willows with an understory of alkali sacaton grass, inland saltgrass and various forbs and shrubs. The river banks are now totally dominated by saltcedar and kochia with the exception of a couple of cottonwood groves just south of Artesia, NM on private land. There still exists some alkali sacaton and inland saltgrass scattered throughout the river corridor. BLM has done some limited saltcedar control (mechanical) on the Pecos River and some planting of cottonwoods. There are ten grazing allotments associated with the Pecos River within the area, as well as the Pecos River Canyons Complex Area of Critical Environmental Concern (ACEC) and the Pecos River corridor Special Recreation Management Area (SRMA). From Malaga bend, which is located in the Pecos River Canyons Complex ACEC 25 miles south of Carlsbad, there exists a geologic structure known as the salt dome. At this point in the river and including the 16 miles of, BLM administered lands below this point, water becomes salty, causing native vegetation reestablishment efforts to be ineffective.

2) Black River--The BLM administers approximately 3.5 miles of the Black River within Eddy County. It is a tributary of the Pecos River and like the Pecos River, irrigation, recreation and wildlife/fisheries habitat are the main uses of the river. Of this 3.5 miles, 3 miles (1240 acres) is included in a parcel that was acquired through a land exchange with the Nature Conservancy (TNC). This parcel has been fenced, totally excluded from livestock grazing and designated as a Special Management Area (SMA). It encompasses the headwaters and 3 miles of riparian habitat which is in extremely pristine condition. The area has a very good population of cottonwoods and willows as well as a diverse makeup of grasses, forbs and shrubs. A complete list of vegetative species and animal species is contained in a biological inventory which is available upon request in the CRA office. Numerous research projects are being conducted within this area including river cooter/plain-bellied water snake inventories and life history investigations, Rio Grande turkey releases, breeding bird surveys, and herpetofauna inventories.

The additional half mile of the Black River administered by the BLM is downstream of the headwaters approximately 12 miles. This portion is affected by saltcedar encroachment although there is still a good representation of native riparian vegetation including cottonwoods/willows, sedges and rushes, baccharis and alkali

sacaton grass. This half mile stretch of river includes two separate 1/4 mile parcels, each of which is bordered up and down stream by private lands. There is approximately 2 miles of river between the parcels. One grazing allotment is associated with these portions of the Black River.

3) Delaware River--The Delaware River lies in the southern portion of the resource area and is also a tributary of the Pecos River. It originates in Texas and flows into New Mexico 4 miles west of the Pecos, TX highway border crossing. The river corridor is dominated by saltcedar, but there are also good populations of cottonwoods and willows in the upper reaches.

Over the past two years, the BLM has been negotiating on a land exchange for the entire 9 mile stretch of the Delaware River. Currently, the BLM is finalizing the acquisition of all of the river corridor as well as some 208 acre feet of water rights. Upon completion of the acquisition, the BLM will develop a plan focused at maintaining and improving the riparian system. There are 2 grazing allotments 'associated with this river, but the acquired lands along' the river are not allocated for livestock grazing within these allotments. One alternative under consideration in the plan will be fencing of the entire acquisition to exclude livestock.

4) Gypsum/karst Springs-Ben Slaughter, . Cottonwood, Owl east and west, Preservation, Yeso, Hackberry--These springs are located in the gypsum-karst terrain in the southern portion of the resource area. All of these springs are made up of a single pool or series of isolated pools with some downstream flow in incised channels below spring. Dominant vegetation includes alkali sacaton, seep willow, littleleaf sumac, occasional hackberry and gooding willow, and various gypsophilic forbs and grasses such as coldenia and gyp grama. Currently, Ben Slaughter spring is the only one of these springs fenced from livestock and is also the location of the CP Hill Gypsum buckwheat population. However, the CRA Riparian-Wetland HMP prescribes fencing of both Owl springs, Cottonwood spring, and Preservation spring. In addition, during 1996 a new pipeline/trough system will be constructed in allotment #8108 to draw livestock away from Cottonwood Draw downstream from the spring and Preservation spring. These additional water sources (troughs) will be much more heavily used by livestock due to the quality of water coming from the well vs the water quality in the springs. Water in all of the springs within the gypsum soils area is somewhat brackish.

5) Limestone Springs and Seeps-Stetson seep, Bogle seep, Walt spring, Wadcutter spring--These springs are located on the west side of the resource area within the limestone hills of the east escarpment of the Guadalupe mountains. They are located in canyon bottoms, and have less than 1/10th of an acre of associated riparian habitat. Dominant vegetation includes netleaf hackberry,

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littleleaf sumac, desert walnut, Carex app. and various forbs and grasses. With the exception of Walt spring, these springs/seeps are wet weather springs and often are dry. Currently, Walt spring is a seep and the rest are dry.

6) Ephemeral Playas--Scattered throughout the resource area are playa lake basins that catch runoff rainfall predominantly during the late summer/early fall months. However, the majority have not caught water for the last two years due to the prevailing drought situation. These ephemeral lakes vary in size from less than an acre to over 100 acres. The resource area contains possibly 150 of these playas. Generally there are some trees/shrubs associated with the playas including netleaf hackberry, soapberry, mesquite and littleleaf sumac. Dominant herbaceous species include tobosa, vine mesquite and plains bristlegass. Once rainfall prevails, a variety of forbs such as prairie cone flower and moss rose are numerous. Those playas that do have adequate nesting and roosting structure in the form of trees receive substantial use from Great blue herons, neotropical migrants and raptors throughout the nesting season. Approximately 45 acres of playas are currently fenced on public lands (BLM administered), of which all contain nesting/roosting habitat for the previously mentioned avian species. In summer' of 1996, three additional playas will be fenced adding an additional 15 acres to the total fenced acreage.

7) 'Hypersaline lakes or Geologic Playas--According to the "Investigation of Avian Mortality In The Playa Lakes Region ,of Southeastern New Mexico" literature Review (Sept. 1995), a geologic playa is an ephemeral lake feature found within deserts. They contain a natural accumulation of salts and other evaporite minerals (such as gypsum and calcite) because of the high rates of evaporation in the areas in which they form. Sheetwash or channeled water flowing into a playa is quick to dissolve any soluble minerals which it flows over. As the water within a playa evaporates, it becomes more highly concentrated until the evaporate minerals precipitate out. As mentioned previously in the "Potash Program" section of this document, some of these geologic playas (salt lakes) have or are receiving Potash disposal ,water. The playa lakes may dry up during the summer' months when evaporation/evapotranspiration rates exceed disposal/precipitation rates. During the winter, however, they commonly contain standing water. As depicted: on the Jal and Hobbs color quads, these geologic playas occur within two general areas of the resource area--Nash Draw and Clayton Basin.

Dominant vegetation around 'these playas includes pickel weed, alkali sacaton, coldenia and saltcedar.

Riparian Condition

In 1993, the BLM implemented a new process for the evaluation of all riparian areas. This process incorporates "proper functioning

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condition analysis criteria" including hydrologic, vegetative and erosion deposition. Based on the evaluated criteria, the riparian area is placed in one of four categories. These include:

Proper Functioning Condition - an area with adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high waterflows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity.

Functional - At Risk - Riparian-wetland areas that are in functional condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

Non-functional - Riparian-wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to dissipate stream energy associated with high flows and thus are not reducing erosion, improving water quality, etc., as listed above. The absence of certain physical attributes such as a floodplain where one should be are indicators of nonfunctioning conditions.

Unknown- riparian-wetland areas that BLM lacks sufficient information on to make any form of determination.

BLM further assigns trend ratings to areas in the Functioning at Risk category; trend up, trend not apparent, trend down.

Table 1 Riparian
Condition Status

<u>Riparian Area</u>	<u>Condition Status of Riparian Area</u>
Pecos River	Functioning At Risk/Nonfunctional <u>Factors</u> : Flood control dams, Irrigation, Saltcedar infestation, Historic overgrazing, oil and gas, absence of beaver dams, no vegetative diversity
Black River	Proper Functioning Condition
Delaware River	Unknown
Walt Spring	Functioning At Risk <u>Factors</u> : Historic and Present day grazing, oil and gas development
Wadcutter Spring	Functioning At Risk
Bogle Seep	-- " "
Stetson Seep	-- " "
	<u>Factor</u> : Grazing, encroachment of desert succulents and juniper
Ben Slaughter Spring	Proper Functioning Condition
Cottonwood Spring	Proper Functioning Condition
Preservation Spring	Proper Functioning Condition
Owl Spring east	Functioning At Risk <u>Factor</u> : Grazing, Saltcedar infestation
Owl Spring west	Functioning At Risk <u>Factors</u> : Grazing
Yeso Spring	Proper Functioning Condition

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Table 2 lists the grazing allotments, the associated riparian areas, whether there is an existing plan, and type of grazing system practiced.

Table 2
Riparian Allotment Information

<u>Allot #</u>	<u>Riparian Area Associated</u>	<u>Riparian Acres</u>	<u>Plan y/n</u>	<u>Grazing System</u>	<u>Riparian Improvements</u>
6022	*Laguna Toston	40	y AMP	Deferred	No
7012	**Walters lake	10	y AMP	Holistic	No
7013	**Hackberry lake	30	y AMP	Deferred	No
	*Willians Sink	200	y AMP	"	No
7031	Pecos River	36.4	y AMP	Deferred	No
7036	Pecos River	6.1	y AMP	Seasonal	No
7040	**Park Lake	7.0	y AMP	Deferred	Fenced
	**China Tank	3.0	y AMP	"	Fenced
8087	Black River	2.4	y AMP	Deferred	No
8097	**Queen Lake	90	y CRMP	Yearlong	Yes
	Pecos River	15	y CRMP	"	Fenced
8103	Owl Sprg east	.7	y CRMP	Deferred	Rip. Pasture Saltcedar Control
				"	
8106	Cottonwood Sprg	1.0	y CRMP	Holistic	No
	Preservation Sprg	2.7	y CRMP	"	No
	Black River	.5	y CRMP	"	No
8107	Owl Sprg east	2.0	y CRMP	Deferred	Planned Fence
	Owl Sprg west	1.0	y CRMP	"	No
8144	Hackberry Sprg	1.8	y CRMP	Rest-Rot.	
8146	Walt Sprg	.25	y CRMP	Deferred	No
8142	Delaware River	200	N	Yearlong	CRMP Planned
8141	Delaware River	127.3	N	Yearlong	CRMP Planned
	Pecos River	48.5	N	"	No
8108	Ben Slaughter Sprg	1.8	N	Yearlong	Fenced
	Cottonwood Draw	4.4	N	"	No
8122	Yeso Sprg	.25	N	Yearlong	No
8115	Stetson Seep	.25	N	Yearlong	No
7037	Pecos River	45.5	N	Deferred	No
7035	Pecos River	3.0	N	Yearlong	No
8098	Pecos River	4.5	N	Yearlong	No
8099	Pecos River	6.0	N	Yearlong	No
7005	Pecos River	4.5	N	Yearlong	No
7006	Pecos River	3.0	N	Yearlong	No
7018	Pecos River	12.0	N	Yearlong	No
8080	Bogle Seep	.25	N	Yearlong	No

*Hypersaline lake

**ephemeral playa

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Wildlife Habitat Improvement Program

Habitat improvement measures are generated through the Sikes Act Habitat Improvement Program and the range improvement program. Projects include wildlife watering units, playa lake exclosures, spring improvement projects, prescribed burns, cottonwood plantings, and soil erosion structures.

More specifically, the Sikes Act program, since 1987 to date, has funded 30 wildlife watering units constructed totaling \$100,000.00, 37 acres of playas fenced totaling approximately \$20,000.00, riparian work (Le. fencing, erosion control, cottonwood planting, saltcedar control, etc.) totaling \$12,000.00, 20,000 acres of prescribed burn totaling approximately \$50,000.00, and aerial game surveys totaling \$25,000.00. Predominantly, these projects are focused at game species as the program is totally funded by hunters, fishermen and trappers. Nevertheless, all species of wildlife benefit from the additional water sources, and fenced playas and riparian areas. Prescribed burns improve not only forage for big game, but also cover and forage for ground nesting birds. Burns also improve the overall watershed which in turn frees up additional water for springs and seeps, and riverine systems.

Range projects are funded through 8100 funds derived from grazing fees. Projects funded through thl9 8100 program include range fences, wells, pipeline/trough systems, water storage tanks, herbicide use on various brush species, cattleguards, erosion control projects, exclosures and prescribed burns. Over the past 4 years. an average of 15 projects per year of these various

Table 3

Range Improvements for the CRA from 1993 to Present

<u>Project Type</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Fences (miles)	3.5	14.0	15.5	20.0
Pipeline/Troughs (miles)	11.0	9.5	11.5	15.5
Vegetative Treatments (ac) (Burns, Herbicide)	6600	1500	6000	3900
Water Wells			1	2
Playa exclosures (ac)				15

The various types of range improvements constructed throughout the Resource Area have specific stipulations attached (Appendix 2).

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Through various stipulations and mitigation measures developed through the RMP for oil and gas development, grazing and recreational activities, terrestrial wildlife ,habitat condition has remained stable and in some areas has steadily improved. The development and subsequent implementation of Habitat Management Plans (HMP) , AMPs and CRMPs has improved the sensitive, xeric riparian and riparian habitats. Surveys, monitoring and restrictive stipulations on various actions have' ensured maintenance of the improved habitat conditions for species listed as T&E since the RMP was developed.

Special Management Areas

The establishment of Special Management Areas (SMA) including Areas of Critical Environmental Concern (ACEC), and Research Natural Areas (RNA) has helped to maintain and improve habitat conditions for a variety of terrestrial wildlife types. In addition, the designation of Access and RNAs associated with riparian habitats has also provided, protection ,for many aquatic and riparian obligate species. All of the riparian/wetland habitats managed by the BLM have been 'included in the HMP and/or have been designated as a SMA.

SMAs for the CRA are included in Table 4 below.

Table 4

SMAs For The Carlsbad Resource Area

<u>SMA</u>	<u>Acres</u>	<u>Purpose</u>
Seven River Hills	540	T&E-Gypsum Buckwheat
Caves SRMA	8,450	Protect scenic and natural value of caves
Chosa Draw ACEC	2,200	Riparian/Caves
South Texas Hill Canyon RNA	1,360	T&E/Wildlife Habitat
Dark Canyon ACEC	1,480	T&E,Caves, Natural Resource Values
Dark Canyon Scenic Area	3,220	Scenic Values
Lonesome Ridge ACEC	2,990	Natural Values
Springs/Riparian Habitat SMAs	524	Ben Slaughter Sprg Cottonwood Sprg Preservation Sprg Blue Sprg Owl Sprgs (2) Bogle Seep
Blue Springs ACEC	160 ac-Minerals	T&E,Riparian-Pecos Gambusia
Yeso Hills	560	Chihuahuan desert system
Bluntnose Shiner Habitat	200	Bluntnose Shiner Critical Habitat/Riparian
Little McKittrick Draw HMA	10	McKittrick ramshorn snail (dropped from listing)

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Laguna Plata	3,360	Archaeological resources
Potash Bull Wheel	4	Historic structure
Poco Site	51	Prehistoric site
Pecos River/ Canyons Complex ACEC	5,190	Riparian, Archaeology, Canyon ecosystem
Pope's Well	40	Historic site
Guadalupe Escarpment Scenic Area	49,570	Scenic values
Alkali Lake ORV Area	900	Recreation
Hackberry Lake ORV Area	55,800	Recreation
Pecos River Corridor	6,000	Water based Recreation

Appendix 4 summarizes the management prescriptions for each of these SMAs.

standard Operating Procedures. Stipulations and Mitigation Measures
Standard conditions of approval, Notice to Lessees (NTL), stipulations and various other mitigative measures which are placed on oil and gas leases and operations, and which were developed through the RMP and/or taken from various laws and orders, have significantly reduced the impacts of oil and gas development on terrestrial wildlife habitat.

Standard operating procedures have been established to avoid creating any threat to Federal or State listed T&E species and/or to any other important resource values. Appendix 1 and 2 contain the standard Conditions of Approval and standard operating procedures used in the CRA. Site by site analysis, consultation and avoidance has occurred in any area where a potential threat may have occurred to a special status species.

1. A threatened, endangered, State-listed, or notice of review species clearance would be conducted by an appropriate BLM staff biologist or contract specialist at the beginning of any project. If a "may affect" determination is made by the staff biologist or specialist, consultation would be undertaken with U.S. Fish and wildlife Service (USFWS), New Mexico Department of Game and Fish (NMDGF), or the New Mexico Energy, Minerals and Natural Resources Department, Forestry and Resources Conservation Division depending on the listing of the species which may be affected. The results of the consultation would determine the course of action necessary to avoid adverse effects on a listed specie (s).

Since 1989, an average of 500 EA reviews/T&E clearances per year have occurred. of those, possibly two were "may adversely affect" situations. However, the "may affect" call on improvement of La road going through the designated Gypsum wild buckwheat critical

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habitat was curtailed through developing an alternative in the EA requiring a different route which was outside of Buckwheat potential habitat. This alternative was chosen by the authorized officer. The other situation was disposal of oil and gas produced brine water into various Lagunas. The EPA halted all disposal of oil and gas produced water into, these Lagunas. Otherwise, all other actions were categorized as "no effect" or "not likely to adversely effect". The latter categorization is due to beneficial effects to a species or its habitat.

2. All areas on public land meeting riparian and wetland habitat criteria have been assessed to determine what protection is needed to provide for wildlife and T&E habitat needs. Protection measures selected for individual situations include protective fencing, adjustments in livestock use, establishment of buffer zones, and/or "no leasing" or No Surface Occupancy (NSO) for oil and gas development. Refer to "Grazing Program" section and "Riparian Habitat" section for baseline information on riparian areas within the RA.

3. Application of herbicides is in conformance with BLM. Manual 9220 and the State of New Mexico and U.S. Environmental Protection Agency (USEPA) standards. Only those herbicides authorized by the USEPA, the New Mexico Department of Agriculture (NMDA), and the Department of the Interior are proposed for use, and must be registered by the USEPA and NMDA. NMDA restricted use 'regulations are consulted prior to any herbicide application.

4. The permitting process for conducting biological research within the CRA on T&E species or otherwise includes development 'of a contract/cooperative agreement which lines out specific work requirements, data collection requirements and protocol to be adhered to during the research efforts.

Important wildlife habitat, such as broad leaf tree groves, aquatic, riparian, xeric-riparian and wetland sites, heronries, earthen tanks, and watering facilities (both livestock and wildlife) are protected (designated leave out or buffer areas) during brush control operations. They are protected through the establishment of buffer zones around these resources and/or other means as deemed appropriate by resource specialists. '

From 1972 to the present, there have been 138,968 acres of brush treatment including 116,804 acres of herbicide application, 22,164 acres of prescribed fire and 5 acres of mechanical treatment. Herbicides (Tebuthiuron, Arsenol, Reclaim, Grazon ET, etc.) have been applied to 64,982 acres of shinnery oak (Quercus havardii), 45,972 acres of mesquite (Prosopis glandulosa), 3,850 acres of acacia and mimosa, and 2,000 acres of broom snakeweed. Currently, all use of herbicide on shinnery oak has ceased, and all herbicide treatment effort~ on the west side of the RA (limestone hill-Guadalupes) have also ceased, with the exception of a 500 acre

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catclaw treatment to be implemented in 1997. The only herbicide application programs still active within the area are mesquite treatment and saltcedar treatment. The 5 acres of mechanical treatment included winching out salt cedars along the Pecos River. This work was authorized under Nationwide Permit No. 26 pursuant to Section 404 of the Clean Water Act and was approved by the Surface Water Quality Bureau of the New Mexico Environment Department.

Recreation Program:

The CRA provides a variety of recreation opportunities. Most recreation use is independent of developed sites, is dispersed, and is considered to be resource dependent. Dispersed, uncontrolled recreation use includes caving, hunting, camping, picnicking, mountain biking, fishing, horseback riding, hiking, climbing, sightseeing, and off-road vehicle (ORV) use. These activities occur throughout the resource area.

There are two designated ORV areas within the resource area, while the rest of the resource area is designated either open, closed or limited (Map 5). The designated areas are primarily used by motorcycle clubs for organized events. Refer to the enclosed Hobbs and Artesia Color Quads for a more defined location of designated ORV areas.

About 250 recreational cave permits are issued each year, which account for approximately 2,000 visitor use days. Approximately 80 percent of these permits are for three recreational caves in the McKittrick Hill Caves Special Recreation Management Area, with the remaining permits issued for recreational use in other caves. Visitor use of ungated caves is estimated to be nearly equal to permitted use. Two to four requests are received annually for various types of speleological research, including studies in paleontology, geology, mineralogy, hydrology, and biology.

Federally Listed Animal Species Assessed

In The 1988 RMP/Biological Assessment

Mustela nigripes - Black-footed ferret - Endangered

The last reliable records for confirmation of M. nigripes sightings or collections in New Mexico were in the 1950's. In addition, there is some question as to whether the area falls into the historic range of the Black-footed ferret. According to Hubbard and Schmitt (1984) only one "highly probable" record exists from

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the CRA, and that record came from the northwestern corner of Lea county.

The existing prairie dog numbers within the Resource Area on BLM administered lands are extremely low, with only one active town known to exist. The one active town is approximately six acres in size with 90% fenced off from livestock grazing.

Effect Determination: Based on the lack of occurrence within the Resource Area, the activities/proposed actions outlined in the RMP will have "no effect" on M.t. nigripes and further informal consultation is not necessary.

Falco Deregrinus anatum - American peregrine falcon - Endangered
Significant habitat features for the falcon include cliffs, mountainous terrain, and water bodies all affording peregrines opportunities to capture flying prey where escape cover is unavailable. In healthy populations, the same cliffs tend to be occupied annually, although some pairs may alternate among cliffs locally or occupancy may be interrupted in some years (Addendum to American Peregrine Falcon Recovery Plan, 1993).

This species has' bred in the Guadalupe Mountain within the Guadalupe Mountains National Park in the last ten years. Historically, they may have bred throughout the Guadalupe Mountains but presently they seem to be limited to use within Park boundaries. In addition, they have been sighted on several occasions east of Carlsbad in the Laguna Grande salt lake region. Throughout this region, they hunt the various waterfowl and shorebird types that frequent the salt lakes. Refer to the enclosed Hobbs and Jal Color Quads for locations of potential foraging habitat. The actual Laguna Grande salt lake and a minimum of 1/4 mile swath around the entire lake shore are private. Laguna Tres and Quatro, which are in the same general area, are predominantly federal land with some intermingled state and private lands.

Various oil and gas development activities have occurred within the watershed of these lakes which encompasses approximately 22,000 acres. These activities have included 130 acres of disturbance for well pad development and approximately 160 acres for road, pipeline and powerline development. Standard operating procedures, COA and/or stipulations have kept federal wells and most pipelines out of any and all drainage systems which feed into the salt lakes. However, some roads cross the drainage systems including Eddy county road 793 which runs parallel to the lake approximately 3 miles to the east. Additional roads and pipelines run from well pad to well pad. No information or data is available on the amount of sediment entering these lakes from the associated watershed.

In addition, the oil and gas industry disposed of their produced

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salt water in Laguna Quatro, . Tres and Gatuna until 1992 when the Environmental Protection Agency(EPA) shut down all oil and gas disposal facilities. What effects this activity had on the fauna and flora of this region is unknown.

Currently, effluent disposal from the Potash mines occurs in this region as well. As explained in the "Potash Program" section of this document, Mines pump effluent into once-natural playas, other natural depressions or man-made holding ponds. The playa lakes may dry up during the summer months when evaporation/ evapotranspiration rates, exceed disposal/precipitation rates. During the winter, however, they commonly contain standing water. These playas have become either seasonal or permanent bodies of water. Originally it was thought that potentially, the effluent coming from the Potash mines might contain hazardous constituents. In turn, avian species inhabiting the area such as the various shore birds and waterfowl would ingest the disposal water and it would either cause their mortality or build up in their body over time.

However, during an Investigation of Avian Mortality in the Playa Lakes Region of Southeastern New Mexico, a research project conducted by the NBS, a determination of the proximate and ultimate causes of death of birds using the playa lakes was completed. According to the interm report of that project, "Pens housing captive-bred mallards were constructed a two Lagunas, one exposing the birds to direct contact with lake water, another on land with lake water available to drink. All' birds in the water pens were adversely affected, some showing abnormal behavior within 3 hours, and leading to death or euthanasia by 35 hours. Blood samples taken at intervals throughout the project showed that there were severe changes in their eyes, and some areas of inflammation in other internal organs, but no evidence of any other infectious or toxic disease. The amount of sodium found in the brains of these birds was consistent with a diagnosis of salt poisoning. Birds in pens on land, but drinking lake 'water, also had elevations of sodium in the blood and brain, but not to a toxic level.

During the mortality surveys on all the salt lakes, 92% of all dead birds found were on Laguna Toston and Laguna Uno. Turkey vultures, ' Chihuahuan ravens, Swainson's hawks and a Peregrine falcon were observed feeding on dead waterfowl. Based on the findings of this investigation, it can be concluded that Peregrines do feed on the dead birds, but they do not receive any toxic contamination from ingesting these dead birds. Secondly, although the' population levels of prey species (water birds) for the Peregrine is reduced somewhat, these birds are agile and will go elsewhere to find food if necessary~ As stated in the Addendum to American Peregrine Falcon Recovery plan (1993), "Because western temperate peregrines eat a large variety of birds, can fly great distances to find prey, and can raise broods where specific prey species are seemingly scarce, fluctuations in prey populations are unlikely to be

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significant."

Effect Determination: The activities outlined in the RMP and/or site specific ongoing activities "not likely to adversely affect" F. peregrinus anatum, and formal consultation is not necessary.

Baliaeetus leucocephalus - Bald eagle - Endangered

H. leucocephalus like F. p. anatum migrates occasionally through the Resource Area. Nesting and breeding do not occur within the Resource Area but the Pecos River is potentially a foraging area for the species. Refer to the enclosed Artesia, Carlsbad and Jal Color Quads for potential foraging habitat along the Pecos River.

The CRA Wetland-Riparian HMP prescribes various management approaches for all riparian areas within the Resource Area. This includes those portions of the Pecos River administered by the BLM. Management along these portions of the river includes livestock adjustments, fencing, and oil and gas leasing stipulations. These management approaches are not strictly focused at Bald eagle management, but at overall riparian area management. Livestock adjustments occur based on AMP/CRMP development and subsequent implementation of grazing systems which are prescribed within that plan. For instance, allotments 7031 and 7036, which are Pecos River allotments, have implemented prescribed grazing systems including deferred rotation and seasonal grazing respectively. Allotment #8097 has yearlong grazing occurring thus, portions of the Pecos River on that allotment have been fenced to exclude livestock. Six of the other 7 allotments associated with the Pecos River contain scattered parcels of BLM administered land, which makes any management less effective due to the continued impacts on the adjoining private and/or state land. Refer to the "Grazing program" section, and the "Riparian Habitat" section for further baseline information on the Pecos River.

On oil and gas leases issued since 1988 which are along the Pecos River, are in somewhat close proximity to the river, or are within a drainage leading to the river, a NSO stipulation is attached. For leases issued prior to 1988 or leases held by a producing well, moving away from the river or drainage system is authorized through the 43 CFR Part 3101.1-2, which allows for a 200 meter offset or 60 day delay for development and/or drilling. Since 1989, the CRA, BLM has not authorized any wells within drainages leading to the Pecos or within the floodplain of the Pecos •

Effect Determination: Based on these management approaches and the subsequent curtailing of potential impacts along the Pecos River, RMP proposed actions or site specific ongoing activities are "not likely to adversely effect" H. leucocephalus, and formal consultation is not necessary.

Gambusia nobili. - Pecos gambusia - Endangered

G. nobilis occurs in Blue Spring which is under private ownership and is surrounded by private lands. There are additional populations in Bitter Lake National Wildlife Refuge, the Salt Creek Wilderness Area and an introduced population in a series of artificial pools at the Living Desert State Park (Pecos Gambusia Recovery Plan, 1983). Refer to the enclosed Carlsbad Color Quad for the location of Blue Spring.

Blue Spring, which contains the only CRA population, is currently protected by a No Surface Occupancy (NSO) lease stipulation which alleviates potential negative impacts to the species from oil and gas development. The surface surrounding Blue Spring is under private ownership and only the mineral estate is administered by the BLM, thus the BLM has no authority for the grazing management and/or other resource management.

Effect Determination: A "no effect" situation exists for BLM administered programs (oil and gas), and further informal consultation is not necessary.

Federally Listed Plant Species Assessed

In The 1988 RMP/Biological Assessment

Eriogonum gypsophilum- Gypsum wild buckwheat - Threatened

This species occurs on nearly pure gypsum soils at Seven River Hills, Ben Slaughter Spring~ and Black River. Recent surveys have located populations scattered throughout Ben Slaughter Draw. In addition, essentially all other potential habitat has been surveyed. Survey routes are available upon request in the CRA office. To date studies have shown that cattle grazing and the subsequent hoof action of the livestock breaks up the hard, crusted gypsum soils which E. gypsophilum occurs in and thus, allows for the establishment of new seedling plants. This type of disturbance is actually beneficial to the species (Juen 1985). Refer to the Artesia and Carlsbad Color Quads and Maps 7, 8, 9 and 10 for locations of the three buckwheat populations ..

Currently, the three known populations are protected from oil and gas development through leasing stipulations such as No Surface Occupancy (NSO), and through management direction for Ben Slaughter Spring, which is outlined in the Wetland-Riparian HMP developed in 1989. All population locations are also closed to Off Road Vehicle activity as designated through the RMP, and are designated as either "Critical Habitat" or "Essential Habitat".

Effect Determinations: Under present levels of grazing, a -not likely to adversely effect- situation exists and further informal consultation is not necessary.

Echinocereus fendleri var. kuenzleri - Kuenzler's hedgehog cactus
Endangered

This species occurs in shallow limestone soils in pinon/juniper habitats near Elk, New Mexico. Sparse numbers of individuals occur in Chaves county on BLM surface. Based on various literature sources, the most serious threat to the species is overcollection. However, there is research being conducted by the New Mexico Heritage Program and the New Mexico Energy, Minerals and Natural Resources Department focused at grazing impacts to this species.

There are 15 sites within the CRA where the cactus is known to exist (DeBRUIN, 1992). During the same survey efforts, DeBRUIN identified many more acres of unoccupied habitat. All of these sites are on isolated tracts of BLM administered land. Refer to the enclosed Alamogordo Color Quad and Maps 6 and 11 for the specific location of documented populations.

At Fort Stanton where the largest known population of this cactus exists, the New Mexico Heritage Program has established six monitoring sites for the cactus and has gathered several years of demographic and reproductive data and, to a minor extent, impacts of livestock grazing. The New Mexico Energy, Minerals and Natural Resources Department has established three study areas and has been conducting a study to determine impacts to the cactus from livestock grazing. At this time, there is no statistically significant difference between the three study plots. This study will be ongoing for several more years (pers. com. Lightfoot, NMEMNRD, 1995).

Currently, there are three grazing allotments associated with the occupied habitat as depicted on Map 11. Allotment #9013 has approximately 2900 acres total with 1143 acres of that administered by the BLM. There are 29 cows authorized on the federal land portion of that allotment which is 39 acres per cow. Allotment #9011 has 1920 acres total with 625 federal acres within the allotment and 16 cows authorized on the federal land which comes out to 39 acres per cow as well. Allotment #9010 includes a total of 5120 acres total, with 240 acres of federal land and 7 cows authorized for that federal land which is 34 acres per cow. Nevertheless, as the on90in9 grazing impact research being conducted at Ft. :Stanton on this species has not been completed, a definite conclusion. as to whether grazing is an impact to this species and if so, at what levels has not been determined. During DeBruin's surveys (1992) she noted in her report that on one site plants were from poor-good condition and grass heavily grazed. Yet on another site she noted plants were in poor-good condition with

good grass cover. This would suggest that the drought conditions or some other factor was effecting the species.

Currently, this portion of the Resource Area is categorized as low potential for hydrocarbons and thus, oil and gas development is absent from this portion of the Resource Area.

Effect Determination: Based on the levels of grazing on BLM administered lands within occupied habitat, and the fact that this area is low potential for oil and gas development, a "not likely to adversely effect" situation exists, and further informal consultation is not necessary.

Coryphantha sneedii var. leei - Lee's pincushion cactus Threatened

This species generally occurs on north facing slopes in limestone hills. They grow in shallow soils on stairstep limestone shelves in Carlsbad Caverns National Park. Similar habitat occurs on BLM lands surrounding the park. BLM biologists conducted extensive field surveys in 1982 and 1983, but did not discover any new populations outside the park boundary.

Future site specific activities or projects occurring within conducive habitats will be reviewed to determine if the species is present •. If the species is found during future site specific action reviews, appropriate measures will be taken to avoid any impact to the species and/or consultation initiated as appropriate.

Effect Determination: Currently, the activities outlined in the RMP and/or ongoing site specific projects are "not likely to adversely effect" ~. sneedii var. leei due to the lack of occurrence and/or surveys necessitating a move of an ongoing activity, and further informal consultation is not necessary.

Echinocereus lloydii.- Lloyd's hedgehog cactus - Endangered

~. lloydii occurs in metephorphic limestone soils. Several populations have been documented in Eddy County. Brack and Heil (1985) documented plants in Carlsbad Caverns and Guadalupe Mountains National Parks.

Lloyd's hedgehog cactus has been found to be a hybrid entity that does not meet the definition of a species under the Endangered Species Act. It is a hybrid between Echinocereus coccineus (a species of caret-cup cactus) and Echinocereus dasyacanthus (Texas rainbow cactus). The U.S. Fish and wildlife Service is preparing the documents to propose removal of Lloyd's hedgehog cactus from the endangered species list. (pers. corom. Charlie McDonald, USFWS 1995).

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However, future site specific activities or projects occurring within conducive habitats will continue to be reviewed to determine if the species is present until the species is officially removed from the endangered species list. If the species is found on future site specific actions, appropriate measures will be taken to avoid any impact to the species and/or consultation initiated as appropriate.

Effect Determination: RMP or site specific ongoing activities are "not likely to adversely affect" ~. lloydii. No further informal consultation is necessary.

New Federally Listed Species or Species With A

Status Change Since The 1988 RKP

Vulpes velox - Swift fox - Candidate (Category 1)

Within the Carlsbad Resource Area, V. velox conducive habitat occurs east of the Pecos River in Eddy and Lea counties. More specifically, the swift fox ranges throughout the short and mid grass prairie generally in areas with sparse vegetation. Within the CRA, areas along the Pecos River and the grassy flats from Burton Flats north to Loco Hills are the most suitable areas for the swift fox. Refer to Artesia, Bobbs, Jal and Carlsbad Color Quads for location of potentially suitable and suitable habitats. These delineations are based on literature review, not actual sightings. According to Hubbard (1994), the Swift fox is a regular and apparently fairly numerous inhabitant of the Great-Plains region of easternmost New Mexico, where confirmed in 10 counties in the period 1879-1984. In addition, it certainly occurs in Colfax and probably Mora and Eddy counties, although this has not yet been confirmed by museum specimens.

The Animal Damage Control (ADC) program currently conducted on BLM administered lands potentially could impact the overall population within the Resource Area. The USFWS reviewed and commented on the 1993 Environmental Analysis covering the Roswell District ADC program. They addressed their concerns in Cons. #2-22-94-1-037. The BLM and the Animal Plant Health Inspection Service (APHIS) developed mitigative measures to alleviate any potential impacts, including the use of conventional control methods other than M-44's within the conducive habitat. Identified conducive habitat included all of the Carlsbad Resource Area east of the Pecos River. An exception would be in the case of multi, confirmed active depredation where coyotes are likely to be the only animals taken. M-44's could be used as a tool of last resort. Recently, APHIS has assumed responsibility for NEPA and ESA compliance under the new

APPENDIX 4

MOU between the BLM and APHIS (95-13S) which expires September 30, 1996.

Many kit fox (*V. macrotis*) have been reported west of the Pecos River. Grazing along those portions of the Pecos River administered by the BLM is minimal. Much of the BLM lands along the river south of Carlsbad are designated as an SMA and grazing is intensively managed. Intensive management includes fencing of livestock off the river, and/or implementation of rest/rotation grazing systems. It is unknown whether oil and gas development or recreational activities have an impact on the swift fox populations within the CRA. If further research determines that oil and gas development or recreational activities do have an effect on the swift fox populations, consultation procedures will be implemented.

As for possible listing of the Swift fox as an endangered or threatened taxon in New Mexico, Hubbard (1994) does not believe the available data support such a move at the present time. In fact, the Swift fox's status over the last 40 years appears to be better than at any time in the period 1850-1950.

Effect determination: Currently, actions outlined in the RMP and/or site specific ongoing activities are "not likely to adversely affect" this Category 1, Candidate species.

Falco peregrinus tundrius - Arctic peregrine falcon - Threatened The Arctic peregrine falcon is an occasional migrant through the Resource Area.

Effect determination: The RMP or site specific ongoing activities or projects do not pose any impacts to the species or its habitat and thus, a "no effect" situation is present and further informal consultation is not necessary.

Pelecanus occidentalis -, Brown pelican - Endangered

The Brown pelican occupies the coastal shorelines of eastern Mexico and Texas. However, these occasional migrants have been known to move inland to other large bodies of water. This species has been observed at Bitter Lake National Wildlife Refuge (BLNWR) and at Brantley Lake State Park. The species has not been observed on any BLM administered lands within the CRA.

Effect Determination: A "no effect" situation exists due to the absence of the species on BLM administered lands and further informal consultation is unnecessary.

Sterna antillarum - Interior least tern - Endangered

~ antillarum breeds regularly at BLNWR where it was first recorded in 1949. BLNWR is considered "essential" tern breeding habitat in the state. This species does occur in Eddy county during migration and as a vagrant elsewhere.

Channelization, irrigation, and the construction of reservoirs and pools have contributed to the elimination of much of the ,tern's nesting habitat. Unpredictable flow patterns below reservoirs can pose problems for nesting terns. Increased human recreation on river sandbars threaten nesting terns including the use of recreational vehicles in nesting habitat.

Currently, there are no known nesting areas for this species within the Resource Area. This information is based on the annual surveys conducted by the local Audubon Society. Their established survey routes focus around much of the suitable habitat along the Pecos River and around some of the salt lakes on the east side of the Resource Area. However, portions of the Pecos River and shores around the various salt lakes are potentially foraging habitat for this species. Those mitigative measures to protect the Pecos River and the various Lagunas which are discussed throughout this document will curtail oil and gas impacts and grazing effects to the riparian systems.

As with the Peregrine, it was thought that Potash disposal might pose a threat to the least tern. However, the intern report for the Investigation Into Avian Mortality in the Playa Lakes Region of Southeastern New Mexico states "No shorebirds or gulls were found dead, probably because only their feet or legs were exposed to the water. A few shorebirds (American avocets, Wilson's phalaropes, Black-necked stilts) were seen swimming, but they mostly stood in the shallows. No passerines were observed drinking or bathing in the lakes." In addition, the study concludes that drinking the water vs swimming in it does increase the levels of sodium in the blood and brain, but not to a toxic level.

Recreation is a dominant use of the river including fishing, picnicing, boating and various other water based activities. Refer to the "Recreation Program" section of this document. Off Road Vehicle travel is limited to the already established two-track roads present along the river. Very few undeveloped river crossings (two-track roads crossing river) occur on BLM administered lands. The predominant impact to the suitable habitat is river level fluctuations caused by the release of large amounts of water and/or the total shutting off of water from the various dams which occur along the CRA portion of the Pecos River. Refer to Artesia, Hobbs, Jal and Carlsbad Color Quads for the location of potential foraging habitat for the tern.

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Effect Determination: Activities prescribed in the RHP and/or site specific ongoing activities are "not likely to adversely effect" the Interior least tern and formal consultation is not necessary.

Charadrius montanus - Mountain plover - Candidate (Category 1) This species has a narrow range of habitat requirements and optimal habitat consists of expansive grasslands. Mountain plovers prefer flat, short-grass prairie and tend to avoid taller grasses and hillsides (Graul 1975). Suitable habitat often occurs in areas intensively grazed. This species also occupies prairie dog colonies, particularly in mid- and tall-grass prairie ecosystems. Migrants occasionally occur on dry mudflats and shorelines of dry reservoirs (Andrews and Righter 1992). Refer to Robbs, Jal, Carlsbad and Artesia Color Quads for the location of potential foraging habitat for the mountain plover.

Reasons for Candidate status include habitat; destruction by conversion of prairie to agricultural cropland and the decline of prairie dog towns.

There is one known active prairie dog town on public lands within the resource area, and 90% of it is fenced off from livestock.

Effect Determination: The activities outlined in the RMP and/or ongoing site specific activities will have "no effect" on this Category 1, Candidate species.

Strix occidentalis lucida - Mexican spotted owl - Threatened

The Mexican spotted owl generally inhabits conifer forests. The Carlsbad Resource Area does not possess any potential habitat suitable for the Mexican spotted owl.

Effect Determination: No effect will occur to this species or its habitat and further informal consultation is not necessary.

Falco femoralis septentrionalis - Northern aplomado falcon - Endangered

The northern Aplomado falcon once extended from Trans-Pecos Texas, southern New Mexico, and southeastern Arizona to Chiapas and the northern Yucatan along the gulf coast of Mexico, and along the pacific slope of Central America north of Nicaragua (Howell 1972). According to the historical distribution map of 1900 contained in the recovery plan for this species, the falcon once inhabited the southeastern 1/4 of the CRA. This area's vegetative makeup consists of mesquite, shinnery oak, soap tree yucca and a variety of grasses and herbs intermingled. According to Hector (1987) this

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species inhabits open grasslands with scattered yuccas and mesquites. In that same research literature, Lehmann was quoted as saying "Aplomado falcons live in areas where scattered tall mesquites and shorter shrubs occurred 0.25 mile or so apart."

This species is very rare in New Mexico. The last specimen was recorded in 1939, and the last nesting documented in 1952. In June of 1991 a single subadult was photographed on White Sands Missile Range in Otero county, and that same year one "as sighted near Marfa, Texas. In 1992, two sightings occurred on the White Sands Missile Range. Possibly, this species was sighted (unverified) at two locations within the Resource Area. One in Big Canyon in the southern portion of the Guadalupe Mountains in 1987 by Scott Adams (BLK). The other was observed by Koleen Linnahan in 1988 over the salt lake region east of Carlsbad, NM.

Probable causes of their decline include brush encroachment and agricultural development which have deteriorated much of the desert grasslands and coastal prairies within the former range of the falcon (Hector 1987)" and pesticide contamination. Brush encroachment, specifically within that portion of the historic range of the falcon which occurs within the RA (Map, P.6-Northern Aplomado Falcon Recovery Plan, 1990), is due to two main factors: historic overgrazing and wild fire suppression. Currently, utilization levels on grazing allotments are maintained at no more than 45' use on preferred forage species. Refer to "Grazing Program" section of this document for more information on the utilization levels and the overall monitoring.

In addition, approximately 138,970 acres of brush control have been completed within the RA, of which all falls within the historical range of the falcon based on the map in the recovery plan. These brush control efforts have returned shrub dominated habitats to their historic makeup of grasslands with intermingled brush species. This will improve habitat conditions for reestablishment of the species within the RA.

Oil and gas is scattered throughout this portion of the RA as well. There are three mitigative measures required of the oil and gas companies which curtail impacts to avian species. These include raptor proofing powerlines (Appendix I-B), netting pits and tanks, and covering exhaust stacks on heater-treater facilities. The first of these requirements is possibly the most important for protection of raptors.

Effect Determination:. Based on the current levels of grazing, brush treatment efforts and the mitigative efforts to alleviate potential oil and gas impacts to avian species, a "not likely to adversely affect" situation exists and further informal consultation is not necessary at this time •.

Empidonax traillii extimus- Southwestern willow flycatcher -
Endangered w/PCH

The willow flycatcher breeds in riparian habitats along rivers, streams, or other wetlands, where dense growths of willows and other native riparian species are present. Their preferred habitat generally consists of a scattered overstory of cottonwoods and willows, but they have also been documented nesting in saltcedar (Maynard, 1994). The species is sensitive to riparian degradation. There are four areas within the CRA which could be considered potential habitat for the southwestern willow flycatcher. These areas include the Black River, the Delaware River, the Pecos River and Ben Slaughter Spring. Refer to the "Riparian Habitat" section of this document for a description of these riparian areas. However, none of the streams and/or rivers proposed as critical habitat occur within the CRA.

In 1991, BLM acquired a 3 mile stretch of the upper Black River in Eddy county. This area has been designated a Special Management Area with protective measures and management techniques focused at riparian habitat maintenance and protection, including no livestock grazing. Of the almost 40 miles of rivers, streams, and wetlands within the Resource Area, this three mile stretch is definitely the most conducive to occupancy by the Southwestern willow flycatcher. It has been surveyed numerous times (during all seasons of the year and using the proper protocol) and to date there have been no observations of this flycatcher. However, in 1996 surveys will be conducted again along the Black and Delaware Rivers by Dr. Melhop of the New Mexico Natural Heritage Program.

The Delaware River is currently being acquired through a land exchange. This area is located on the NM/TX line, and contains a good representation of native riparian vegetation. It also contains a significant number of saltcedar. Two grazing allotments are associated with this area, and grazing is not allocated on any portion of the river within either of these allotments. Officially, grazing will be excluded once the acquisition is complete, a plan is developed and the prescribed fence is built.

The Pecos River is 100% dominated by saltcedar on those portions administered by the BLM. As mentioned previously, a majority of the BLM administered lands along the Pecos river are small scattered parcels. However, there are two parcels, a 4 mile stretch and a six mile stretch, that are solid blocks. These two blocks occur below the salt dome geologic structure at Malaga Bend, and nesting habitat for this species (cottonwoods, willows) did not historically occur due to the salty water. Saltcedars are now prevalent along these stretches: because they are extremely salt tolerant.

Ben Slaughter spring consists of a single pool approximately 50 yards long surrounded by alkali sacaton, seep willow, one willow,

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one young cottonwood (planted 1994) and several netleaf hackberries.

During the period 1992 - 1995, biological inventories were conducted by The Nature Conservancy, including surveys for, all special status avian fauna, along BLM portions of the Pecos River, Delaware River, Black River, and around various springs containing preferred habitat components. No Southwestern willow flycatchers were present in any of the riparian zones surveyed within the CRA.

Future site specific activities or projects occurring within conducive habitats will be reviewed to determine if the species is present. **If** the species is found during future site specific action reviews, appropriate measures will be taken to avoid any impact to the species and/or consultation initiated as appropriate.

Effect Determination: With additional surveys yet to be completed, confirmed sightings of the species within the RA are still possible. However, with the present condition of potential habitat, the present levels of grazing on these areas, and the oil and gas mitigative measures currently in place, a "not likely to adversely effect" situation exists and further informal consultation is not necessary.

Notropis girardi - Arkansas River shiner - Proposed Endangered w/CH The Arkansas River shiner is a native of the Canadian River drainage in northeastern New Mexico. The population occurring there is designated "Proposed Endangered". However the population occurring in the Pecos River drainage is introduced and is not being considered for listing. The proposed rule published in 59FR 39532, Aug. 3, 1994 states: A non-native, introduced population occurs in the Pecos River in New Mexico; however, protection for this population is not under consideration.

Effect Determination: There will be "no effect" on the species, and further informal consultation is not necessary.

Notropis simus pecosensis - Pecos bluntnose shiner - Threatened N. S. pecosensis occurs in the Pecos River from south of Fort Sumner to Artesia, NM, and seasonally in Brantley Reservoir (Pecos Bluntnose Shiner Recovery Plan, 1992). Within this Resource Area designated critical habitat occurs from the Chaves/Eddy county line to the Avalon Reservoir just north of Carlsbad. Along this stretch of the Pecos River, approximately 2 miles of river bank are administered by the BLM, and it has been designated as a Special Management Area with a "No Surface Occupancy" stipulation tied to oil and gas leasing. Management on this small stretch of the Pecos River is negligible compared to the entire length of the Critical

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Habitat. Refer to the Artesia Color Quad for the specific location of the designated Critical Habitat administered by the CRA. Oil and gas wells administered by the BLM which are not directly associated with the river (no NSO stipulation), but could potentially effect the river (i.e. development in drainages leading to the Pecos River, etc.) are dealt with on a case by case basis. As mentioned previously, 43 CFR Part 3101.1-2 gives the BLM authority to move a well site up to 200 meters or delay it for up to 60 days. With leases issued prior to the RMP and/or leases held by a producing well, compliance measures are done on a routine basis. These compliance measures include ensuring all applicable laws, on-shore oil and gas orders, stipulations, and/or mitigation measures are being implemented by the respective oil company for a particular well. If a company is found to be in noncompliance, and Incident of Noncompliance (INC) is issued to the company and they must fix whatever problem or problems exist.

According to Hatch et al. (198S), stream desiccation is the main reason for the decline of the Pecos bluntnose shiner in the Pecos River. The BLM has no authority for maintenance of water levels within the Pecos River or its tributaries. However, various types of pollution entering the Pecos River are possible from oil and gas development (illegally). The various types of pollution are likely to have an indirect effect on the species in the Pecos River drainage as noted by Brooks et ale (1991). The BLM is responsible for administering federal mineral estate on federal land, and small tracts of state and private lands, but illegal dumping is not a liability of the BLM.

Livestock grazing for the 2 mile (200 acre) stretch of Pecos River is administered out of the Roswell Resource Area as a majority of the allotment falls into their resource area.

Effect Determination: Activities outlined in the RMP and/or ongoing site specific activities are "not likely to adversely affect" the Pecos bluntnose shiner and further informal consultation is not necessary.

Cyprinodon pecosensis - Pecos pupfish - Candidate (Category 1) The Pecos pupfish is found in a variety of habitats from saline springs and gypsum sinkholes to desert streams with highly fluctuating conditions. Pecos pupfish populations are most dense in the gypsum sinkholes on Bitter Lake National Wildlife Refuge. The species apparently thrives in these saline waters that support few other fish species. It occasionally occupies fresher waters in the Pecos River, but is uncommon in such habitats. In the Pecos River, this pupfish is most often found in backwater areas and side pools that lack sunfish or other predators (NMDGF 1988; Sublette et ale 1990; BISON-M 1995).

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There is a population in an inlet of Laguna Grande on the southeast side of the lake. This area is privately owned and any activities currently ongoing are not within the purview of the BLM. Refer to the Jal Color Quad for the location of the population in Laguna Grande.

Effect Determination: Activities addressed within the RMP or site specific ongoing activities will have "no effect" on this Category 1, Candidate species due to the lack of occurrence.

Tryonia kosteri - Koster's tryonia - Candidate (Category 1)

This species inhabits the upper layers of fine substratum within free flowing fresh and gypsum rich waters. I. kosteri has been known to occur on the BLNWR and in a spring at the Roswell Country Club. Per discussion with the New Mexico Department of Game and Fish, this species does not occur within the Carlsbad Resource Area.

Effect Determination: There will be "no effect" on this Category 1, Candidate species.

Assiminea pecos - Pecos assiminea snail - Candidate (Category 1) A. pecos is known to occupy seeps within the BLNWR and a spring at the Roswell Country Club. The snails are usually found on moist earth beside seeps and springs, but never beside standing water. Per discussion with the NMDGF, this species does not occur within the CRA.

Effect Determination: There will be "no effect" on this Category 1, Candidate species.

Belianthus paradoxus - Puzzle sunflower - Candidate (Category 1)

This species generally occurs in areas with gypsum soils and surface or subsurface water present. More specifically, this species is found along alkaline seeps and cienegas of semi-desert grasslands and the short-grass plains (4,000-7,500 ft.). Plant populations are found both in water and immediately adjacent to water sources where the water table is still high and in good condition.

In September 1992, surveys for this species were conducted within habitat types conducive to its presence including Hay Hollow drainage system, Cottonwood drainage and Ben Slaughter drainage to mention a few. No populations of R. paradoxus were discovered within the Resource Area. If future surveys reveal this species within the Resource Area, and if potential impacts are probable,

discussions with the U.S. Fish and wildlife Service will be undertaken.

Effect Determination: At this time a "no effect" situation is present for this Category 1, Candidate species.

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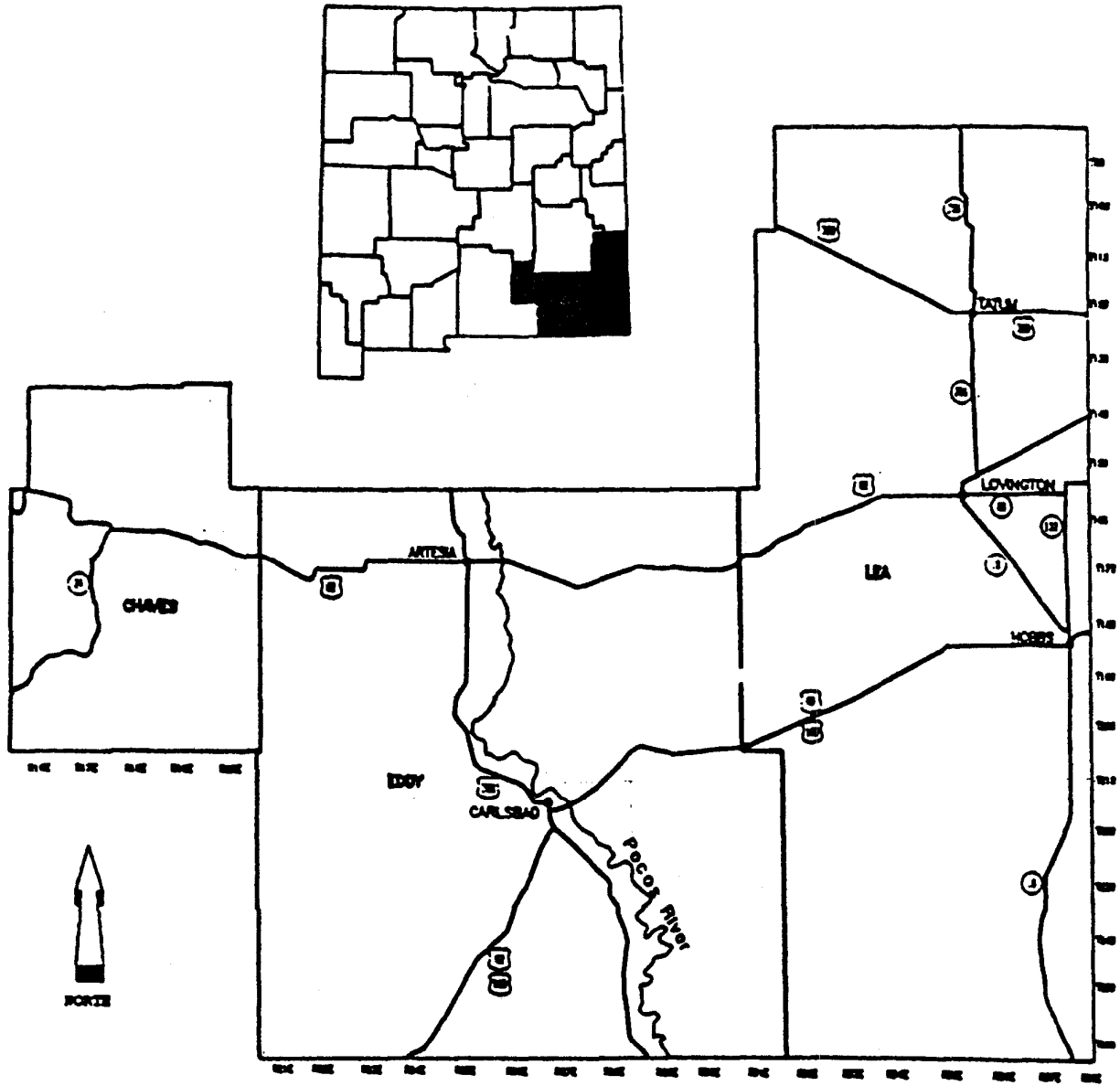
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MAP 1

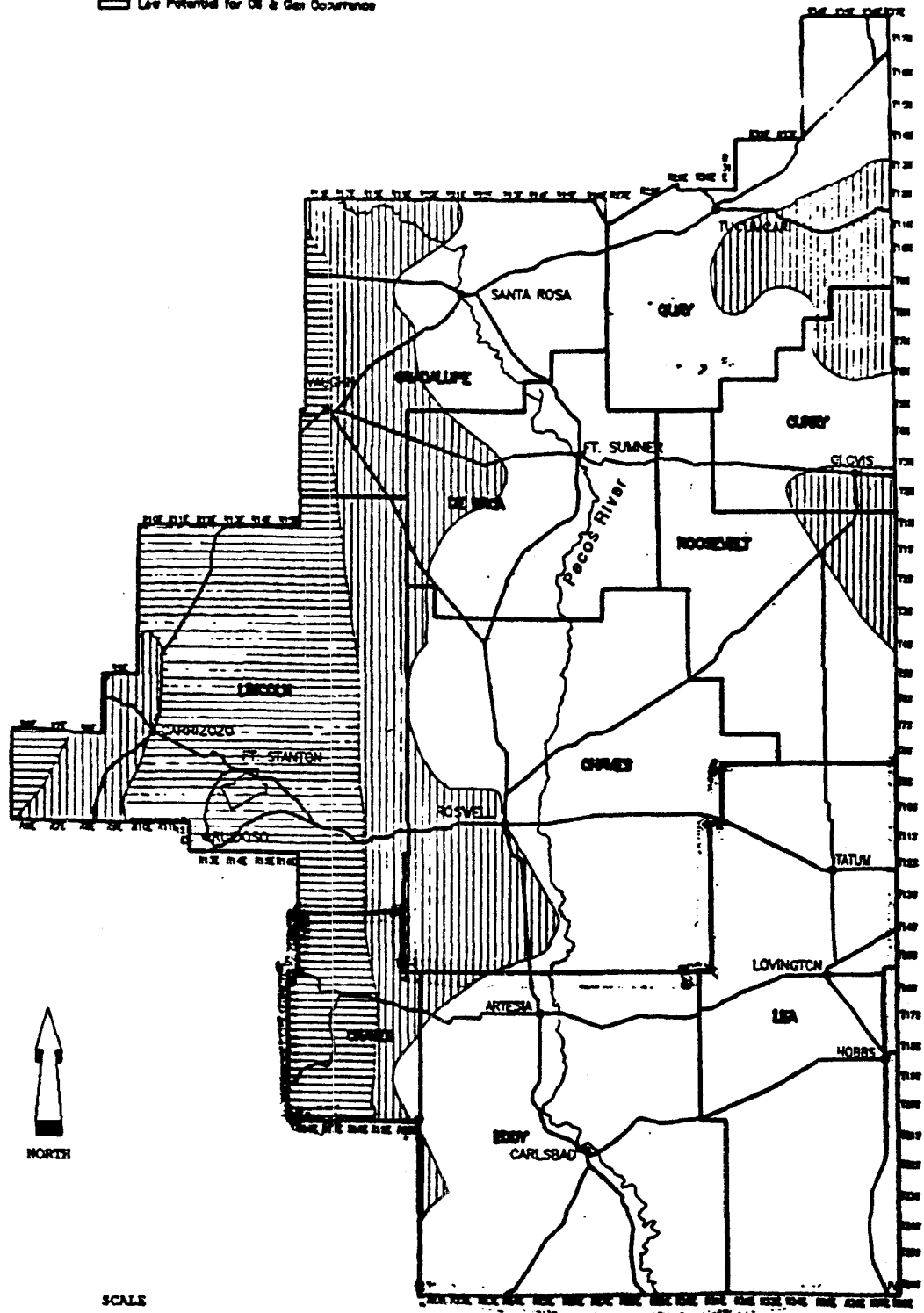


SCALE
1/2" = 13.5 Miles
BLM-Roswell District, 1994

GENERAL LOCATION MAP Carlsbad Resource Area

-  High Potential for Oil & Gas Occurrence
-  Moderate Potential for Oil & Gas Occurrence
-  Low Potential for Oil & Gas Occurrence

MAP 2



SCALE
 1/2" = 15.8 Miles
 BLM-Roswell District, 1994

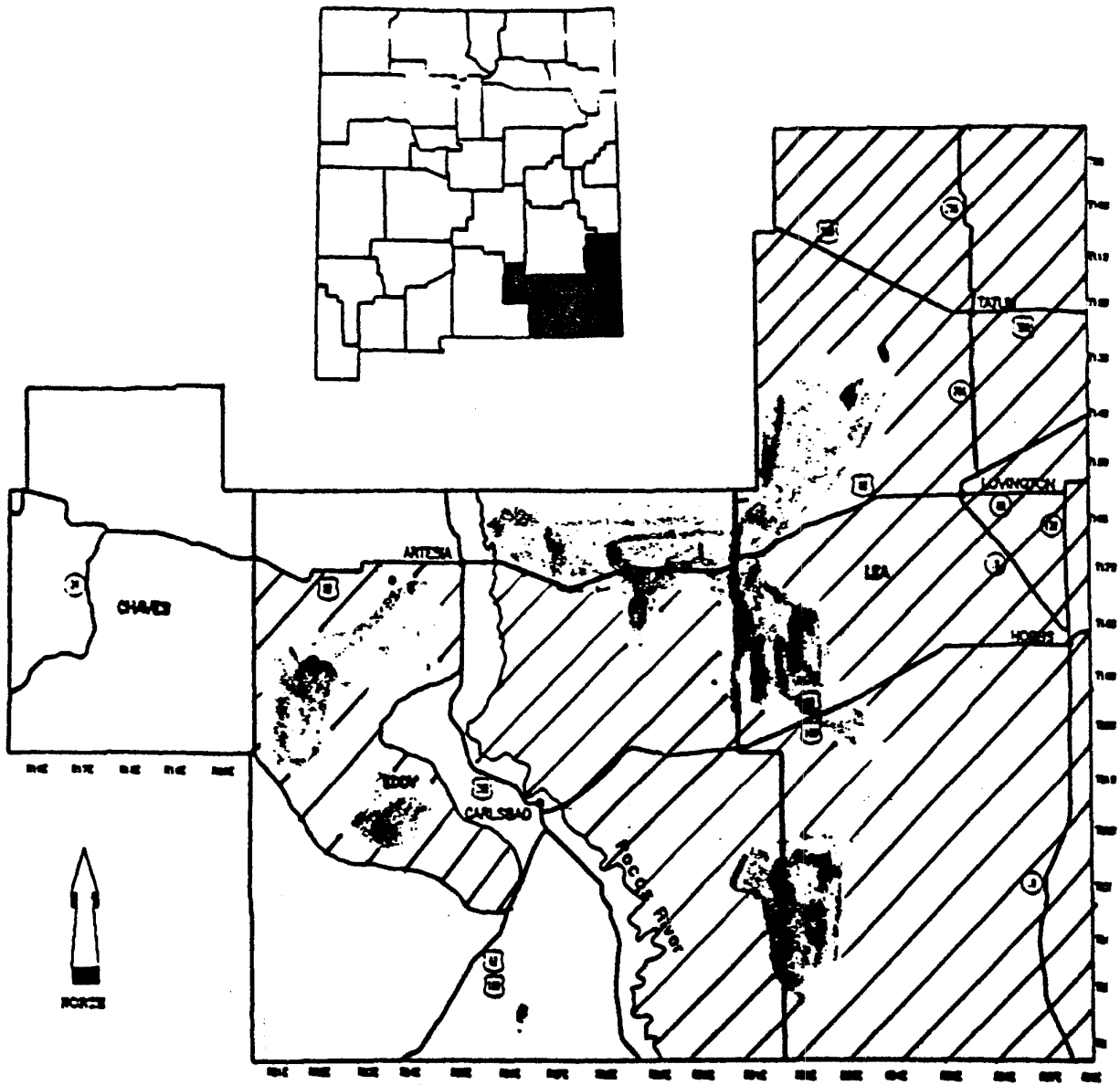
OIL and GAS POTENTIAL OCCURRENCE ZONES Roswell District

AP4-46


Carlsbad Resource Area

MAP 3

CONCENTRATED OIL & GAS AREAS



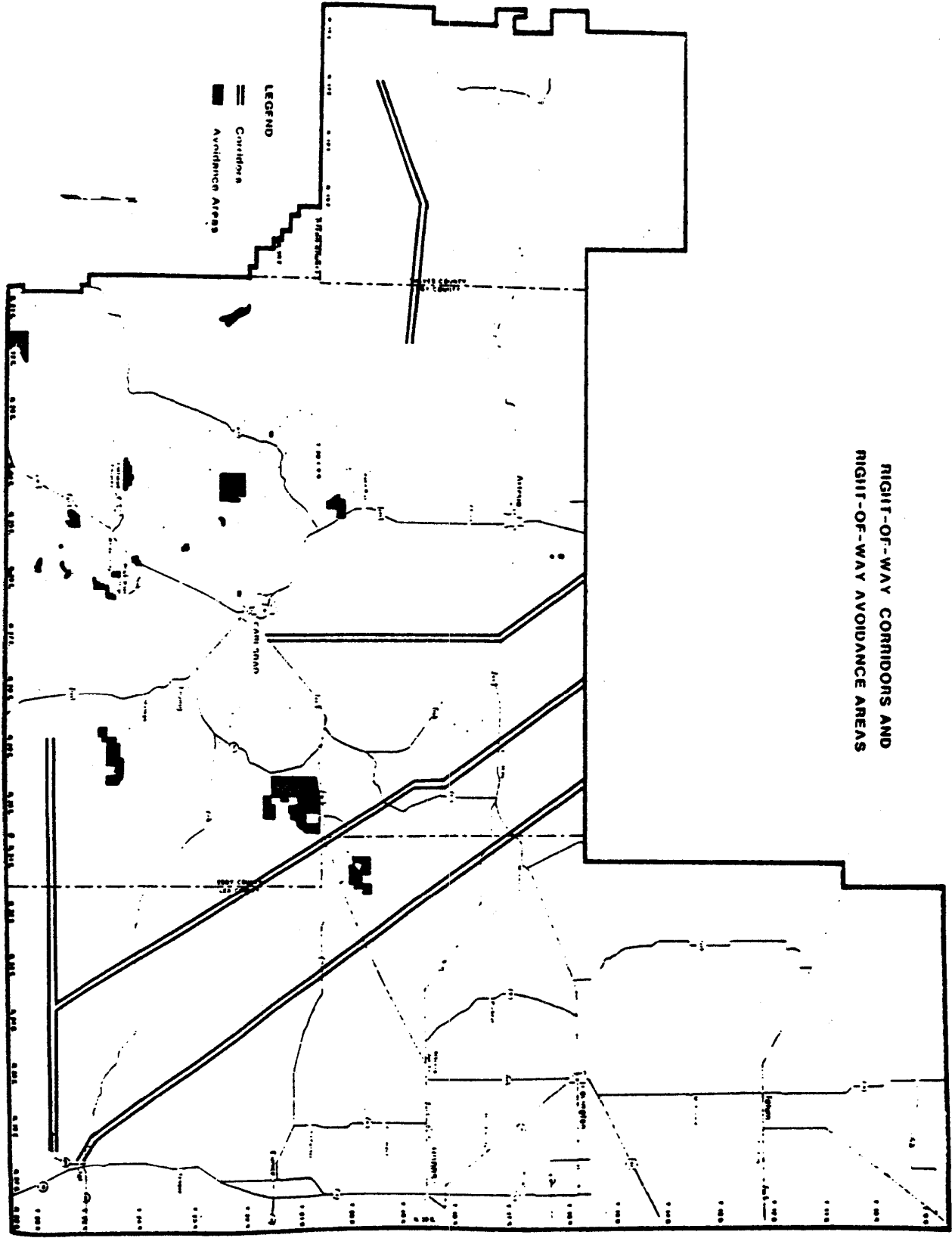
Areas of Oil & Gas Concentrations

 *Scattered Oil & Gas Occurrence*

SCALE
1/2" = 13.5 Miles
BLM-Roswell District, 1994

GENERAL LOCATION MAP
Carlsbad Resource Area

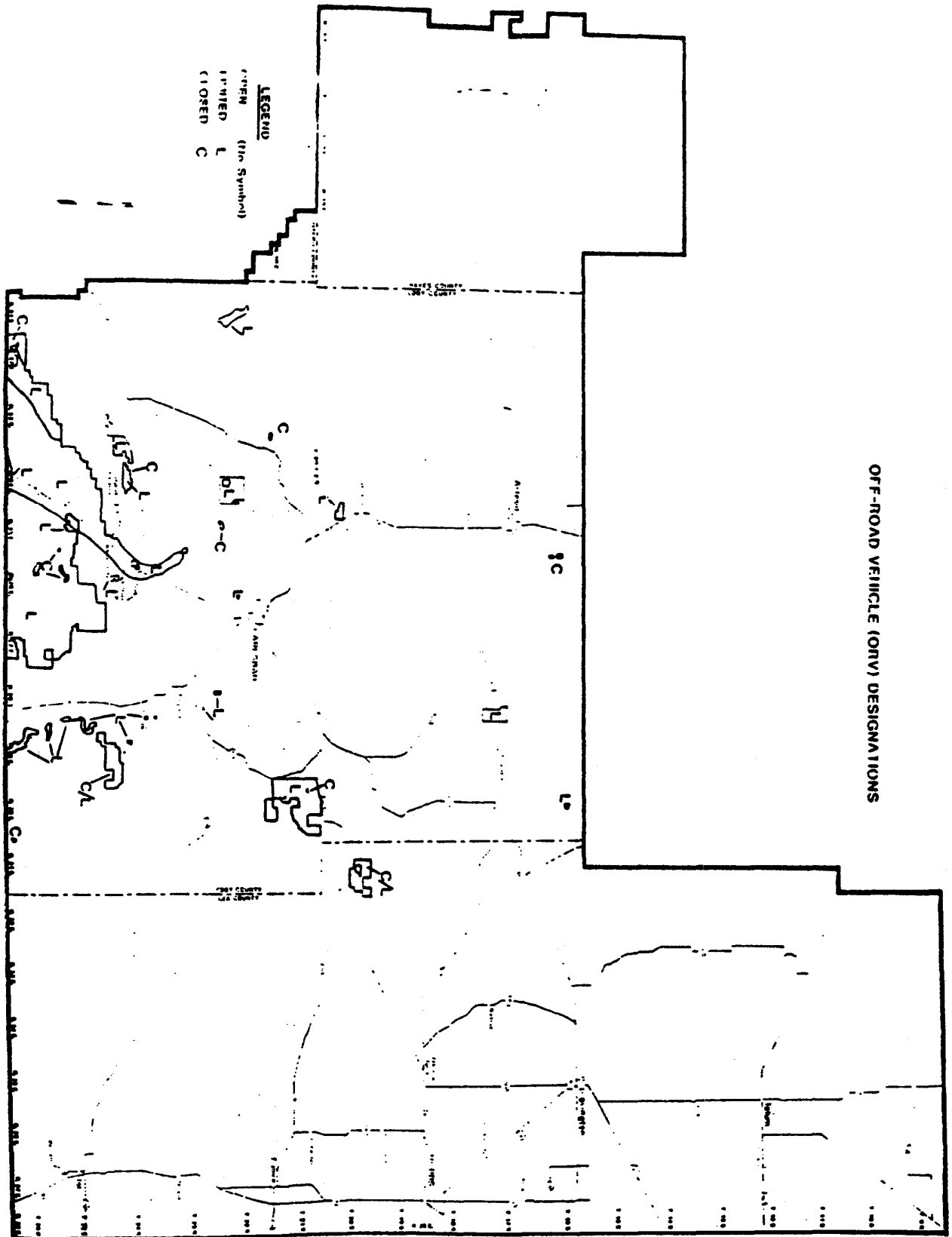
MAP 4



CARLSBAD RESOURCE AREA

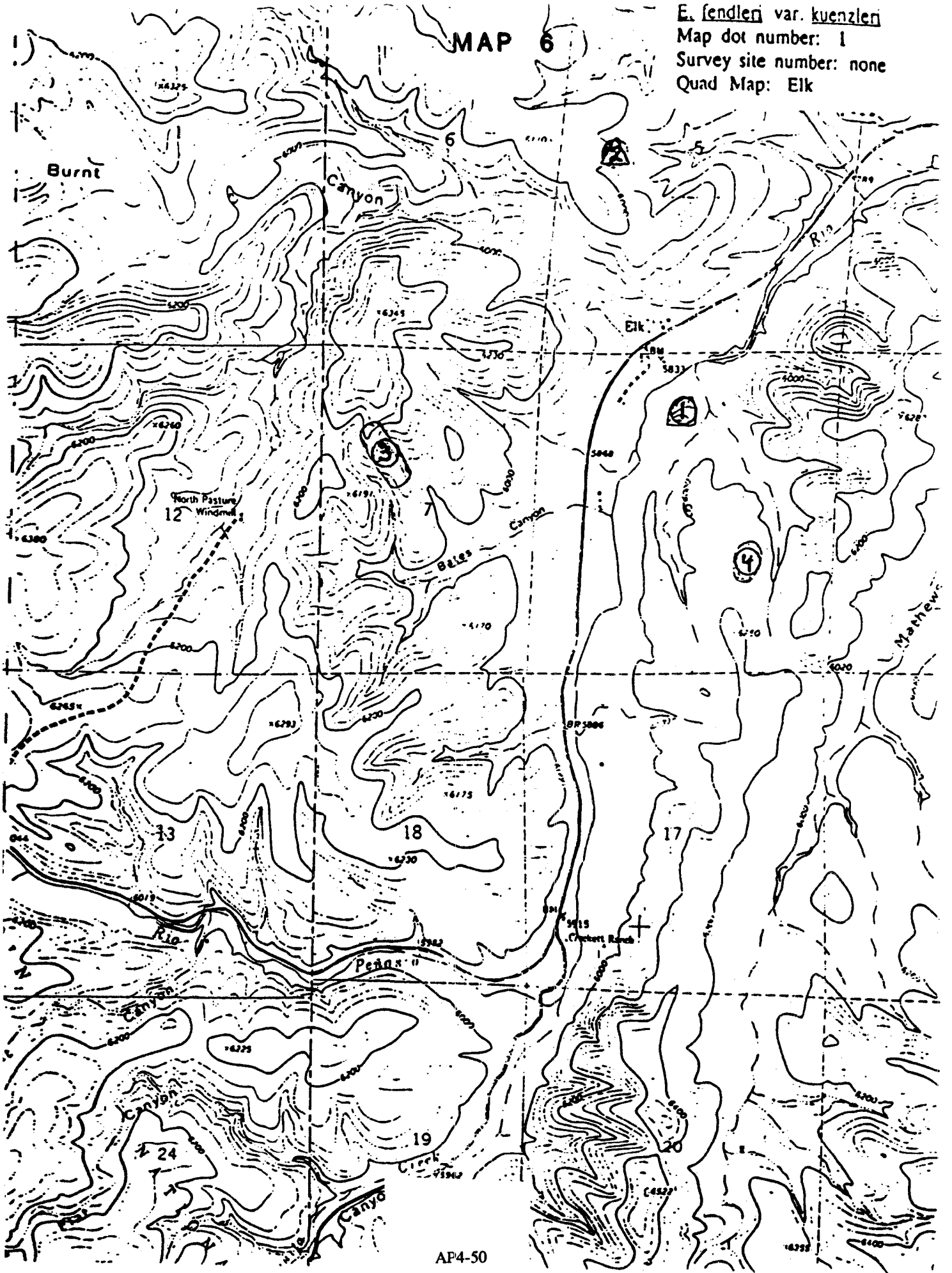
RIGHT-OF-WAY CORRIDORS AND
RIGHT-OF-WAY AVOIDANCE AREAS

MAP 5



MAP 6

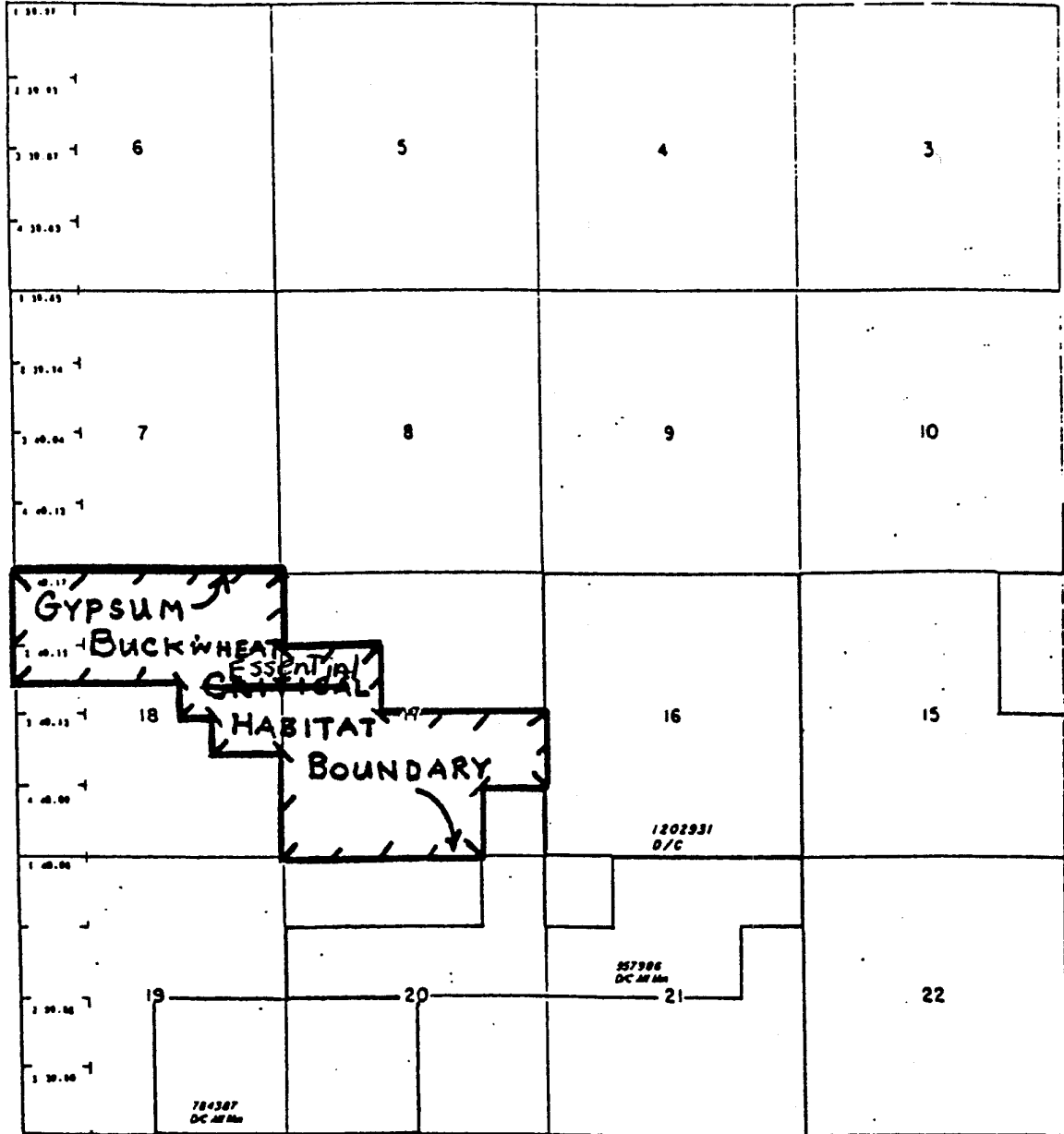
E. fendeni var. kuenzleri
Map dot number: 1
Survey site number: none
Quad Map: Elk



AP4-50

MAP 7

TOWNSHIP 26 SOUTH, RANGE 26 EAST,
EDDY COUNTY - 015

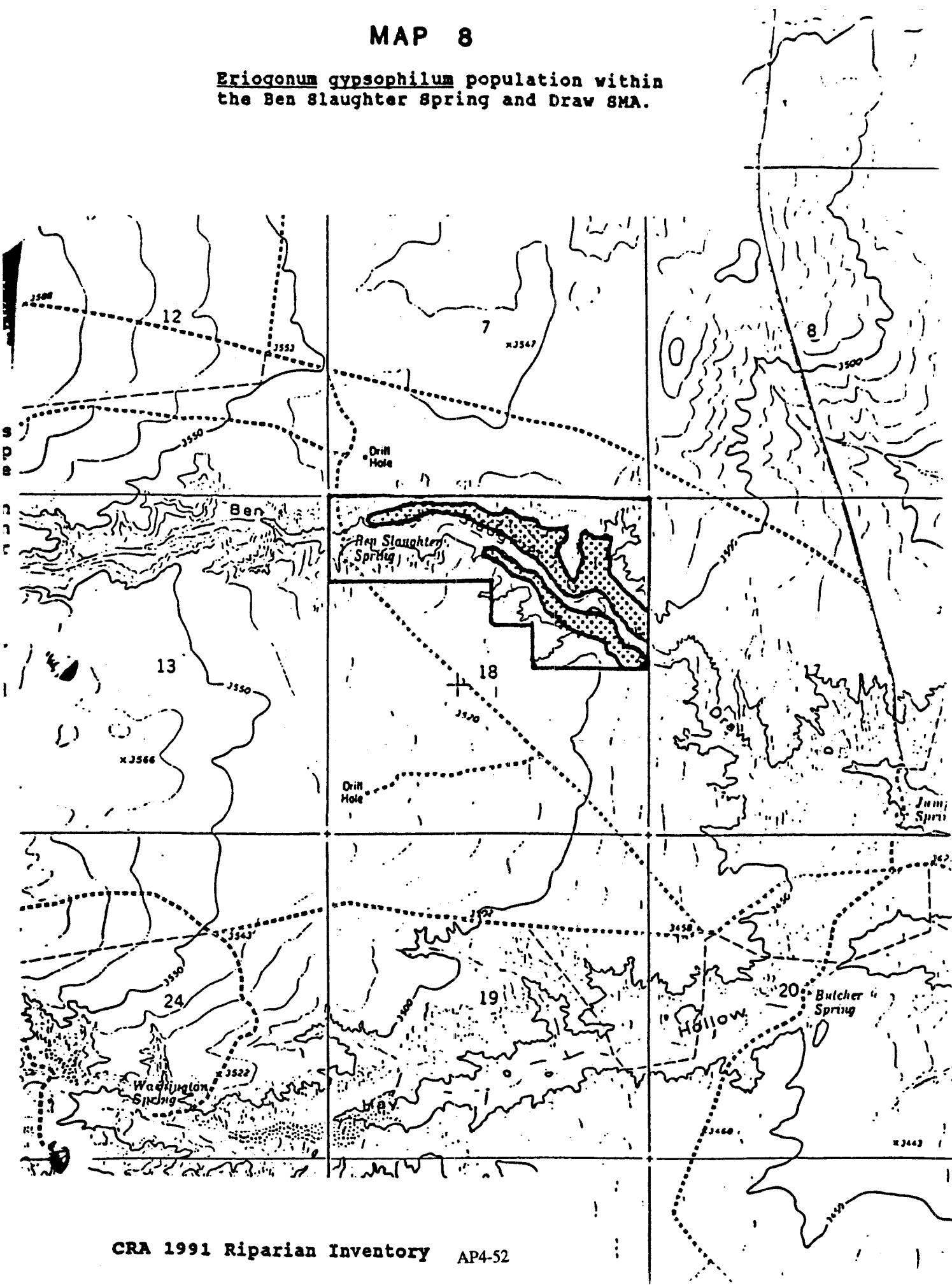


SHEET 14C

R.C.M. 10-23-87

MAP 8

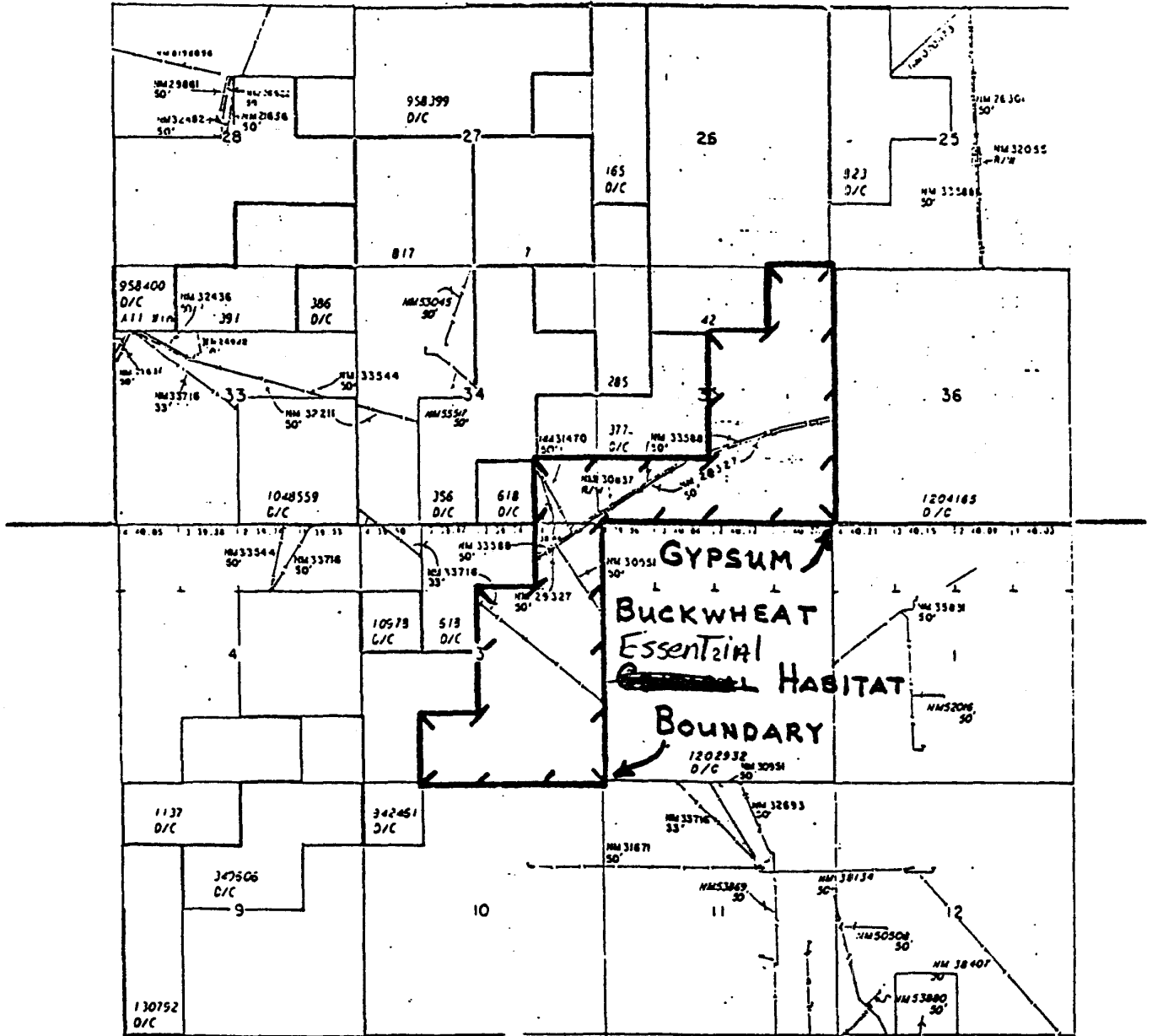
Eriogonum gypsophilum population within
the Ben Slaughter Spring and Draw SMA.



MAP 9

RANGE 26 EAST,
EDDY COUNTY - 015

TOWNSHIP 24 SOUTH



SHEET 14B

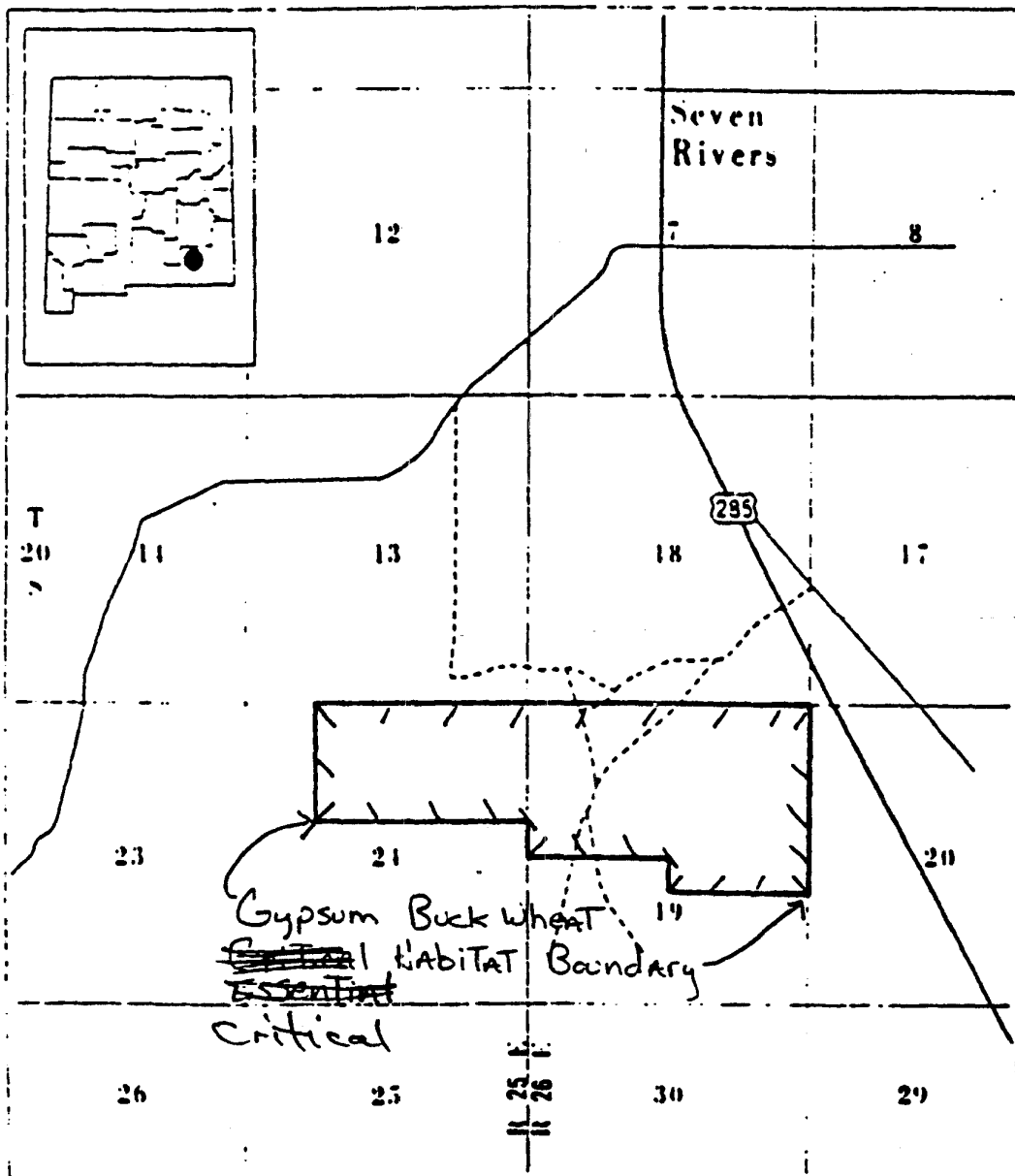
TOWNSHIP 25 SOUTH

R.C.M 10-23-87

MAP 10

GYPSUM WILD BUCKWHEAT

Eddy County, NEW MEXICO



This area was designated as critical habitat when the species was listed so Critical Habitat is the correct term for this area

AP4-54

MAP 11

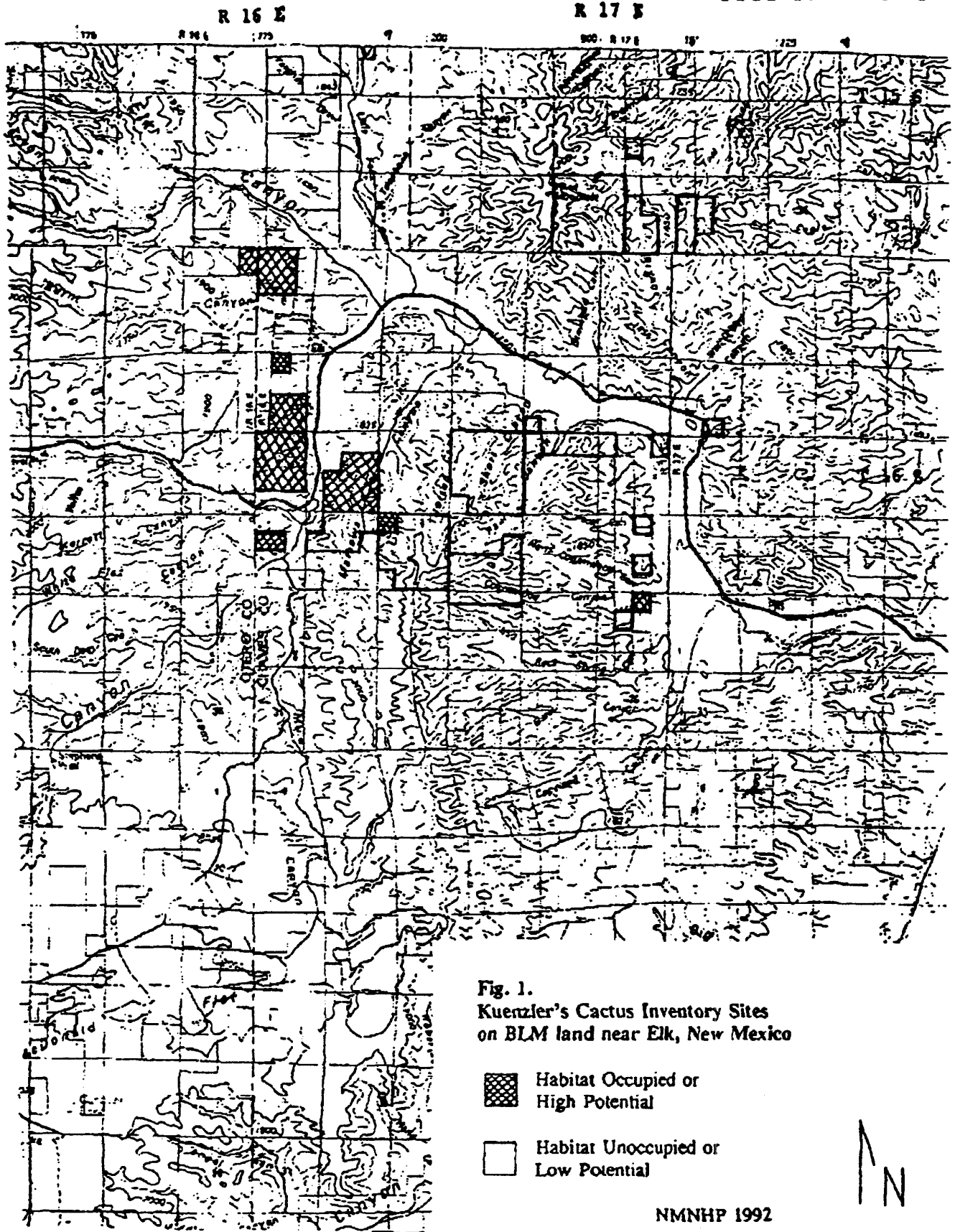


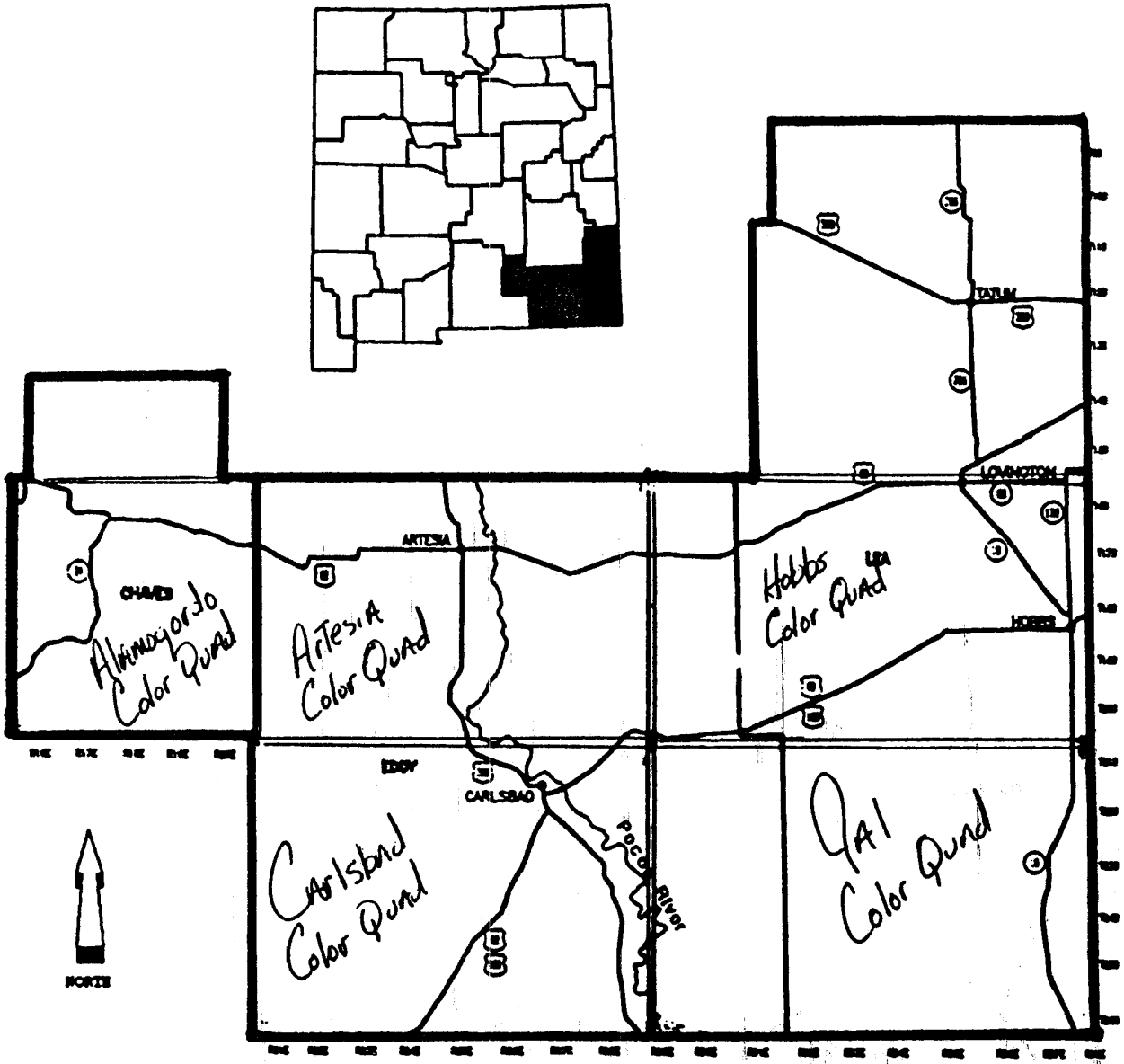


Fig. 1.
Kuenzler's Cactus Inventory Sites
on BLM land near Elk, New Mexico

-  Habitat Occupied or High Potential
-  Habitat Unoccupied or Low Potential



NMNHP 1992



SCALE
1/2" = 13.5 Miles
ALM-Roswell District, 1994

GENERAL LOCATION MAP
Carlsbad Resource Area

APPENDIX 1

OIL & GAS/RIGHTS-OF-WAY CONDITIONS OF APPROVAL

APPENDIX 4
SPECIAL DRILLING STIPULATIONS

1-A

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

OPERATOR'S NAME _____ WELL NO. & NAME _____
 LOCATION _____ F L & _____ P L _____ SEC. _____, T. _____, R. _____
 LEASE NO. _____ COUNTY _____ STATE _____

The special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

I. SPECIAL ENVIRONMENT REQUIREMENTS

- Lesser Prairie Chicken (Stips attached) Floodplain (Stips attached)
 San Simon Swale (Stips attached) Other

II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

The BLM will monitor construction of this drill site. Notify the Carlsbad Resource Area Office at (505) 887-6544 Hobbs Office at (505) 393-3612, at least 3 working days prior to commencing construction.

Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately _____ inches in depth. Approximately _____ cubic yards of topsoil material will be stockpiled for reclamation.

Other

III. WELL COMPLETION REQUIREMENTS

A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded with a drill equipped with a depth indicator (set at a depth of 1/2 inch) with the following seed mixture, in pounds of Pure Live Seed (PLS), per acre.

- A. Seed Mixture 1 (Lowy Sites)
 Lehmanns Lovegrass (*Eragrostis lehmanniana*) 1.0
 Side Oats Grass (*Bouteloua curtipendula*) 3.0
 Sand Dropseed (*Sporobolus cryptandrus*) 1.0

- B. Seed Mixture 2 (Sandy Sites)
 Sand Dropseed (*Sporobolus cryptandrus*) 1.0
 Sand Lovegrass (*Eragrostis trichodes*) 1.0
 Plains Bristlegrass (*Setaria nagrostachya*) 2.0

- C. Seed Mixture 3 (Shallow Sites)
 Sideoats Grass (*Bouteloua curtipendula*) 1.0
 Lehmanns Lovegrass (*Eragrostis lehmanniana*) 1.0
 or Bear Lovegrass (*E. chloromalae*)

- D. Seed Mixture 4 ("Gyp" Sites)
 Alkali Sacaton (*Sporobolus airoides*) 1.0
 Four-Wing Saltbush (*Atriplex canescens*) 3.0

Seeding should be done either late in the fall (September 15 - November 15, before freeze up) or early as possible the following spring to take advantage of available ground moisture.

Other

APPENDIX 4

RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from 8LM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support tract equipment. The pit liner is **NOT TO BE RUPTURED** to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- 1) Lined as specified above and,
- 2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and is capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit content and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to proceed by BLM.

TRASH PIT STIPS

All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

Lease/Case/Serial No.-----

TIMING LIMITATION STIPULATION

No surface use is allowed during the following period(s); unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities:

1. Restricted Surface Disturbance for 24-Hour Continuous Operations:

Oil and gas activities including exploration, drilling, and other development activities will not be allowed during the period of April 1 through May 1 annually. This limitation does not apply to routine maintenance and/or operation of producing wells.

2. The Lesser Prairie Chicken daytime limitation stipulation for Construction:

All construction activities will be restricted to the hours of 9:00 am through 9:00 pm for the period of April 1 through May 31.

APPENDIX 4
SPECIAL DRILLING STIPULATIONS
FOR THE EAST INDIAN BASIN OIL FIELD DEVELOPMENT

THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

OPERATOR'S NAME _____ WELL NAME & NO. _____
LOCATION _____ P__L & _____ P__L SEC. _____, T. ___ S., R. ___ E.
LEASE NO. _____ COUNTY _____

The special stipulations check-marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management (BLM) office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CFR 3165.3 and 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination, whichever is shorter.

I. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

The BLM will monitor construction of this drill site. Notify the Carlsbad Resource Area Office at (505) 887-6544, at least three (3) working days prior to commencing construction.

Roads and the drill pad for this well must be surfaced with a minimum of ___ inches of compacted caliche.

The holder shall comply with the terms, conditions, and stipulations for drilling sites in the Azotea Mesa portion of the East Indian Basin development area, as listed below (The stipulations are ordered as in Exhibit A—missing stipulations are not applicable to APDs):

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the rights-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the rights-of-way (unless the release or threatened release is wholly unrelated to the rights-of-way holder's activity on the rights-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the well site, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever

APPENDIX 4

found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. No project construction can begin unless and until the Mitigation Trust Fund moneys for that action have been received by BLM.

6. The holder shall conduct all activities associated with the construction, operation, and termination of the rights-of-way within the authorized limits of the rights-of-way.

7. No well or plant sites will be allowed on slopes over 20 percent. Other use or occupancy on slopes over 20 percent would be limited. Uses permitted might include mineral material extraction sites, surface pipelines, projects designed to enhance or protect renewable natural resources, or other uses as approved by the Authorized Officer (AO). Projects on these steep grades will be considered on a case-by-case basis, and may require special conditions or stipulations for slope mitigation.

8. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence will be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed in existing fences unless approved by the Authorized Officer.

9. All above-ground structures not subject to safety requirements shall be painted by the holder to reduce visual contrasts and to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The colors selected for this project include: () A "Carlsbad Canyon" (Munsell Soil Color Chart [MSCC] Number 2.5Y 6/2), () B "Slate Gray" (MSCC Number 5Y 6/1), () C "Desert Brown" (MSCC Number 10YR 6/3), and () D "Juniper Green" (no MSCC Number), the color(s) for individual facilities will be specified depending on the site-specific contrasts caused by the individual action. Exceptions to these color requirements may be authorized on a case-by-case basis, if determined to be more effective in meeting site-specific VRM objectives, such as for power poles, fenceposts, signs, etc.

10. The holder shall take whatever steps are necessary to ensure that non-road rights-of-way are not used as roadways. The holder shall not use non-road rights-of-way as roads or access for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder.

11. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

APPENDIX 4

12. Stacks on heater-treaters/separator-dehydrators will be required to be covered to prevent mortality of avian species including neotropical migrants and bats.

13. The BLM will be informed at least two working days prior to any blasting. Notifications of blasting should include the purpose and location of the blasting, the intended date and duration of the blasting, and the estimated volume of the excavation or cut and/or fill.

14. The site will be maintained in neat and orderly condition at all times. All waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human refuse, trash, garbage, debris, petroleum products, brines, chemicals, oil drums, ashes, and equipment. No waste shall be buried on site.

15. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

16. The holder shall reseed all surface disturbed by construction activities. If reseeded is required, it will be done according to the attached seeding requirements (Exhibit B), using the native seed mixture specified.

17. Upon completion of initial construction, the holder will promptly reclaim disturbed areas not necessary for continuing facility operations.

18. Closed circulation systems (steel pits) may be required on steeper slopes, on locations with restricted available area, in rocky zones where digging a pit could involve rock saws or blasting, or in other areas of special concern as determined by the BLM AO in consultation with Industry. Cuttings will be placed in permanent, lined pits, located by the BLM and Industry representatives during the initial on-site BLM-Industry meeting.

When reserve (mud) pits are used, they will be constructed as per the decisions made at the initial on-site meeting between industry and BLM. Pits will be lined with heavy (8 mil) pit liners which are never to be breached. Berms, sufficient to contain any spills or water flows and preferably made from excavated pit material, will be constructed around the pits. Relocation or reorientation of pits, or modified "V" pits, may be required at certain locations. Padding material, such as sand, dirt fines, or straw, may be required to prevent punctures in the bottom of the pit liners.

During reclamation the pits will be allowed to dry, then the liners will be folded over the pit sediments, and the pit will be backfilled. No pit will be drained and no pit liner will be broken. An examination and approval by a BLM representative will be required prior to closure of any reserve pit.

19. BLM will require prompt notification by the operator of any bit drops of four feet or more accompanied by circulation losses greater than 75 percent.

20. To minimize potential impacts to subsurface resources from well drilling, casing, or cementing, the BLM may require specific procedures, such as fresh water drilling in certain zones, special cement additives or sweeps, or cementing casing to the surface. These procedures, if required, will be determined by the BLM Fluid Minerals staff in consultation with the operator.

21. To minimize potential problems due to casing and cementing, the BLM may require the following actions as determined by BLM and the operator:

APPENDIX 4

- (1) Use of cement baskets, external casing packers, multiple-staged and/or remedial cementing to isolate voids encountered;
 - (2) Use of special cements or cement additives to combat lost circulation
 - (3) Use of cement evaluation tools;
 - (4) Cementing all casing strings to surface.
22. Permanent under-liners and berms sufficient to contain any spills will be built under and around storage tanks.
23. If, during on-site inspection, it is determined that surface disturbing activities must be conducted in areas of possible T&E plant habitat (limestone shelves or rocky outcroppings), a T&E species survey may be required prior to authorization of any surface disturbing activities.
24. Cleanup of spills in excess of state-reportable levels should be accomplished using bio-remediation techniques rather than by removing contaminated soil. If measures other than bio-remediation are required for individual spill sites, these special techniques will be approved by the Authorized Officer, BLM, in consultation with the companies.
25. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt, etc.) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. Contact the BLM solid minerals staff for the various options to purchase mineral material.
26. Caliche pits will be reclaimed by sloping their walls, replacing the topsoil, and seeding. In some cases, caliche removed from other sites may be returned, depending on the condition of the caliche.
27. Abandoned surface pipelines and other above-ground equipment will be removed promptly once these are no longer needed, buried pipelines will be flushed and left in place.
28. Sites built on cut-and-fill will be recontoured to blend into the surrounding natural terrain, as nearly as feasible.
29. Special Stipulations:
- A. On a case-by-case basis, BLM may require gates on, or physical restriction to, any new or upgraded road constructed to provide access to a new facility within the study area. The gates or physical barrier would remain closed and locked at all times and access would be granted only to essential company and BLM personnel. This restriction could help to protect important cultural and archaeological sites, as well as wildlife, watershed, and recreation values.
 - B. To maintain Visual Resources along State Highway 137, screening with plantings or natural or man-made materials, such as berms or fencing may be required at some locations.
 - C. Padding material, such as sand, dirt fines, or straw, will be required to prevent punctures in the bottom of the pit liners.
 - D. Other:

II. WELL COMPLETION REQUIREMENTS

A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

Surface Restoration: When the well is completed, the reserve pit(s) will be dried and backfilled, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be recontoured to resemble the original contours of the surrounding terrain and reclaimed as per stipulation number 20. The disturbed area will be reseeded with the following seed mixture, in pounds of Pure Live Seed (PLS) per acre. (Pounds of Pure Live Seed: Pounds of seed x percent purity x percent germination = Pounds Pure Live Seed.)

<input type="checkbox"/> A. Seed Mixture 1 (Loamy Sites)		<input type="checkbox"/> B. Seed Mixture 2 (Sandy Sites)	
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.00	Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.00
Sideoats grama (<i>Boutelous curtipendula</i>)	5.00	Four-wing saltbush DWS* (<i>Atriplex canescens</i>)	0.00
Winterfat (<i>Ceratoides lanata</i>)	1.00	Plains bristlegass (<i>Setaria macrostachya</i>)	5.00
	OR		OR
Mountain Mahogany (<i>Cercocarpus nontanus</i>)	1.00	Desert globeallow (<i>Sphaeralcea ambigua</i>)	0.25
	OR		
Apache plume (<i>Palluis paradoxa</i>)	2.00		
 <input type="checkbox"/> C. Seed Mixture 3 (Shallow Sites)		 <input type="checkbox"/> D. Seed Mixture 4 (Gypsum Sites)	
Sideoats grama (<i>Boutelous curtipendula</i>)	7.00	Alkali Sacaton (<i>Sporobolus airoides</i>)	1.50
Plains Bristlegass (<i>Setaria macrostachya</i>)	5.00	Four-wing saltbush DWS* (<i>Atriplex canescens</i>)	0.00
	OR	*DWS = DeWinged Seed	
Bottlebrush squirreltail (<i>Sitanion heptrix</i>)	5.50		
Mountain Mahogany (<i>Cercocarpus nontanus</i>)	1.00		
	OR		
Apache plume (<i>Palluis paradoxa</i>)	2.00		

Seeding should be done either late in the fall (September 15 - November 15, before freeze up) or early as possible the following spring to take advantage of available ground moisture.

Special: BLM's objective through this mitigative process is to restore disturbed surfaces to a condition as similar to their original state as is feasible and/or blend these areas into the surrounding landscape. To achieve that objective, the following is a list of rehabilitation or reclamation methods that will be considered, in addition to standard procedures, as appropriate for each disturbed area:

- Removal of caliche or other surfacing materials, these materials may be used to fill cuts for restoration or returned to the caliche pits, if the caliche is acceptable;
- Special seed bed preparation and seeding methods;
- Soil amendments, soil treatments, and fertilizers;
- Planting trees and shrubs (from seeds);
- Mulching;
- Initial watering;
- Erosion control and land treatments;
- Special Fencing;
- Other.

Serial No. _____

CONTROLLED SURFACE USE STIPULATION

Surface occupancy or use is subject to the following special operating constraints.

Unless otherwise authorized, surface use or occupancy within the leased lands will be strictly controlled, or if absolutely necessary, excluded.

On the lands described below:

Entire lease (OR AS DESCRIBED).

For the purpose of:

Protecting the following special areas, values, purposes, and sensitive resource conditions:

1. Surface lands within four hundred (400) meters of:
 - Existing and potential wildlife watering sites;
 - Riparian areas, wetlands, springs, water wells, and ephemeral, intermittent, or perennial streams;
 - Raptor nest sites which have been active for the past two years.
2. On slopes over 30 per cent, or over 20 per cent on extremely erodable or slumping soils.
3. Within identified flood hazard zones.

BUREAU OF LAND MANAGEMENT
ROSWELL DISTRICT OFFICE

Roswell 48
August 1992

East Guadalupe Escarpment Study Area

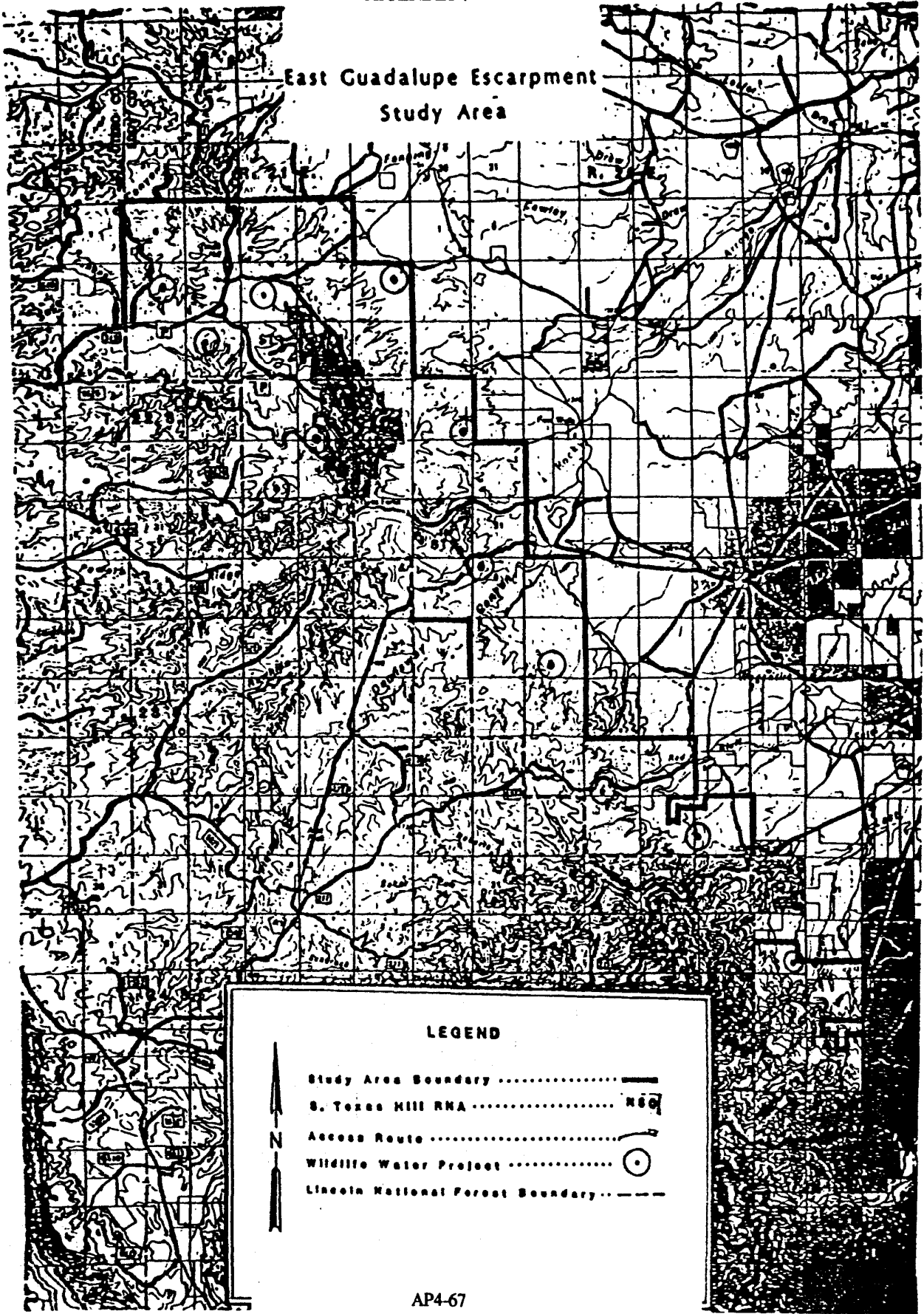


EXHIBIT A

RLM Serial Number: NM-
Company Reference:

STANDARD STIPULATIONS FOR OIL AND GAS RELATED SITES
IN THE ROSWELL DISTRICT, BLM

The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant and for all response costs, penalties, damages, claims, and other costs arising from the provisions of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Chap. 82, Section 6901 *et. seq.*, from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Chap. 109, Section 9601 *et. seq.*, and from other applicable environmental statutes.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the site or related pipeline(s), any oil or other pollutant should be discharged from site facilities, the pipeline(s) or from containers or vehicles impacting Federal lands, the control and total removal, disposal,

Exhibit A
NM-

and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. Sites shall be maintained in an orderly, sanitary condition at all times. Waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, brines, chemicals, oil drums, ashes, and equipment.

6. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

7. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this project is Carlsbad Canyon (formerly sandstone brown), Munsell Soil Color Chart Number 2.5Y 6/2.

8. The holder shall post a sign designating the BLM serial number assigned to this right-of-way grant in a permanent, conspicuous location on the site where the sign will be visible from the entry to the site. This sign will be maintained in a legible condition for the term of the right-of-way.

9. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

10. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. There are several options available for purchasing mineral material: contact the BLM office.

BLM Serial Number _____
 Company Reference _____

BURIED PIPELINE STIPULATIONS FOR THE ROSWELL DISTRICT, BLM

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

(over)

5. All construction and maintenance activity will be confined to the authorized right-of-way.
6. The pipeline will be buried with a minimum cover of _____ inches between the top of the pipe and ground level.
7. Blading of all vegetation (will) (will not) be allowed. Blading is defined as the complete removal of brush and ground vegetation. Clearing of brush species will be allowed. Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface. In areas where blading and/or clearing is allowed, maximum width of these operations will not exceed _____ feet.
8. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.
9. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. A berm will be left over the ditchline to allow for settling back to grade.
10. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.
11. The holder (will) (will not) reseed. If reseeding is required, it will be done according to the attached seeding requirements, using the following seed mix.
- | | | | |
|--------------------------|----------------|--------------------------|----------------|
| <input type="checkbox"/> | seed mixture 1 | <input type="checkbox"/> | seed mixture 3 |
| <input type="checkbox"/> | seed mixture 2 | <input type="checkbox"/> | seed mixture 4 |
12. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" - Carlsbad Canyon, Munsell Soil Color No. 2.5Y 6/2 (formerly Sandstone Brown); designated by the Rocky Mountain Five State Interagency Committee.
13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

16. Special Stipulations:

BLM Serial Number _____
 Company Reference _____

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES
 IN THE ROSWELL DISTRICT, BLM

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:
 - a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.

(over)

b. Activities of other parties including, but not limited to:

- (1) Land clearing.
- (2) Earth-disturbing and earth-moving work.
- (3) Blasting.
- (4) Vandalism and sabotage.

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of _____ feet.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of _____ inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" - Carlsbad Canyon, Munsell Soil Color No. 2.5Y 6/2 (formerly Sandstone Brown); designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. Special Stipulations:

(March 1989)

BLM Serial Number _____
 Company Reference _____

**STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES
 IN THE ROSWELL DISTRICT, BLM**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Poverlines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Poverlines," Raptor Research Foundation, Inc., 1981. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

(over)

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

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Company Reference:

STIPULATIONS FOR RIGHTS-OF-WAY IN THE EAST INDIAN BASIN OIL FIELD
DEVELOPMENT AREA IN THE ROSWELL DISTRICT, BLM

The following stipulations were developed from case NM-92026 for site and corridor projects in the development area. The holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer, BLM.

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et. seq.) with regard to any toxic substances that are used, generated by or stored on the rights-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-79. and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et. seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et. seq.) on the rights-of-way (unless the release or threatened release is wholly unrelated to the rights-of-way holder's activity on the rights-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the Authorized Officer may take such measures as deemed necessary to control and cleanup the

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discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

5. No project construction can begin unless and until the Mitigation Trust Fund moneys for that action have been received by BLM. The MTF fee for this project is \$_____.00. Make out the check to Department of the Interior, BLM.

6. The holder shall conduct all activities associated with the construction, operation, and termination of the rights-of-way within the authorized limits of the rights-of-way.

7. No well or plant sites will be allowed on slopes over 20 percent. Other use or occupancy on slopes over 20 percent would be limited. Uses permitted might include mineral material extraction sites, surface pipelines, projects designed to enhance or protect renewable natural resources, or other uses as approved by the Authorized Officer (AO). Projects on these steep grades will be considered on a case-by-case basis, and may require special conditions or stipulations for slope mitigation.

8. General blading of all vegetation will not be allowed. (Blading is defined as the complete removal of brush and ground vegetation.) Clearing of brush species, while leaving ground vegetation (grasses, weeds, etc.) intact, will be allowed. Clearing may include removal or smoothing of rocks, hummocks, or uneven areas for reasons of safety or if necessary for construction of the authorized action. In areas where blading and/or clearing is allowed, the maximum width of these operations will not exceed 40 feet.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair impacted improvements to at least their former state. The holder shall contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence will be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed in existing fences unless approved by the Authorized Officer.

10. All above-ground structures not subject to safety requirements shall be painted by the holder to reduce visual contrasts and to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The colors selected for this project include A "Carlsbad Canyon" (Munsell Soil Color Chart [MSCC] Number 2.5Y 6/2), B "Slate Gray" (MSCC Number 5Y 6/1), C "Desert Brown" (MSCC Number 10YR 6/3), and D "Juniper Green" (no MSCC Number), the color(s) for individual facilities will be specified depending on the site-specific contrasts caused by the individual action. Exceptions to these color requirements may be

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authorized on a case-by-case basis, if determined to be more effective in meeting site-specific VRM objectives, such as for wood power poles, fenceposts, signs, etc.

11. The holder shall post signs designating the BLM serial number (NM-_____) assigned to the right-of-way grant at the following locations: for linear projects, the points of origin and completion, or entry to and exit from public lands, of the right-of-way and at all major road crossings; power lines may use the meter poles. Site project signs will be visible from the site entry. These signs will be posted in a permanent, conspicuous manner and will be maintained in a legible condition for the term of the right-of-way.

12. The holder shall take whatever steps are necessary to ensure that non-road rights-of-way are not used as roadways. The holder shall not use non-road rights-of-way as roads or access for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder.

13. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

14. The period of time that any trenches or other excavations (except mud pits) are kept open will be held to the minimum compatible with construction requirements. Open trenches will have ramps, bridges, or earthen plugs, at least six feet wide, every one-quarter mile to pass livestock and wildlife.

15. Stacks on heater-treaters/separator-dehydrators will be required to be covered to prevent mortality of avian species including neotropical migrants and bats.

16. The BLM will be informed at least two working days prior to any blasting. Notifications of blasting should include the purpose and location of the blasting, the intended date and duration of the blasting, and the estimated volume of the excavation or cut and/or fill.

17. Sites will be maintained in neat and orderly conditions at all times. All waste materials, both liquid and solid, shall be disposed of promptly at an appropriate, authorized waste disposal facility in accordance with all

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applicable State and Federal laws. "Waste" means all discarded matter including, but not limited to, human refuse, trash, garbage, debris, petroleum products, brines, chemicals, oil drums, ashes, and equipment. No waste shall be buried on site.

18. In those areas where erosion control structures are required to stabilize soil conditions, the holder shall install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound management practices. Any earth work will require prior approval by the Authorized Officer.

19. The holder shall reseed all surface disturbed by construction activities. Reseeding is not required on power lines or surface pipelines except where significant surface disturbance has occurred. If reseeded is required, it will be done according the attached seeding requirements (Exhibit B), using the native seed mixture specified.

20. Upon completion of initial construction, the holder will promptly reclaim disturbed areas not necessary for continuing facility operations.

21. Vegetation, soil, and rocks left as a result of construction, drilling, or maintenance activity will be randomly scattered over the project area and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. A berm will be left over the ditch line to allow for settling back to grade.

22. Differential pressure shut-off valves may be used to protect certain critical habitats from continuing pipeline leaks. Use and location of these S-O valves will be determined by the Authorized Officer, BLM, in consultation with industry, and will be described in the special stipulations.

23. Underground pipelines will be buried with a minimum cover of 32 inches between the top of the pipe and normal ground level where soils permit, a cover of 12 inches through rock, and at least 48 inches deep through arroyos. Special burial or surface installations may be authorized through the AO, BLM.

24. Sturdy, durable under-liners and berms sufficient to contain any spills will be built under and around permanent storage tanks.

25. A BLM wildlife biologist will be present during on-site inspection to flag roads and pipeline corridors around sensitive wildlife habitat. During on-site inspection, if it is determined that surface disturbing activities must be conducted in areas of possible T&E plant habitat (limestone shelves or rocky outcroppings), a T&E species survey may be required prior to authorization of any surface disturbing activities.

Exhibit A
NM-

26. Cleanup of spills in excess of state-reportable levels should be accomplished using bio-remediation techniques rather than by removing contaminated soil. If measures other than bio-remediation are required for individual spill sites, these special techniques will be approved by the Authorized Officer, BLM, in consultation with the companies.

27. A sales contract for removal of mineral material (caliche, sand, gravel, fill dirt, etc.) from an authorized pit, site, or on location must be obtained from the BLM prior to commencing construction. Contact the BLM solid minerals staff for the various options to purchase mineral material.

28. Caliche pits will be reclaimed by sloping their walls, replacing the topsoil, and seeding. In some cases, caliche removed from other sites may be returned, depending on the condition of the caliche.

29. Abandoned surface pipelines, overhead power lines and other above-ground equipment will be removed promptly once these are no longer needed; buried pipelines will be flushed and left in place.

30. Sites built on cut-and-fill will be recontoured to blend into the surrounding natural terrain, as nearly as feasible.

31. Power lines shall be constructed to standards outlined in "Suggested Practices for Raptor Protection on Powerlines," Raptor Research Foundation, Inc., 1981, unless otherwise agreed to by the Authorized Officer in writing. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "eagle safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modification and/or additions shall be made by the holder without liability or expense to the United States.

33. Special Stipulations:

Special Stipulations for the East Indian Basin-Azotea Mesa Development:

A. On a case-by-case basis, BLM may require gates on, or physical restriction to, any new or upgraded road constructed to provide access to a new facility within the study area. The gates or physical barrier would remain closed and locked at all times and access would be granted only to essential company and BLM personnel. This restriction could help to protect important cultural and archaeological sites, as well as wildlife, watershed, and recreation values.

Exhibit A
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B. To maintain Visual Resources along State Highway 137, screening with plantings or natural or man-made materials, such as berms or fencing may be required at some locations.

C. BLM's objective through this mitigative process is to restore disturbed surfaces to a condition as similar to their original state as is feasible and/or blend these areas into the surrounding landscape. To achieve that objective, the following is a list of rehabilitation or reclamation methods that will be considered, in addition to standard procedures, as appropriate for each disturbed area:

- Removal of caliche or other surfacing materials, these materials may be used to fill cuts for restoration or returned to the caliche pits, if the caliche is acceptable;
- Special seed bed preparation and seeding methods;
- Soil amendments, soil treatments, and fertilizers;
- Planting trees and shrubs (from seeds);
- Mulching;
- Initial watering;
- Erosion control and land treatments;
- Special Fencing.

Note: Please remember the Mitigation Trust Fund fee of \$_____.00.
(See Standard Stipulation No. 5.)

EXHIBIT A

BLM Serial Number: _____

Company Reference: _____

STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS
THE ROSWELL DISTRICT, BLM

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

GENERAL REQUIREMENTS

The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

Holder agrees to comply with the following stipulations:

1. ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

Those segments of road where grade is in excess of 10% for more than 300 feet shall be designed by a professional engineer.

2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).

Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

Flat-blading is authorized on segment(s) delineated on the attached map.

3. DRAINAGE

Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in ‰):

SPACING INTERVAL FOR TURNOUT DITCHES	
Percent slope	Spacing interval
0‰ - 4‰	400' - 150'
4‰ - 6‰	250' - 125'
6‰ - 8‰	200' - 100'
8‰ - 10‰	150' - 75'

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

400 foot intervals.

___ foot intervals.

locations staked in the field as per spacing intervals above.

locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

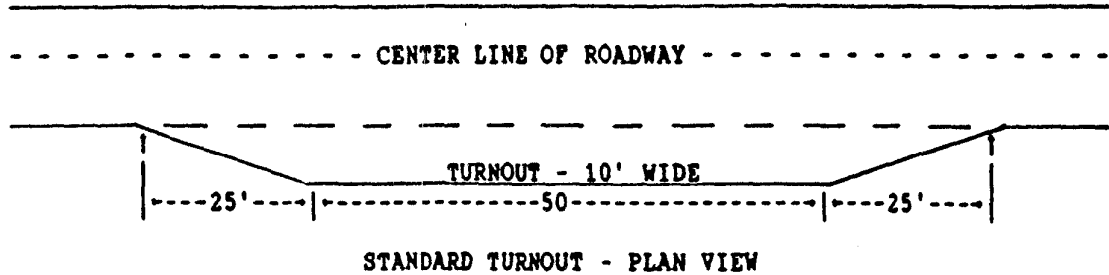
C. On road slopes exceeding 2‰, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

$$\text{spacing interval} = \frac{400'}{\text{road slope in } \text{‰}} + 100'$$

Example: 4‰ slope: spacing interval = $\frac{400}{4} + 100 = 200$ feet

4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

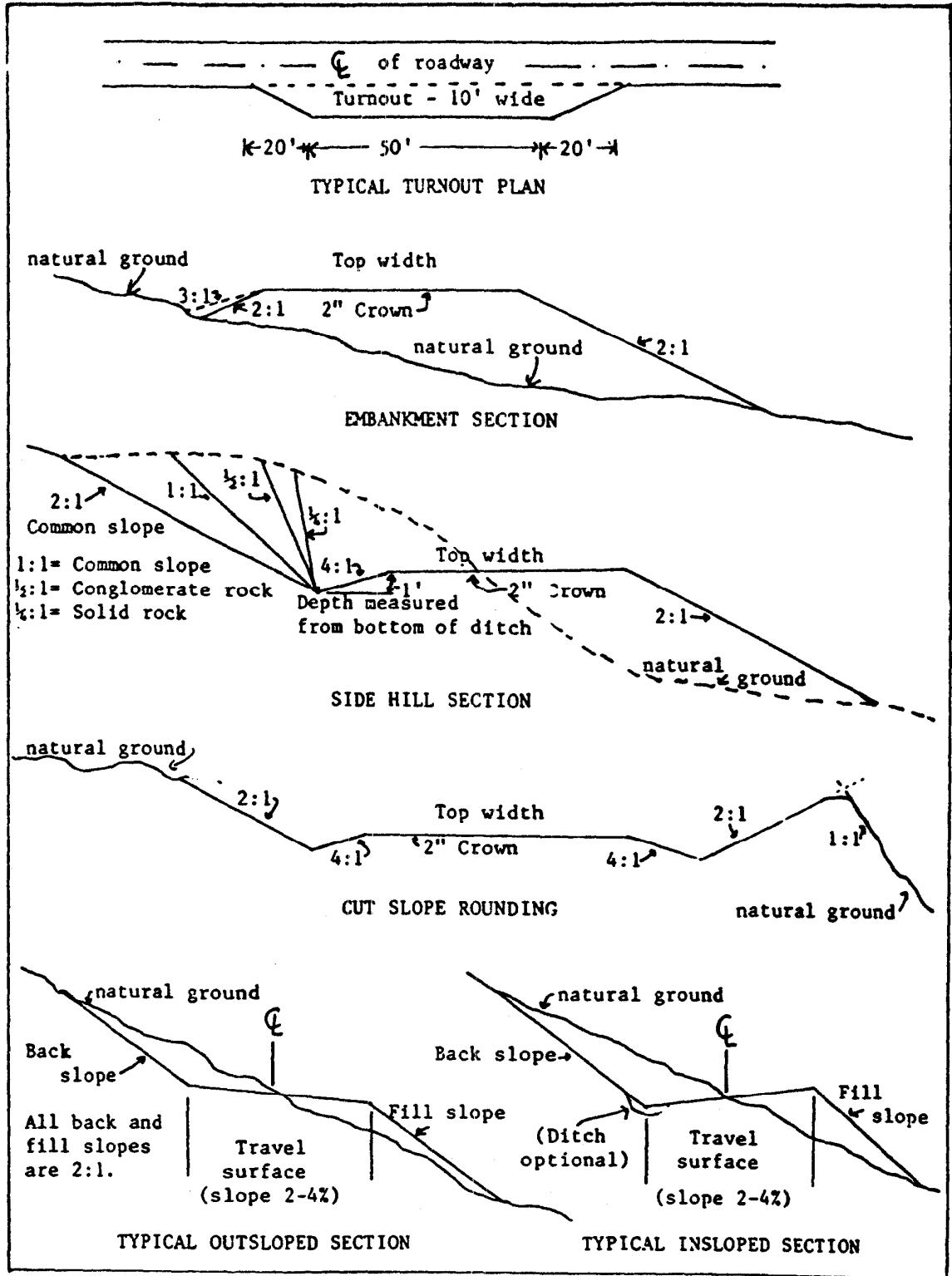
9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

10. SPECIAL STIPULATIONS:

APPENDIX 4
FIGURE 1: CROSS-SECTIONS AND PLANS FOR TYPICAL ROAD CONSTRUCTION REPRESENTATIVE OF BLM RESOURCE, AND HIGHER CLASS, ROADS.

(Travel way, top width, driving surface, and travel surface are synonymous.)



APPENDIX 2

RANGE PROJECTS

CONDITIONS OF APPROVAL

STIPULATIONS

FENCE CONSTRUCTION

I. Environmental and Antiquities Protection

A. Antiquities

In the event the cooperator discovers sites containing evidence of antiquities within the construction area, he shall immediately cease construction and notify the area manager (AM). The area manager will then take appropriate steps to relocate the improvement to eliminate damage to the antiquities.

B. Clearing

Clearing, grading, and other soil and vegetative disturbance will be kept to the minimum necessary for construction. Fenceline right-of-way clearing shall be limited to hand clearing and then only wide enough to allow construction. Authorization for additional clearing must be obtained in writing from the area manager before construction begins.

C. Access Roads

Approved access roads to the project site(s) are shown on the map attached to the permit or agreement. Vehicular traffic associated with construction and/or maintenance of the project will be confined to the identified route. Provided, additional temporary roads are needed for the construction and/or maintenance along side linear projects, prior approval must be obtained from the BLM's authorized officer and shall be limited to hand clearing of brush, trees, and boulders which hinder or prohibit vehicle traffic. If temporary roads cross slopes greater than 15 percent, special stipulations will be required to prevent soil erosion. The BLM's authorized officer may require a road maintenance agreement covering the approved access road to the project.

D. Erosion Control

The cooperator shall construct water bars on areas of disturbed right-of-way and temporary access roads in accordance with the attached drawing after construction of the improvement. Water bars shall be constructed in conformance with the following:

- (1) All water bars will extend a minimum of ten (10) feet on each side of the disturbed area or road into undisturbed sod or soil.
- (2) The spillway end of the structure will be disturbed as little as possible.
- (3) The water bars will cross the road or disturbed area at an angle of approximately 15 degrees.

(3) The water bars will cross the road or right-of-way at an angle of approximately fifteen (15) degrees.

(4) The horizontal distance between the water bars will vary according to the slope. The maximum distance between bars will be as follows:

X Slope

less than 2%.....200 feet
 2% to 4%.....100 feet
 4% to 5%..... 75 feet
 more than 5%..... 50 feet

E. Aesthetics

Pipelines and associated facilities will be located in such a manner as to minimize the visual effect on the environment. Storage tanks and troughs will be located off of ridge tops and the cooperators is required to paint all above ground structures sandstone brown to blend in with the landscape with 60 days of completion.

F. The area manager may require that the project be altered after installation in any way to meet the requirements specified herein.

G. Wildlife

(1) All livestock watering facilities will provide water for wildlife on public lands where the need has been identified whether from existing and/or new range improvements.

(2) Structures and provisions will be provided for wildlife use including wildlife ramps and/or float boards in all watering troughs. All wildlife ramps:

(a) Place one ramp for every 30 linear feet upon circular watering tanks

(b) Sides of wildlife ramps must be flush with inner wall contour of watering tank and all sides must be sloped.

(3) WATER WILL BE AVAILABLE YEARLONG.

(4) Tub height will not exceed 18 inches.

STIPULATIONS

CORRAL CONSTRUCTION

I. Environmental and Antiquities Protection

A. Antiquities

In the event the cooperators discover sites containing evidence of antiquities within the construction area, he shall immediately cease construction and notify the area manager (AM). The area manager will then take appropriate steps to relocate the improvement to eliminate damage to the antiquities.

B. Clearing

Clearing, grading, and other soil and vegetative disturbance will be kept to the minimum necessary for construction. Authorization for additional clearing must be obtained in writing from the area manager before construction begins.

C. Access Roads

Approved access roads to the project site(s) are shown on the map attached to the permit or agreement. Vehicular traffic associated with construction and/or maintenance of the project will be confined to the identified route. Provided, additional temporary roads are needed for the construction and/or maintenance along side linear projects, prior approval must be obtained from the BLM's authorized officer and shall be limited to hand clearing of brush, trees, and boulders which hinder or prohibit vehicle traffic. If temporary roads cross slopes greater than 15 percent, special stipulations will be required to prevent soil erosion. The BLM's authorized officer may require a road maintenance agreement covering the approved access road to the project.

D. Aesthetics

Corrals will be located in such a manner as to minimize the visual effect on the environment. This can be done by locating corrals off of ridge tops, and holding clearing and surface disturbance to a minimum. Corrals will also be located in such manner as to avoid increased erosion.

E. The area manager may require that the project be altered after installation in any way to meet the requirements specified herein.

F. Clean-up

The cooperators shall be responsible for cleaning up all camp and work sites before leaving the area. Final approval of this permit will be withheld until the cooperators have complied with the requirement.

STANDARD STIPULATIONS**PIPELINES****I. Environmental and Antiquities Protection.****A. Antiquities**

In the event the cooperator discovers sites containing evidence of antiquities within the construction area, he shall immediately cease construction and notify the Area Manager. The Area Manager will then take appropriate steps to relocate the improvement to eliminate damage to the antiquities.

B. Clearing

Clearing and blading necessary for construction will be held to the absolute minimum. Without prior agreement, these actions will not exceed those limits agreed upon at the pre-construction inspection. Vegetation removed will be "walked-down" in place.

Clearing and grading at watering facilities and storage tank locations will not exceed the diameter of the facility plus ten (10) feet.

C. Access Roads

Approved access roads to the project site(s) are shown on the map attached to the permit or agreement. Vehicular traffic associated with construction and/or maintenance of the project will be confined to the identified route. Provided, additional temporary roads are needed for the construction and/or maintenance along side linear projects, prior approval must be obtained from BLM's authorized officer and shall be limited to hand clearing of brush, trees, boulders which hinder or prohibit vehicle traffic. If temporary roads cross slopes greater than 15 percent, special stipulations will be required to prevent soil erosion. The BLM's authorized officer may require a road maintenance agreement covering the approved access road to the project.

D. Erosion Control

The cooperator shall prevent erosion on areas of disturbed right-of-way access roads and along the project route by the construction of water bars. Water bars shall be constructed in conformance with the attached drawing and the following:

(1) All water bars will extend a minimum of ten (10) feet on each side of the disturbed area onto undisturbed sod or soil.

(2) The spillway end of the structure will be disturbed as little as possible.

APPENDIX 3

LEASING STIPULATIONS

ROSWELL DISTRICT

Roswell District Office

Roswell 1	National Register of Historic Places Site (no surface occupancy)
Roswell 2	Important Seasonal Wildlife Habitat (time restriction)
Roswell 3	Important Seasonal Wildlife Habitat (time restriction)
Roswell 4	Mescalero Sands Natural Area (no surface occupancy)
Roswell 5	Cave Area (controlled surface use)
Roswell 6	Torgac Cave Natural Landmark (no surface occupancy)
Roswell 7	Maroon Cliffs Archaeological District (no surface occupancy)
Roswell 8	Torgac Cave Natural Landmark (no lease)
Roswell 9	Laguna Plata Archaeological District (no surface occupancy)
Roswell 10	Mathers Natural Area (no lease)
Roswell 11	Wetlands Habitat (no surface occupancy)
Roswell 12	Ute Lake State Park (controlled surface use)
Roswell 13	Bottomless Lake State Park (controlled surface use)
Roswell 14	Valley of Fires State Park (controlled surface use)
Roswell 15	Living Desert State Park (no surface occupancy)
Roswell 16	Threatened Plant Species (no surface occupancy)
Roswell 17	WIPP Exchange Selected Lands (no lease)
Roswell 18	Maroon Cliffs (controlled surface use)
Roswell 19	Cave Resources (no surface occupancy)
Roswell 20	Draw Cave Complex (controlled surface use)
Roswell 21	South Texas Hill Canyon (no surface occupancy)
Roswell 22	Natural and Scenic Values (no surface occupancy)
Roswell 23	Dark Canyon (controlled surface use)
Roswell 24	Dark Canyon (timing limitation)
Roswell 25	Guadalupe Escarpment (controlled surface use)
Roswell 26	Bogle Flat Spring (controlled surface use)
Roswell 27	Preservation Spring (controlled surface use)
Roswell 28	Cottonwood Spring and Draw (no surface occupancy)
Roswell 29	Owl Spring (controlled surface use)
Roswell 30	Ben Slaughter Draw (no surface occupancy)
Roswell 31	Blue Spring (controlled surface use)
Roswell 32	Yeso Hills (no surface occupancy)
Roswell 33	Critical Habitat for Threatened and Endangered Species (no surface occupancy)
Roswell 34	Critical Habitat for Threatened and Endangered Species (controlled surface use)
Roswell 35	Historic Values (no surface occupancy)
Roswell 36	Protection of Nesting Habitat (timing restriction)
Roswell 37	Archaeological Values (no surface occupancy)
Roswell 38	Archaeological Values (controlled surface use)
Roswell 39	Pecos River/Canyon Complex (no surface occupancy)
Roswell 40	Pecos River/Canyon Complex (controlled surface use)
Roswell 41	Pecos River Corridor (no surface occupancy)
Roswell 42	Southern Gypsum Soil Area (controlled surface use)
Roswell 43	Open Potash Mine Workings (no surface occupancy) (applied after review)
Roswell 44	Wetland or Riparian Habitat (controlled surface use)
Roswell 45	Pecos River Floodplain (no surface occupancy)
Roswell 46	Potential Cave or Karst Occurrence Area (lease notice)
Roswell 47	T&E or Sensitive Species (LN - Lease notice)
Roswell 48	Special Areas and Values (controlled surface use)
Roswell 49	Steep slopes / Flood Hazards (controlled surface use)
Roswell 50	Dark Canyon / Lechuguilla Cave Protection Area (No Leasing)
Roswell 51	Dune Sagebrush Lizard (Lease Notice)

APPENDIX 4

APPENDIX 4
SPECIAL MANAGEMENT AREAS

This appendix includes a description (General Description, Management Goals, and Management Prescriptions) and map for each Special Management Area. Maps were not included for the cultural resource management areas to protect the sensitive resources.

The Cave Resources SMA and the Springs Riparian Habitat SMA each include several units. These units were combined into one narrative and general location map. Exceptions were the Chosa Draw ACEC (SMA 2f) and Blue Spring ACEC (SMA 6f) which received individual attention due to the ACEC status.

Former SMA number 13 (Los Medanos Raptor Area) and 14 (San Simon Swale Pronghorn Habitat) are excluded because of removal as SMAs from previous documents. These numbers were just passed over to maintain numbering consistency among all the RMP documents.

For ease of reference, the following list identifies each SMA narrative by number:

<u>SMA No.</u>	<u>Special Management Area</u>	<u>Page No.</u>
1	Seven Rivers Hills	C-2
2(a-h)	Cave Resources	C-4
2(f)	Chosa Draw (ACEC)	C-6
3	South Texas Hill Canyon	C-8
4	Dark Canyon	C-10
5	Lonesome Ridge	C-12
6(a-f)	Springs Riparian Habitat	C-14
6f	Blue Spring ACEC	C-16
7	Yeso Hills	C-18
8	Bluntnose Shiner Habitat	C-20
9	Little McKittrick Draw	C-22
10	Laguna Plata	C-24
11	Maroon Cliffs	C-25
12	Potash Bull Wheel	C-26
15	Phantom Banks Heronries	C-27
16	Poco Site	C-28
17	Bear Grass Draw	C-29
18	Pecos River/Canyons Complex	C-30
19	Pope's Well	C-32
20	Guadalupe Escarpment Scenic Area	C-33
21	Alkali Lake ORV Use Area	C-35
22	Hackberry Lake ORV Use Area	C-37
23	Pecos River Corridor	C-39

APPENDIX 4

1. SEVEN RIVER HILLS

General Description:

These bare gypsum hills were the only known habitat for gypsum wild buckwheat (Eriogonum gypsophilum) for 90 years. This area is Federally designated as Critical Habitat and is one of only three known populations of this species. This area also provides habitat for other unique and endemic vegetation existing on gypsum soils. Most of the area consists of bare steep slopes and deep eroded arroyos.

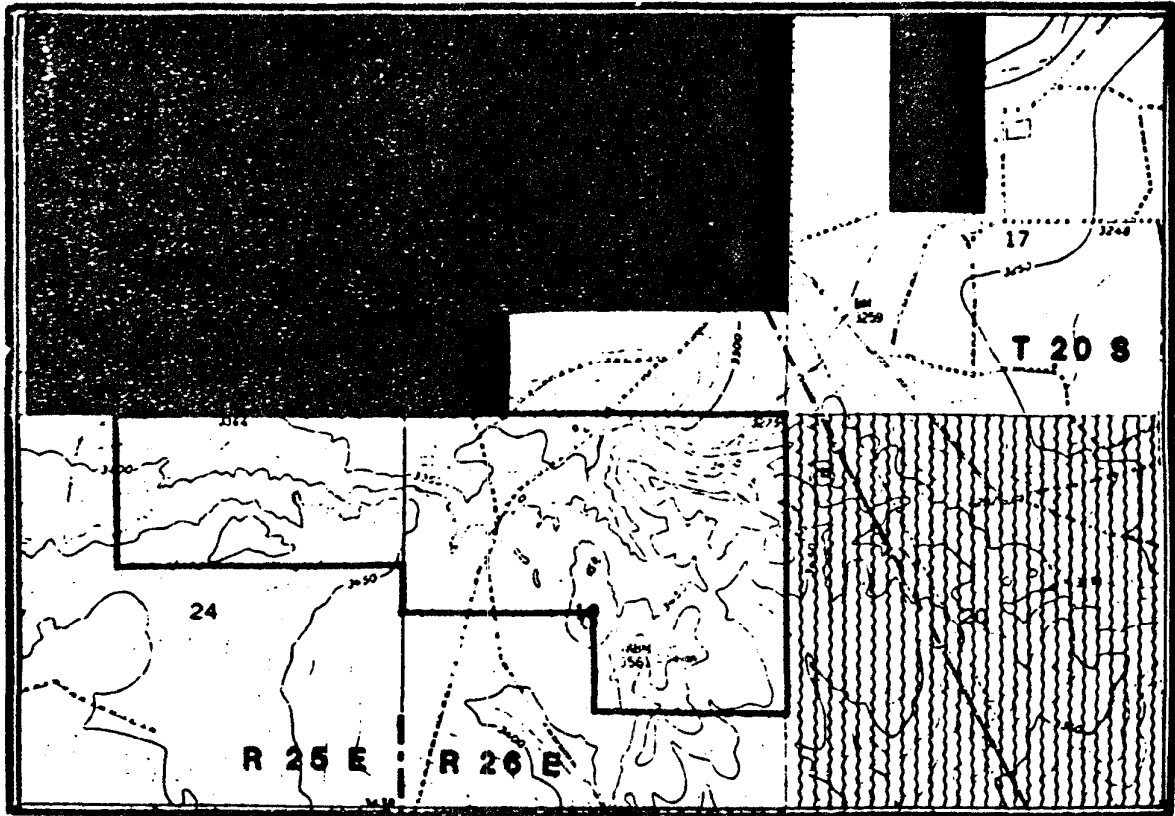
Management Goals:

The main objective of this 540 acre Special Management Area (SMA) is to protect and enhance habitat for gypsum wild buckwheat and other endemic plant species.

Management Prescriptions: (For entire 540 acres)

1. Apply no surface occupancy stipulation upon all future oil and gas leases.
2. Avoid future right-of-way actions through the SMA.
3. Withdraw from mining claim location and close to mineral material disposal and solid mineral leasing.
4. Complete limited ORV designation and implementation plan to restrict vehicles to designated routes.
5. Restrict fire suppression and geophysical operations to comply with ORV designation.
6. Restrict surface disturbance including plant collections and camping within the area.


SMA No. 1- SEVEN RIVERS HILLS HMA (540 Acres)



0 1/2 1 mile


SCALE

MAP LEGEND

 HABITAT MANAGEMENT AREA

 BLM

 PRIVATE

 BUREAU of RECLAMATION

2a-2j. CAVE RESOURCES

General Description:

The caves SMA includes eight cave areas encompassing 8,450 public surface acres. These areas receive intensive recreational use and contain unique and nonrenewable geologic, biologic, paleontologic, and hydrologic resources. The caves are used for recreational, educational, and scientific purposes.

Management Goals:

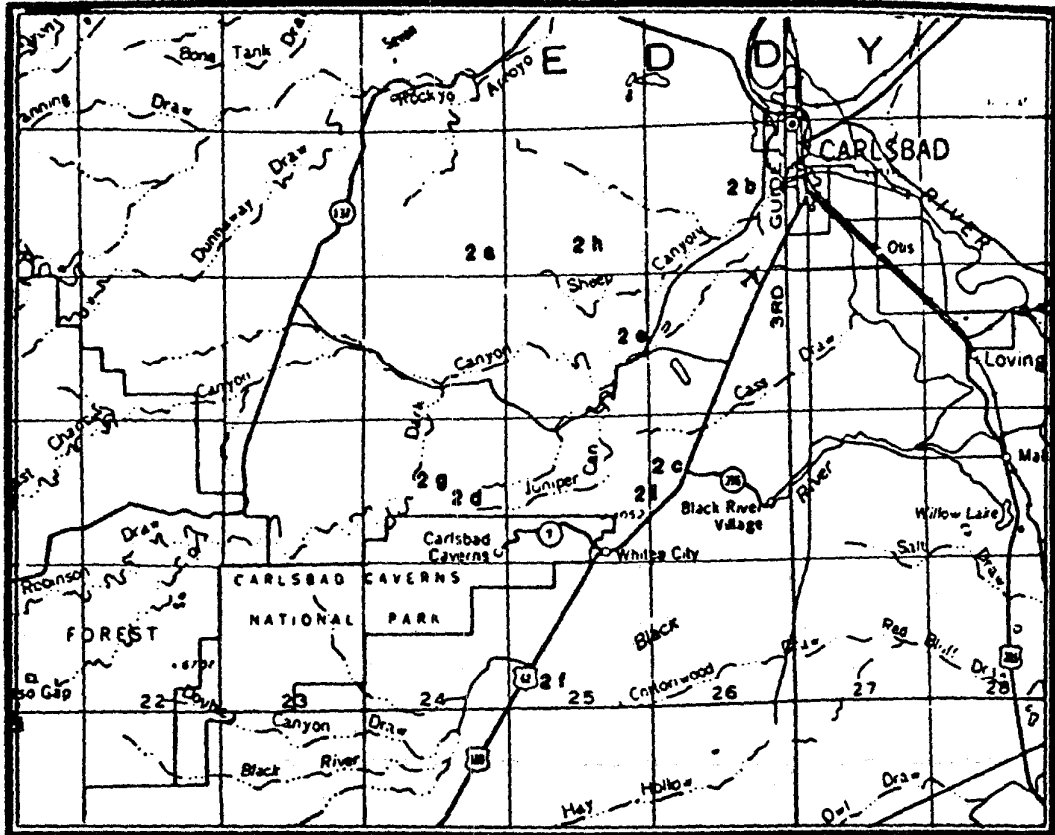
Management objectives are to protect the scenic and other natural values of all cave resources while still allowing for recreation, education, and scientific uses.

Management Prescriptions:

For detailed prescriptions and acreage figures by cave area refer to the Decision Table in Appendix A.

1. Apply no surface occupancy stipulation to future oil and gas leases.
2. Avoid future right-of-way actions through the cave areas.
3. Withdraw from mining claim location and close to solid mineral leasing and mineral material disposal.
4. Restrict surface disturbance to prevent impacts to cave resources.
5. Designate either closed or limited to ORV use. Limited areas will restrict vehicular use to designated routes.
6. Restrict fire suppression and geophysical exploration to comply with ORV restrictions. Restrictions on geophysical methods such as blasting will also be imposed to prevent damage to fragile cave formations.
7. Attempt to acquire private surface estate having significant cave resources.
8. Manage under VRM Class II, III and IV guidelines as identified for each cave unit.

SMA 2A-2I CAVES SRMA



MAP LEGEND



- 2a. McKittrick Hill Cave
- 2b. Lost Cave
- 2c. Fente Canyon Caves
- 2d. Manhole Caves
- 2e. Yellowjacket/Lair Caves
- 2f. Chosa Draw Caves ACEC
- 2g. Mudgette Caves
- 2h. Honest Injun Cave
- 2i. KFF Caverns



2f. CHOSA DRAW ACEC

General Description:

The ACEC contains 2,200 acres of hydrologically important gypsum karst. It has significant caves, sinking streams, springs, and numerous sink holes. The area is sensitive to soil erosion and surface disturbing activities. The cave resources provide recreational opportunities as well as habitat for cave adapted animal species and point sources for ground water recharge.

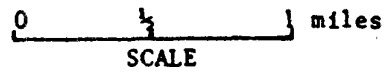
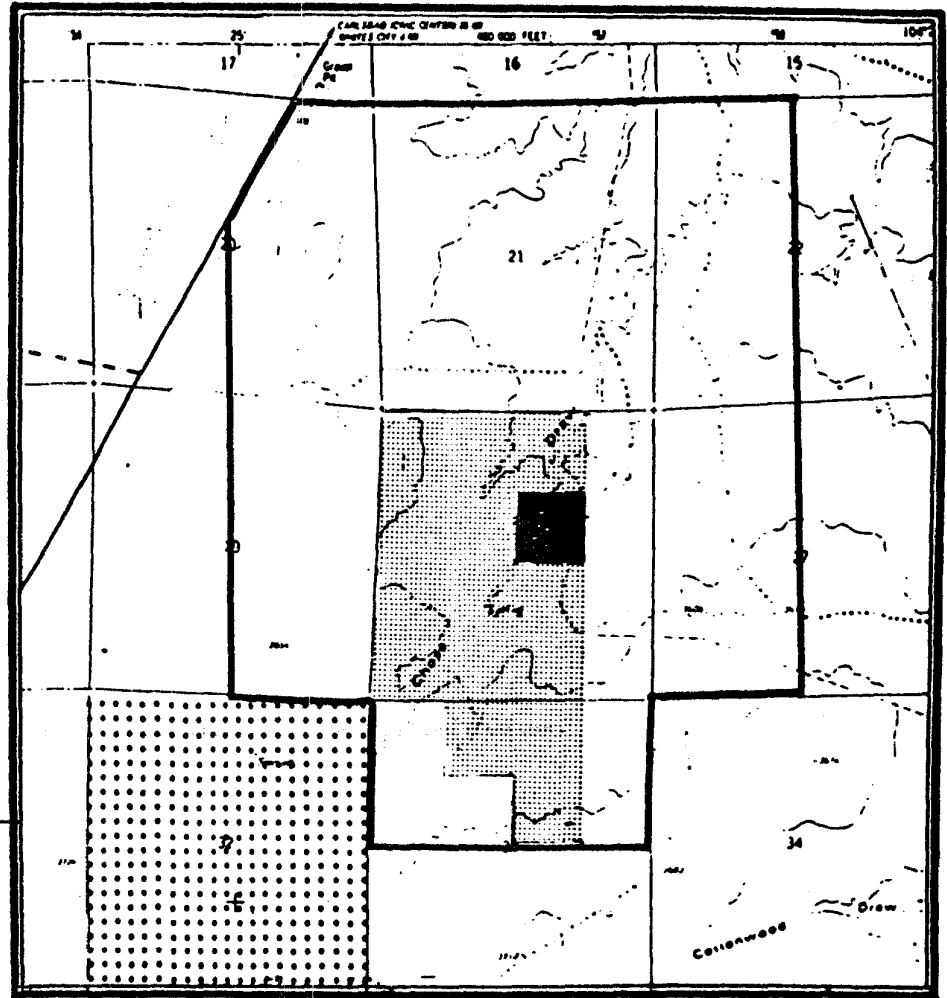
Management Goals:

Primary management objectives are to protect the sensitive karst resources and fragile surface to subsurface interactions. Of primary importance is protection of this significant hydrologic area. Other management goals are to enhance cave based recreation, education, and scientific use opportunities.





Management Prescriptions:

1. Apply no surface occupancy (NSO) stipulation to future oil and gas leases on 1,160 acres.
2. Avoid future right-of-way actions within 1,160 acres.
3. Restrict surface disturbance throughout the area to minimize erosion and impacts to cave and hydrologic resources.
4. Close the entire area, including an additional 440 acres of private surface-federal mineral estate, to solid mineral leasing and mineral material disposal.
5. Withdraw 1,160 acres from mining claim location.
6. Designate entire area limited to ORV use to designated routes.
7. Restrict fire suppression and geophysical exploration to conform to ORV limitations.
8. Attempt to acquire 480 acres of non-Federal surface estate.
9. Manage 720 acres to conform to VRM Class III guidelines and the remaining 1,480 acres under VRM Class IV guidelines.

SMA 2F CHOSA DRAW ACEC



MAP LEGEND

-  Private Surface
Private Minerals
-  Private Surface
Federal Minerals
-  State Lands
-  ACEC Boundary



3. SOUTH TEXAS HILL CANYON

General Description:

This area is an excellent representative of deciduous woodland and grasslands within the Chihuahuan Desert Ecosystem. It is comprised of diverse wooded canyon habitat to desert grass uplands and at least two State listed plant species (Salvia summa and Epithelantha micromesita) occur along the limestone canyon walls.

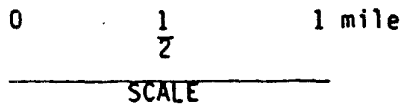
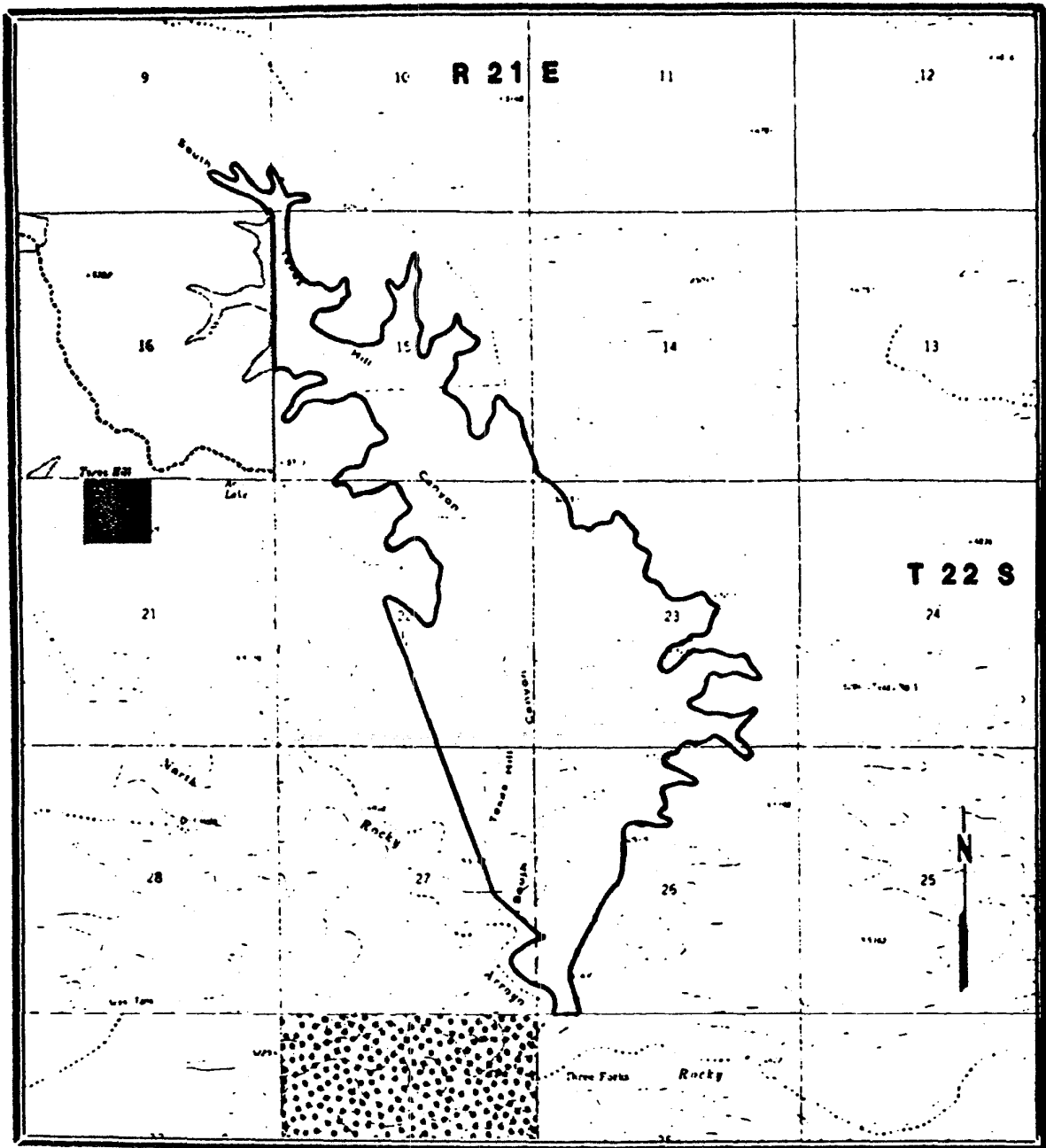
Management Goals:

The main objective of this 1,360 acre Research Natural Area (RNA) is to protect and enhance this representative habitat as well as known and potential listed species in the area. This area will also provide a focus of studies and data gathering pertaining to Chihuahuan Desert Ecosystem functions for use in future management guidance.

Management Prescriptions: (For entire 1,360 acre SMA)

1. Apply no surface occupancy stipulation to future oil and gas leases.
2. Avoid future right-of-way actions through the RNA.
3. Close to future mineral material disposal.
4. Complete limited ORV designation and implementation plan to restrict vehicles to designated routes.
5. Restrict fire suppression and geophysical operations to comply with ORV designations.
6. Restrict surface disturbance including plant collections and camping within the area.
7. Remove livestock from the area except under conditions established for studies or research purposes.

SMA No. 3- SOUTH TEXAS HILL CANYON RESEARCH NATURAL AREA (1,360 Acres)



MAP LEGEND

-  BLM
-  STATE
-  NATIONAL FOREST
-  RESEARCH

4. DARK CANYON

General Description:

The Dark Canyon SMA contains 3,950 acres divided into two management areas, the Dark Canyon Area of Critical Environmental Concern (1,480 acres) and the Dark Canyon Scenic Area (3,220 acres) which includes the remaining acreage plus the VRM Class II lands within the ACEC. These areas contain highly sensitive visual and natural resource values which include deep rugged canyons with sheer limestone cliffs, several significant and fragile caves, and threatened and endangered plant species. The area abuts the Carlsbad Caverns National Park designated wilderness area.

Management Goals:

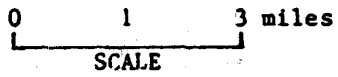
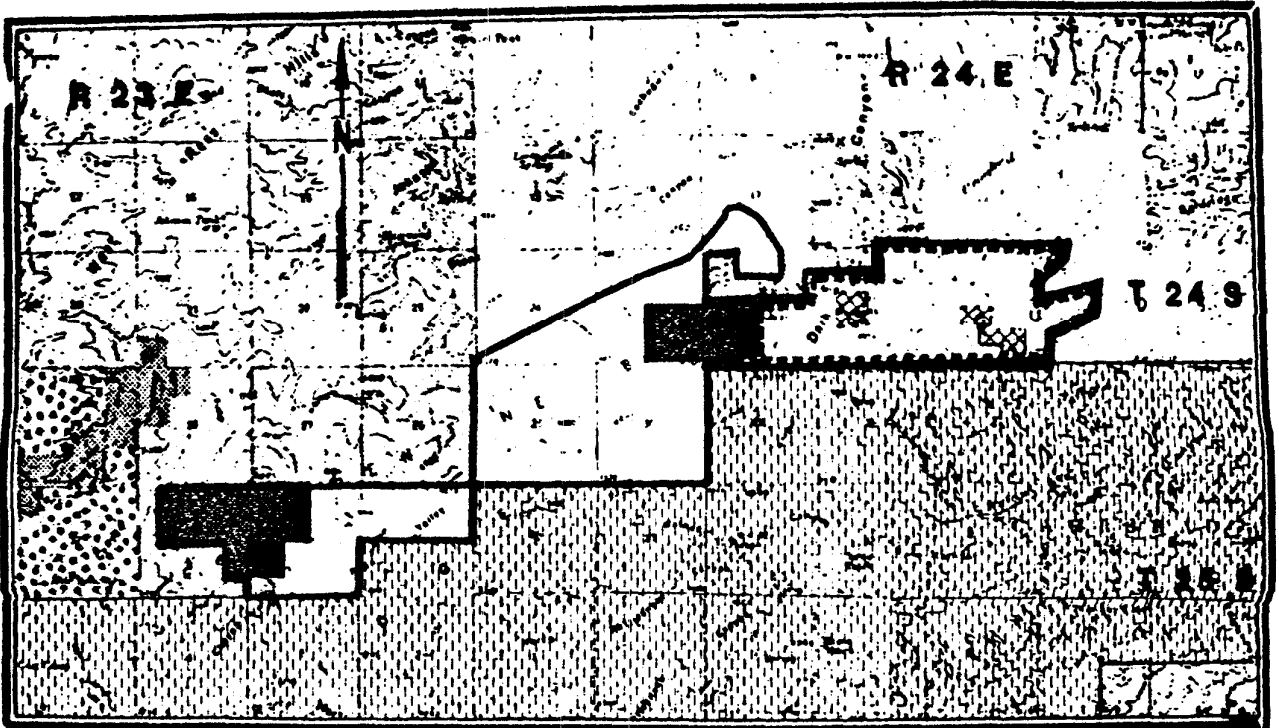
The management objectives for this SMA are to emphasize protection of high visual and natural resource values and rare plant species while still providing for other multiple resource uses.

Management Prescriptions:

- 1) Apply no surface occupancy stipulation to future oil and gas leases on 3,220 acres.
- 2) Avoid future right-of-way actions - 3,950 acres.
- 3) Restrict surface disturbance to minimum visual and environmental impacts - 3,950 acres.
- 4) Apply seasonal drilling limitations on 730 acres within the ACEC to reduce visual impacts from Carlsbad Caverns National Park during the heavy visitor use season.
- 5) Close to mineral material sales - 3,950 acres.
- 6) Limit ORV use to designated routes.
- 7) Restrict fire suppression and geophysical exploration to conform with ORV limitations.
- 8) Manage 3,220 acres to conform with VRM Class II guidelines and 730 acres under Class III prescriptions.







APPENDIX 4

SMA No. 4- DARK CANYON SPECIAL MANAGEMENT AREA (3,950 Acres)



MAP LEGEND

- SMA BOUNDARY 3,950 Acres
- - - - ACEC BOUNDARY 1,480 Acres

-  BLM
-  SRMA
-  PRIVATE
-  STATE
-  NATIONAL PARK
-  NATIONAL FOREST

5. LONESOME RIDGE ACEC

General Description:

This 2,990 acre area is part of the Capitan Reef Complex, considered the world's foremost example of a Permian age fossil reef. The area displays spectacular rugged scenery with sheer limestone canyon walls over 1,500 feet high. The area contains relict Douglas Fir trees and other species of rare and endangered plants and animals. Big tooth maples add flares of fall color. The area provides for primitive non-motorized recreational opportunities which include cave exploration, hiking on semi-developed trails, hunting, and outstanding opportunities for wildlife and scenic photography.

Management Goals:

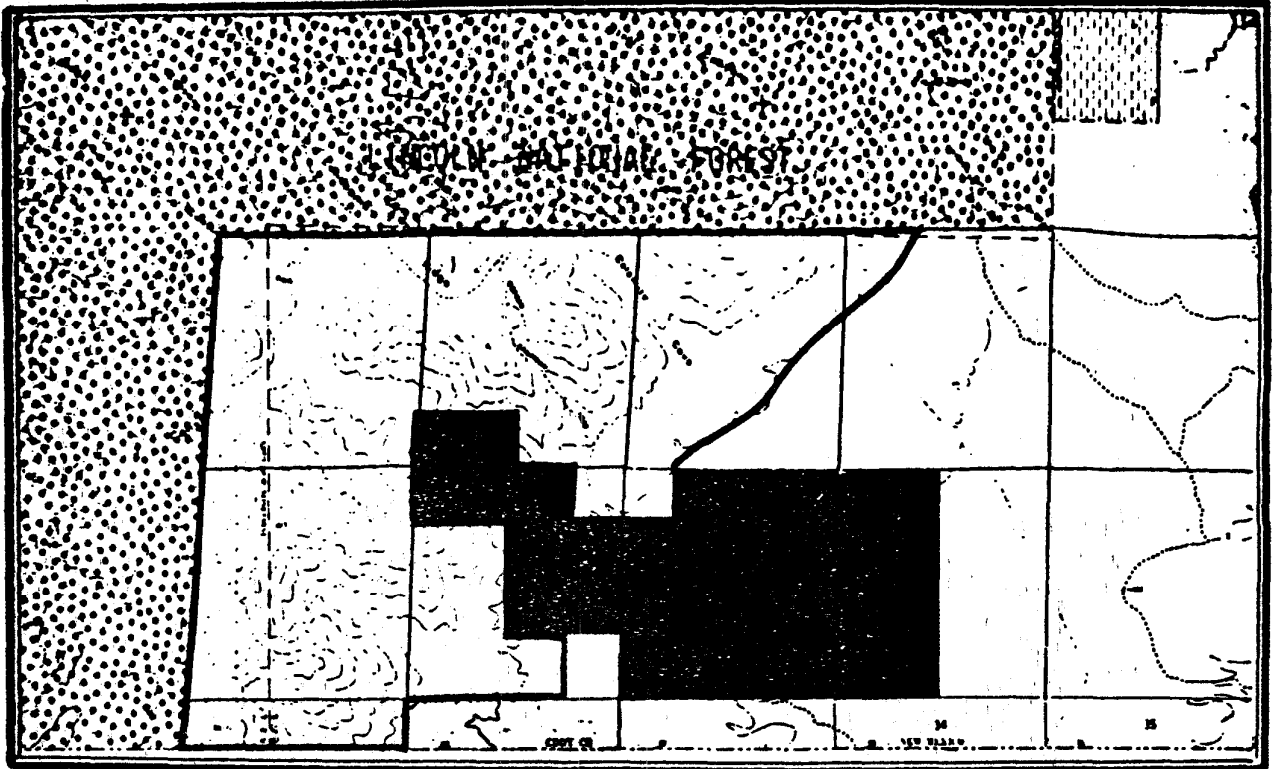
The primary objective for this SMA is to provide adequate protection of the area's outstanding natural values in an unaltered condition.

Management Prescriptions: (For entire 2,990 acre SMA)

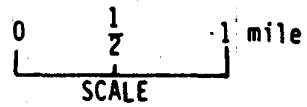
1. Apply no surface occupancy stipulation to future oil and gas leases.
2. Avoid future right-of-way actions.
3. Withdraw from future mining claim location and close to solid mineral leasing and mineral material sales.
4. Restrict surface disturbance that would diminish the area's natural and scenic values.
5. Designate closed to ORV use and implement plan to enforce designations.
6. Restrict fire suppression and geophysical exploration to conform with ORV closure.
7. Manage under VRM Class I objectives.

APPENDIX 4

SMA No. 5 - LONESOME RIDGE ACEC/ OUTSTANDING NATURAL AREA (2,990 Acres)



R 22 E



MAP LEGEND

- ACEC/ ONA BOUNDARY
- BLM
- ▨ NATIONAL FOREST
- ▩ NATIONAL PARK
- PRIVATE
- STATE

6a-6f. SPRINGS RIPARIAN HABITAT SMA's

General Description:

These six springs support critical riparian habitat within the Chihuahuan Desert Ecosystem. Bogle Flat, Preservation, Cottonwood, Owl, Ben Slaughter Springs and Blue Springs are primarily located within gypsum karst and drainage areas that flow into the Pecos River System. These areas provide habitat for listed endangered species as well as critical habitat for a variety of plants and animals.

Management Goals:

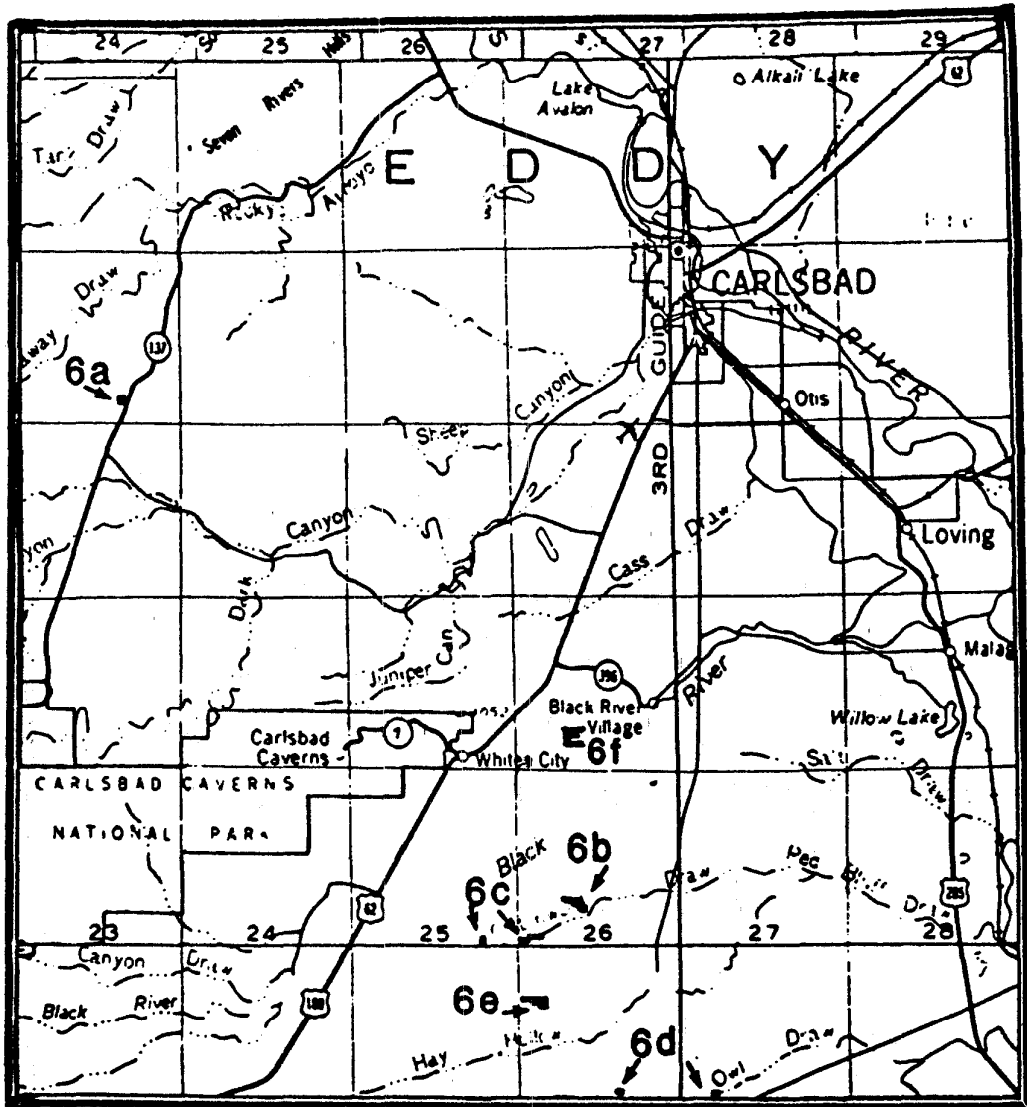
The management objective for these areas is to protect and enhance ecological condition for 524 acres of springs and associated riparian zones.

Management Prescriptions:

For detailed prescriptions by spring refer to the Decision Table in Appendix A.

1. Apply no surface occupancy stipulation to future oil and gas leases.
2. Avoid future right-of-way actions through the riparian habitat areas.
3. Withdraw from mining claim location and close to mineral material disposal and mineral leasing.
4. Designate closed to ORV use and implement plan to enforce designations.
5. Restrict fire suppression and geophysical operations to comply with ORV designations.
6. Restrict surface disturbance including plant collections and camping within the area.
7. Remove livestock from areas to allow rapid recovery of riparian habitat. Grazing management practices to enhance riparian habitat will be studied and implemented following initial recovery of the habitat areas.

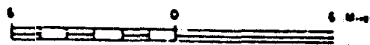
SMA 6A-6F - SPRINGS RIPARIAN HMA



LEGEND

Springs

- 6a Bogle Flat**
- 6b Preservation**
- 6c Cottonwood**
- 6d Owl**
- 6e Ben Slaughter**
- 6f Blue Spring**



6f. BLUE SPRINGS ACEC
(Also included in Springs Riparian Habitat SMA)

General Description:

This area lies adjacent to the only known remaining population of Pecos gambusia (Gambusia nobilis) in New Mexico. The Federally listed fish habitat is privately owned and surrounded by unique riparian habitat. The Bureau manages 160 acres of grassland immediately adjacent to the spring. As a result the habitat will be extensively managed to protect the valuable resources adjacent to the ACEC.

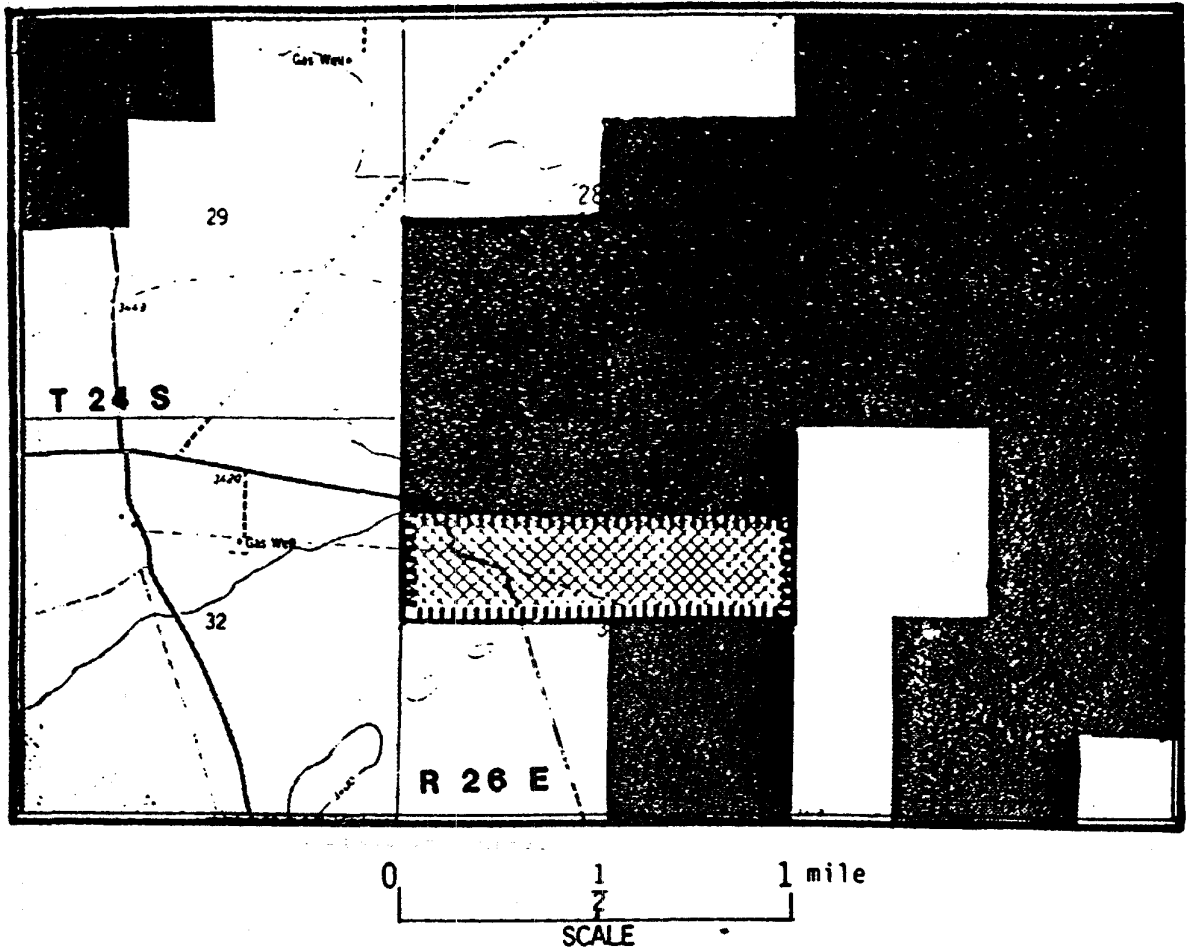
Management Goals:

The primary objective is to manage this 160 acre ACEC to protect and enhance Blue Spring and the Pecos gambusia.

Management Prescriptions: (For entire 160 acres)

1. Avoid future right-of-way actions through the ACEC.
2. Pursue exchange or acquisition on 480 acres deeded and State surface lands and 200 acres of non-Federal minerals.
3. Withdraw from mining claim location and close to mineral material disposal and solid mineral leasing.
4. Designate limited to ORV use and implementation plan to restrict vehicles to designated routes.
5. Restrict surface disturbance including plant collections and camping within the area.
6. Limit fire suppression to ORV designated routes.
7. Remove livestock from riparian and spring areas only if acquisitions are completed.

SMA No. 6(F)- BLUE SPRING RIPARIAN HABITAT ACEC (160 Acres)



MAP LEGEND

—— SPECIAL MANAGEMENT AREA

..... AREA OF CRITICAL ENVIRONMENTAL CONCERN

□ BLM

■ PRIVATE

▨ FEDERAL MINERAL ESTATE

□ STATE LAND

7. YESO HILLS

General Description:

This area is an excellent representative of the unique exposed Castile formation within the Chihuahuan Desert Ecosystem. The fragile gypsum soils are highly susceptible to wind and water erosion but also support a variety of unique, endemic gypsophils including the Federal listed candidate gypsum milkvetch (Astragalus gypsodes).

Management Goals:

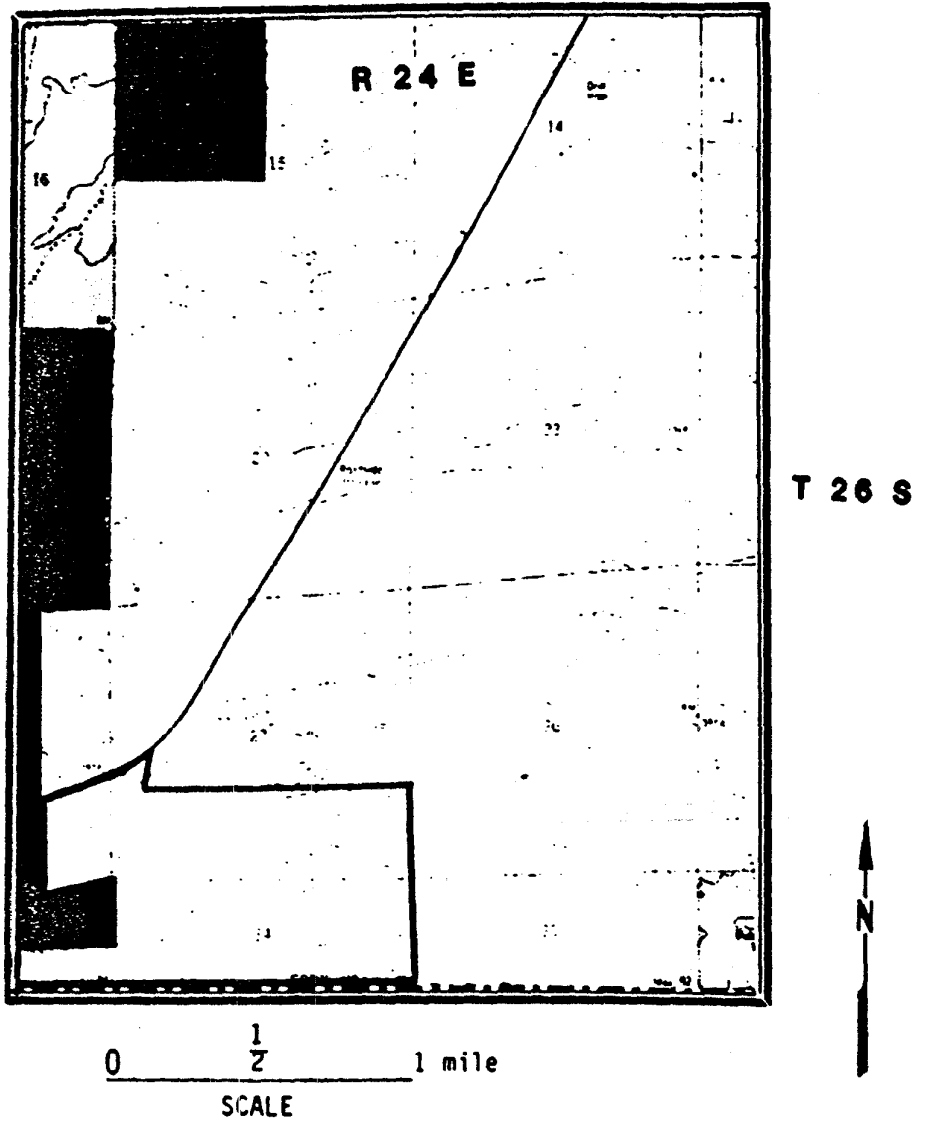
The main objective of this 560 acre RNA is to protect and enhance this representative habitat as well as known and potential listed threatened and endangered species in the area. This area will also provide a focus of studies and data gathering pertaining to Chihuahuan Desert Ecosystem functions for use in future management guidance.

Management Prescriptions: (For entire 560 acres)

1. Apply no surface occupancy stipulations to future oil and gas leases.
2. Avoid future right-of-way actions through the RNA.
3. Withdraw from mining claim location and close to mineral material disposal and solid mineral leasing.
4. Designate limited to ORV use and implement plan to restrict vehicles to designated routes.
5. Restrict fire suppression and geophysical operations to comply with ORV designations.
6. Restrict surface disturbance including plant collections and camping within the area.
7. Remove livestock from the area except under conditions established for studies or research purposes.

APPENDIX 4

SMA No. 7- YESO HILLS RESEARCH NATURAL AREA (560 ACRES)



MAP LEGEND

— RESEARCH NATURAL
AREA BOUNDARY

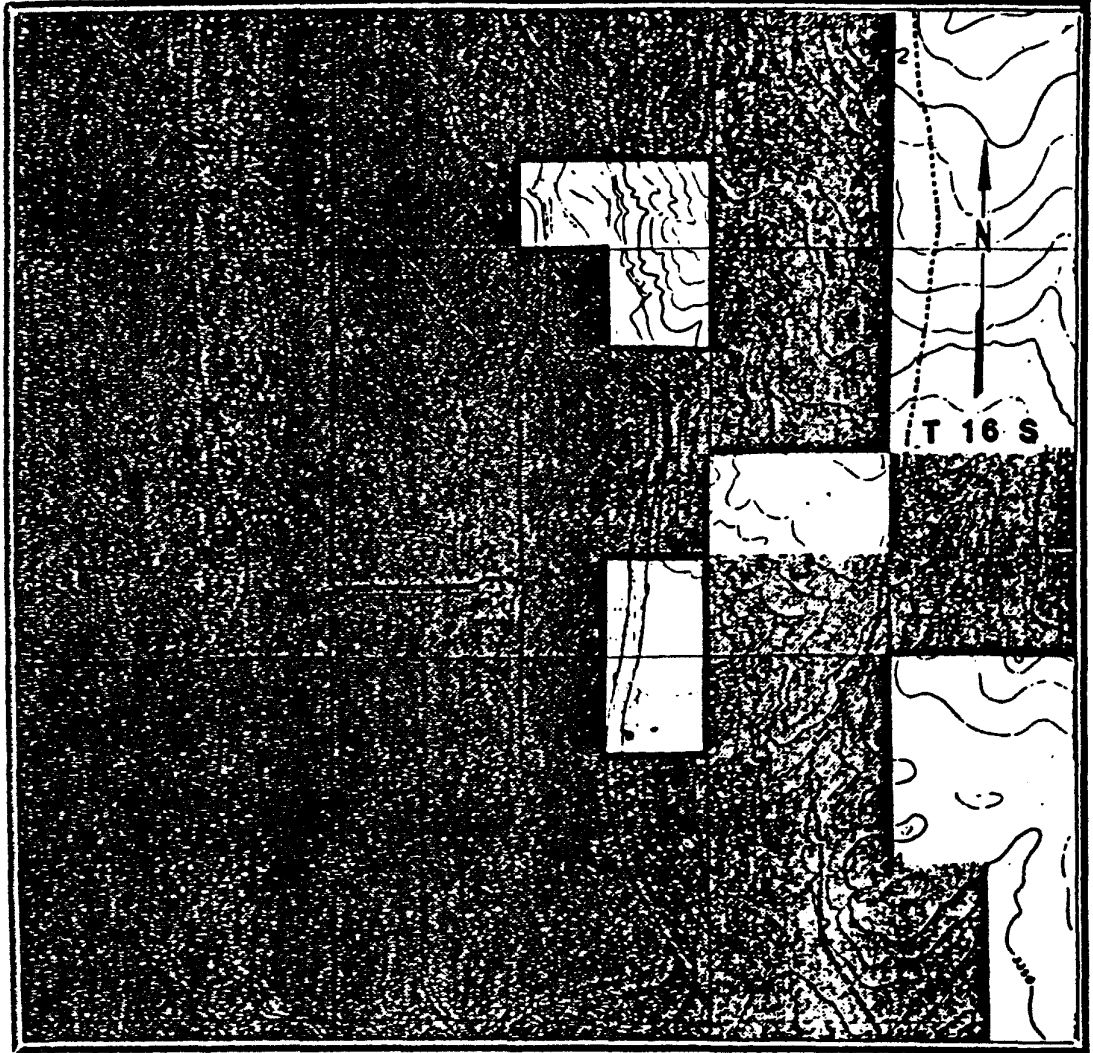
□ BLM

□ STATE LAND

■ PRIVATE

AP4-114

SMA No. 8- BLUNTNOSSE SHINER HABITAT MANAGEMENT AREA (200 Acres)
R 26 E



0 1 mile
SCALE

MAP LEGEND

— HABITAT MANAGEMENT AREA BOUNDARY

□ BLM

■ PRIVATE

APPENDIX 4

9. LITTLE MCKITTRICK DRAW

General Description:

This area is known habitat for the Federally proposed McKittrick ramshorn snail. The limestone canyon drainage provides ephemeral pool habitat for the snail.

Management Goals:

The main objective of this 10 acre RNA is to enhance this habitat for this species. This area will also provide a focus of studies and data gathering pertaining to Chihuahuan Desert Ecosystem functions for use in future management guidance.

Management Prescriptions: (For entire 10 acres)

1. Avoid future right-of-way actions through the RNA.
-

APPENDIX 4

10. LAGUNA PLATA

General Description:

The Laguna Plata Archaeological District has been declared eligible for nomination to the National Register of Historic Places. The District contains 3,360 acres of public land. The area is still essentially undisturbed despite some salt mining on the plays bottoa and Mississippi Chemical Corporation's use of Laguna Plata for emergency brine water disposal. The area eligible for the National Register is a complex of many sites with surface and subsurface cultural materials demonstrating that the area was used repeatedly over a lengthy period of time.

Management Goals:

The primary management objective of this Archaeological District is to protect and preserve the important and sensitive cultural resource value for research.

Management Prescriptions:

1. Apply no surface occupancy (NSO) stipulation to oil and gas leases - 3,360 acres.
2. Avoid future right-of-way actions - 3,360 acres.
3. Close to solid mineral leasing, except existing potash leases which require extensive excavation (3,360 acres) to mitigate the adverse effects to cultural resources.
4. Close to mineral material disposal - 3,360 acres.
5. Restrict surface disturbance to prevent impacts to cultural resources.

11. MAROON CLIFFS

General Description:

This 11,783 acre area has been determined eligible for the National Register of Historic Places as an Archaeological District. The archaeological sites recorded thus far are open campsites dating from the Archaic (5000 BC) to the Jornada Mogollon (AD900-1450). Pithouse structures have been reported to occur at Maroon Cliffs; however, excavation is required to confirm this report. The Maroon Cliffs area is topographically diverse, providing a variety of exploitable environments for prehistoric peoples. Thus, the Maroon Cliffs Archaeological District is an ideal laboratory for the study of man-environment adaptations in southeastern New Mexico.

Management Goals:

The main objective of this Archaeological District is to protect and preserve the important and sensitive cultural resource values for research.

Management Prescriptions

1. Apply no surface occupancy (NSO) stipulation to 1,880 acres of future oil and gas leases.
2. Apply special stipulation for solid mineral leasing: New leases or reissuance of existing leases will require mitigation of adverse effect to cultural resources through extensive excavation - 11,783 acres.
3. Close to mineral material disposal - 11,783 acres.
4. Restrict surface disturbance to prevent impacts to cultural resources - 11,783 acres.
5. Designate limited to ORV use to designated routes and implement plan to enforce designation - 11,783 acres.
6. Restrict fire suppression and geophysical exploration to conform with ORV designation.

12. POTASH BULL WHEEL

General Description:

The Potash Bull Wheel is an historic structure consisting of two wooden wheels, connected by a wooden shaft. The structure itself is situated in a 4-acre protective buffer. This structure was utilized in the drilling of a 1925 well, which failed to locate significant quantities of potash. This site has also been determined eligible for the National Register of Historic Places.

Management Goals:

The management objective for this historic site is to interpret, protect, and minimize deterioration of the unique historic structure.

Management Prescriptions: (For entire 4 acre SMA)

1. Apply no surface occupancy (NSO) stipulation to future oil and gas lease.
2. Close to mineral material disposal.
3. Designate closed to ORV use.
4. Apply full fire suppression to protect the structure from destruction.

15. PHANTOM BANKS HERONRIES

General Description:

Habitat areas for these colonial birds vary in description from salt lakes to wooded draws. There are currently seven known heronries supporting nesting habitat for Great blue herons (Ardea herodias), black crowned night herons (Nycticorax nycticorax), little blue herons (Egretta caerulea), tricolored herons (Egretta tricolor), snowy egret (Egretta thula), and cattle egrets (Bubulcus ibis). Maps and legal locations will not be provided for these areas since colony locations change and these species are very susceptible to human disturbance.

Management Goals:

The main management objective for these habitat areas is to protect and enhance habitat for colonial birds in southeast New Mexico.

Management Prescriptions:

1. Close to mineral material disposal within 1/4 mile circumference of active heronry.
2. Designate limited to ORV use and implement plan to protect active heronries through seasonal limitations to designated routes.
3. Restrict geophysical operations to comply with limited ORV designations.
4. Restrict surface disturbances including hunting and camping activities.
5. Apply seasonal restriction of oil and gas activities within 1/4 mile radius of active heronry.

16. POCO SITE

General Description:

The POCO Site (51 acres) is a prehistoric multicomponent site that has retained much of its stratigraphic integrity and, until recently, has not suffered any significant disturbance from oil and gas development. Undisturbed stratified sites are rare in southeastern New Mexico and the information they contain is critical to understanding the regional prehistory. In addition, the POCO Site may contain pithouse structures, a very rare occurrence. The site was declared eligible for nomination to the National Register of Historic Places by the State Historic Preservation Officer (SHPO).

Management Goals:

The management objective for this Cultural Resource Management Area is to protect and preserve the important and sensitive cultural resource values for research.

Management Prescriptions: (Entire 51 acre SMA)

1. Restrict surface disturbance and apply the special stipulation: No surface disturbance until a representative sample of the entire site is excavated.
2. Designate limited to ORV use to designated routes and implement plan to enforce designation.
3. Restrict fire suppression to conform with ORV designation.

APPENDIX 4

17. BEAR GRASS DRAW

This 1,780 acre area includes several archaeological sites which may contain intact stratigraphic deposits. One site in particular (LA 17041) is a very large multicomponent site which contains considerable subsurface cultural material. LA 17041 has been determined eligible for the National Register of Historic Places by the SHPO.

Management Goals:

The management objective for this Cultural Resource Management Area is to protect and preserve the important and sensitive cultural resource values for research.

Management Prescriptions: (For entire 1,780 acre SMA)

1. Restrict surface disturbance and apply a special stipulation requiring the mitigation of adverse effects to sites through extensive excavation.
2. Designate limited to ORV use to designated routes and implement plan to enforce designation.
3. Restrict fire suppression and geophysical exploration to conform with ORV designation.

18. PECOS RIVER/CANYONS COMPLEX ACEC

General Description:

The Pecos River/Canyons Complex ACEC encompasses approximately 5,190 acres. Two large distinctive canyons (Pierce and Cedar) converging with one of the remaining free-flowing sections of the Pecos River provide a unique landscape in southeastern New Mexico. The close association of the canyons and river display a combination of values including unique riparian habitat not elsewhere evident in the desert grassland of southeastern New Mexico; the convergence of many diverse soil types including, though not limited to, deep sands, gypsum soils, gravelly loam, loamy bottomlands, and active sand dunes; distinctive and virtually unspoiled scenic values, particularly in the two canyons; large and culturally complex archaeological sites suggesting occupation over a long period of time (Archaic, Jornada, and Mogollon periods--8,000 years ago to 1350 AD); and prime wildlife habitat for several endangered animal species. The canyons could provide vegetative habitats with high potential for supporting State endangered plant species.

Management Goals:

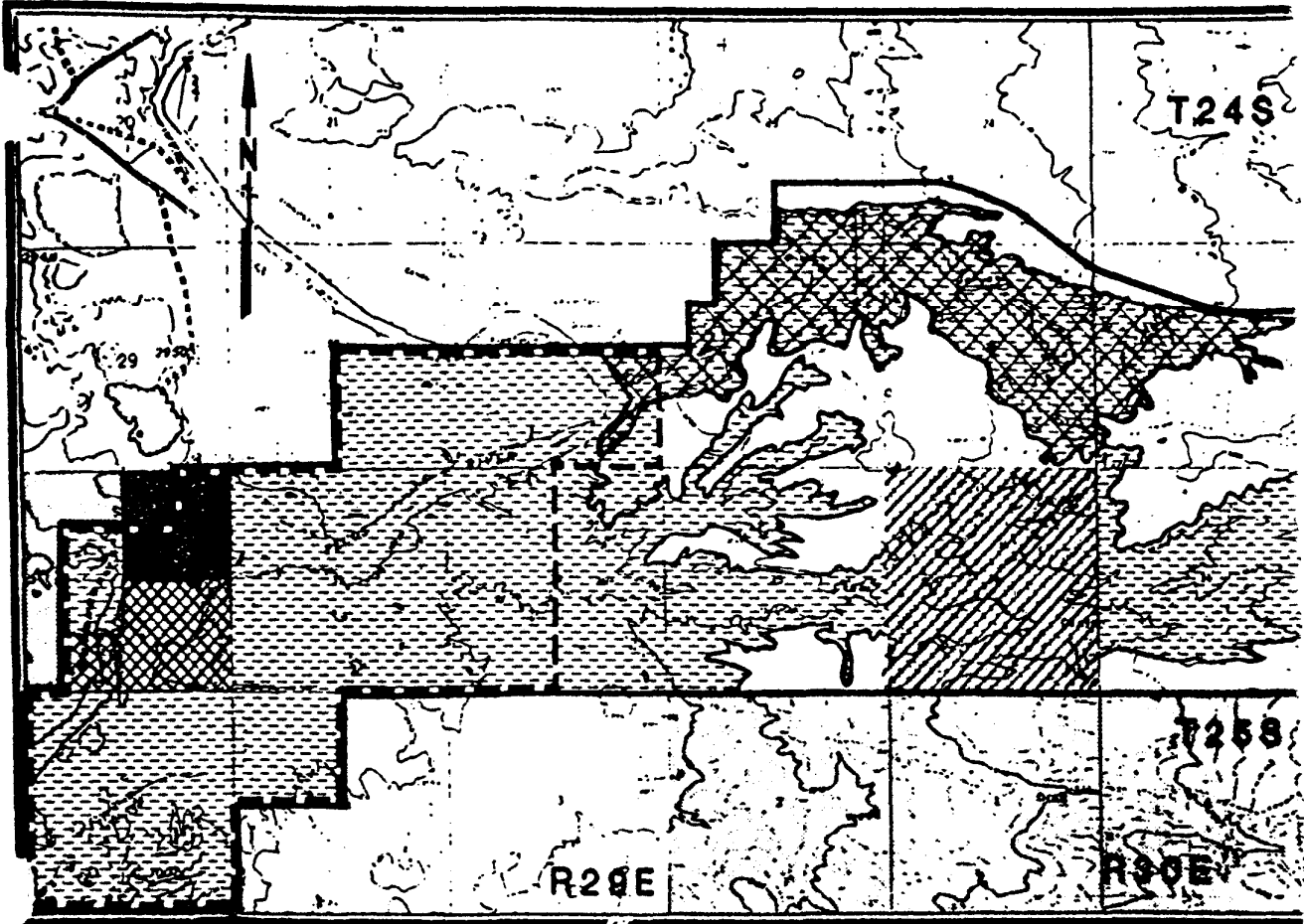
The management objectives for this ACEC will emphasize protection of the sensitive and unique natural and cultural resources as well as scenic qualities. It will also provide research opportunities while still allowing other compatible resource uses.

Management Prescriptions:

1. Apply no surface occupancy (NSO) stipulation to 4,100 acres of future oil and gas leases.
2. Avoid future right-of-way actions through 4,100 acres.
3. Restrict surface disturbance throughout the ACEC to minimize environmental impacts and mitigate adverse effects to cultural resources through extensive excavation.
4. Withdraw from mining claim location and close to solid mineral leasing 4,100 acres.
5. Close the entire 5,190 acres to mineral material disposal.
6. Attempt to acquire 960 acres of non-Federal surface and 320 acres of non-Federal minerals estate.
7. Designate 1,215 acres closed to ORV use and the remaining 3,975 acres limited to designated routes. Implement plan to enforce designations.
8. Restrict fire suppression and geophysical exploration to conform with ORV limitations.
9. Remove livestock from 2,320 acres.
10. Manage 4,100 acres to conform with VRM Class II guidelines with the remaining 1,090 acres under VRM Class III prescriptions.

APPENDIX 4

SMA No. 18- PECUS RIVER/ CANYONS COMPLEX ACEC (2,970 acres) RNA (2,320 acres)



0 1 2 miles
SCALE

MAP LEGEND

— ACEC BOUNDARY

- - - RNA BOUNDARY

□ BLM

□ STATE LAND

■ PRIVATE

▨ NO SURFACE OCCUPANCY

▩ ORV CLOSURE

▨ LAND ACQUISITION

19. POPE'S WELL

General Description:

This 40-acre historic site contains artesian well drill sites and stone remains of the army camp used by Captain John Pope in the mid-1850's. The camp and wells were constructed while trying to establish reliable water sources for the proposed southern route of the transcontinental railroad. This site is listed in the National Register of Historic Places.

Management Goals:

The management objective for this National Register site is to protect and preserve the important and sensitive historic resources for research and education.

Management Prescriptions: (For entire 40 acre SMA)

1. Apply no surface occupancy (NSO) stipulation to future oil and gas leases.
2. Designate closed to ORV use and implement plan to enforce designation.
3. Restrict fire suppression and geophysical exploration to conform with ORV designation.

20. GUADALUPE ESCARPMENT SCENIC AREA

General Description:

This 49,570 acre area of contiguous public land generally parallels the Guadalupe Escarpment. It is a highly sensitive visual area because it is the immediate visual foreground as viewed from several key observation points along U.S. Highway 62/180. It is also a primary viewshed from the designated wilderness of Carlsbad Caverns National Park and Forest Service scenic areas.

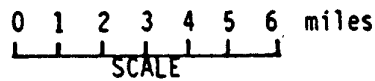
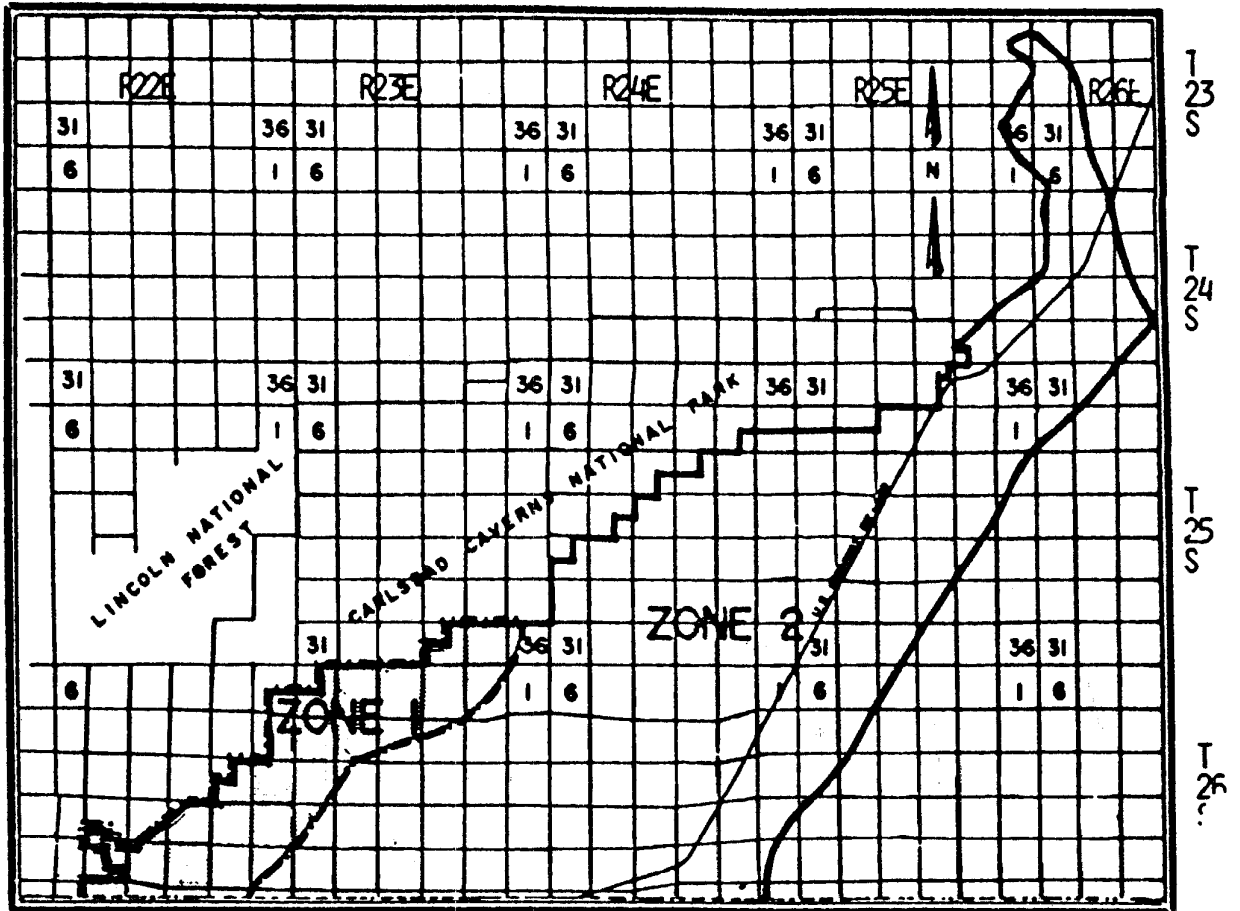
Management Goals:

The management of the area would emphasize the protection of visual resource values associated with the Guadalupe Escarpment while still allowing for compatible multiple use development to occur.

Management Prescriptions:

1. Apply no surface occupancy (NSO) stipulation to future oil and gas leases - 11,700 acres.
2. Restrict surface disturbance throughout the 49,570 acre Scenic Area by minimizing visual impacts through special stipulations applied on case-by-case basis.
3. Close to solid mineral leasing and mineral material sales in Zone 1 of the SMA (11,700 acres).
4. Designate limited to ORV use to designated roads and implement plan to enforce designation (49,570 acres).
5. Restrict fire suppression and geophysical exploration to conform with ORV designation.
6. Manage 8,820 acres to conform with VRM Class II guidelines and the remaining 40,750 acres under VRM Class III guidelines.

SMA No. 20 - GUADALUPE ESCARPMENT SCENIC AREA (49,570 Acres)



MAP LEGEND

- SCENIC AREA BOUNDARY
- ZONE 1
- ZONE 2

APPENDIX 4

21. ALKALI LAKE ORV AREA

General Description:

The ORV area contains 900 acres of rolling and stabilized dune lands that receive heavy random motorcycle use. The area is of interest to the local motorcycle club for use during events.

Management Goals:

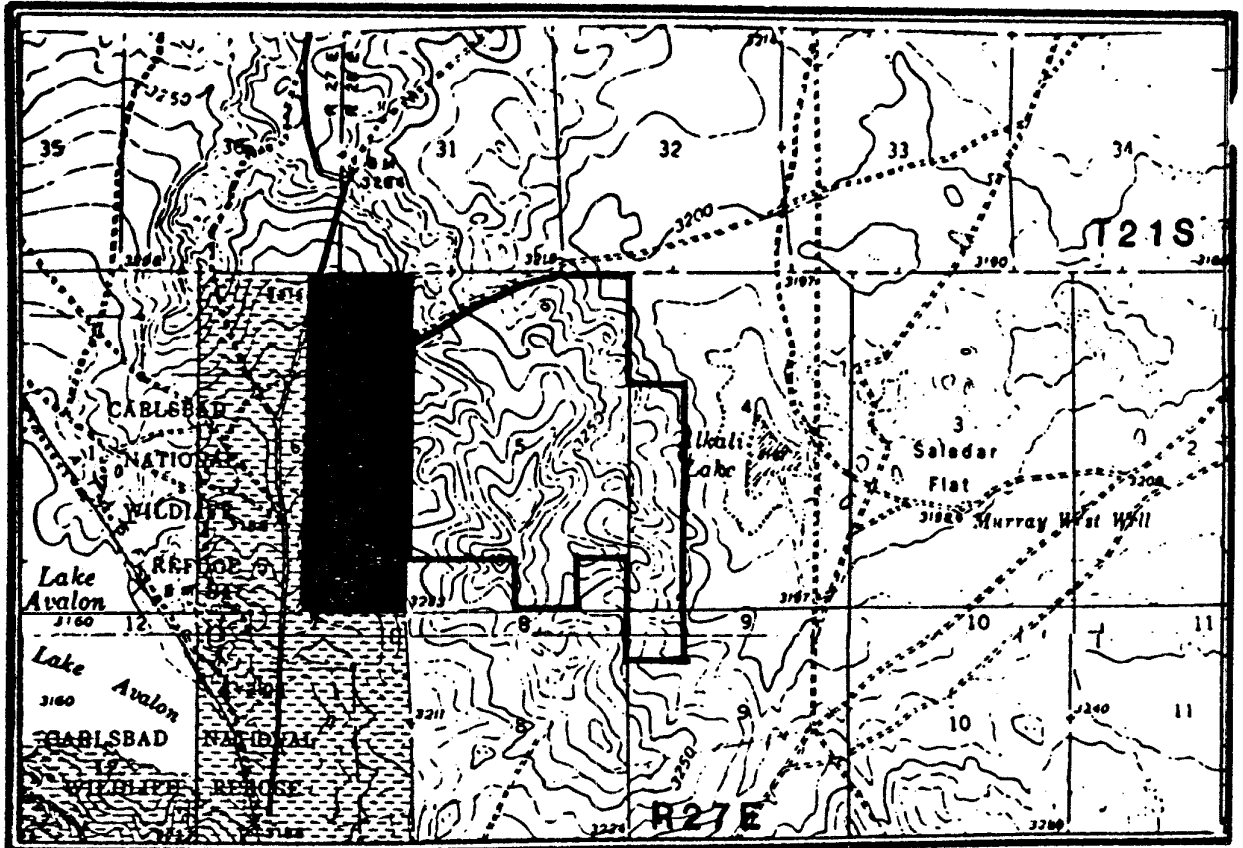
The management goal for this area is to allow extensive motorcycle use while working closely with oil and gas interests to meet multiple use objectives.

Management Prescriptions:

1. Apply special oil and gas stipulations to protect approved ORV trails and camping areas to all development authorizations within the area.
2. Require special recreation permit authorizations for competitive or commercial motorcycle events.
3. Manage for full fire suppression.

APPENDIX 4

SMA NO. 21 - ALKALI LAKE ORV AREA (900 ACRES)



0 1 2 miles



SCALE



MAP LEGEND

— OFF-ROAD VEHICLE (ORV) AREA

□ BLM

■ PRIVATE LAND

22. HACKBERRY LAKE ORV AREA

General Description:

This intensive ORV use area consists of 55,800 acres of rolling stabilized dune lands and cliffs. The area is used annually for competitive Enduro events. It is also popular for random motorcycle and other ORV use. The area is heavily developed for oil and gas. Coordination with the oil and gas industry to avoid specific routes and trails should pose no management problem.

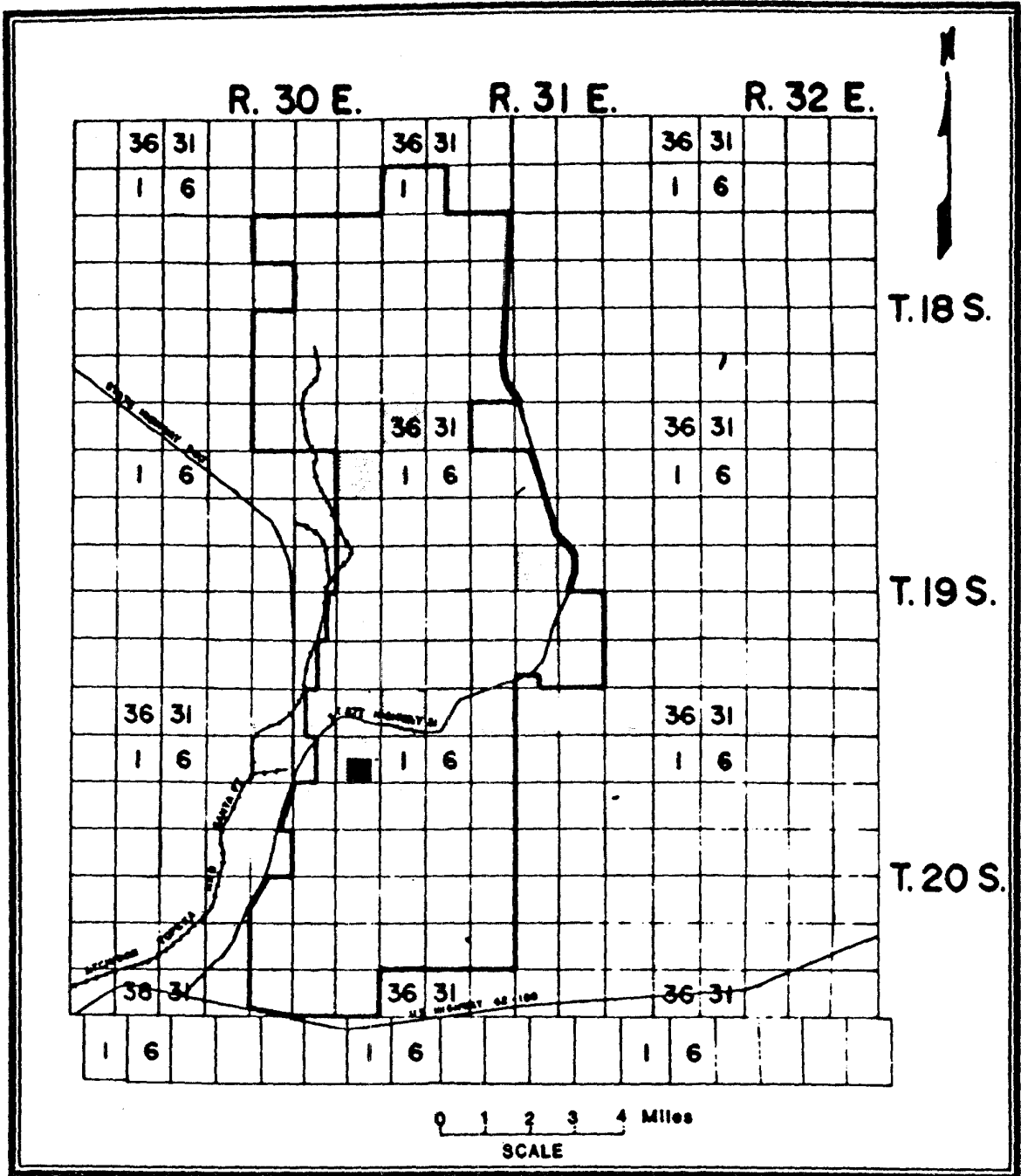
Management Goals:

Management objectives are to manage as an intensive ORV use area and avoid conflicts with other land uses which would continue to be authorized.

Management Prescriptions:

1. Apply special oil and gas stipulations to protect ORV trails and camping areas applied to development authorizations within the area.
2. Require special recreation permit authorizations for competitive or commercial motorcycle events.
3. Manage for full fire suppression.

SMA NO. 22 - HACKBERRY LAKE GRV AREA (55,800 ACRES)



MAP LEGEND



BLM



STATE LAND

AP4-132

23. PECOS RIVER CORRIDOR

General Description:

The Pecos River Corridor (6,000 acres) contains a one-half mile strip of BLM lands along the Pecos River and the area surrounding the Red Bluff Reservoir. The area would emphasize water-based recreation along the free-flowing Pecos River and provide for semi-primitive motorized recreation opportunities. The area round Red Bluff Reservoir would be developed for day and overnight use to include camp sites, picnic sites, sanitation facilities, and a boat ramp. Public access would also be provided along the river.

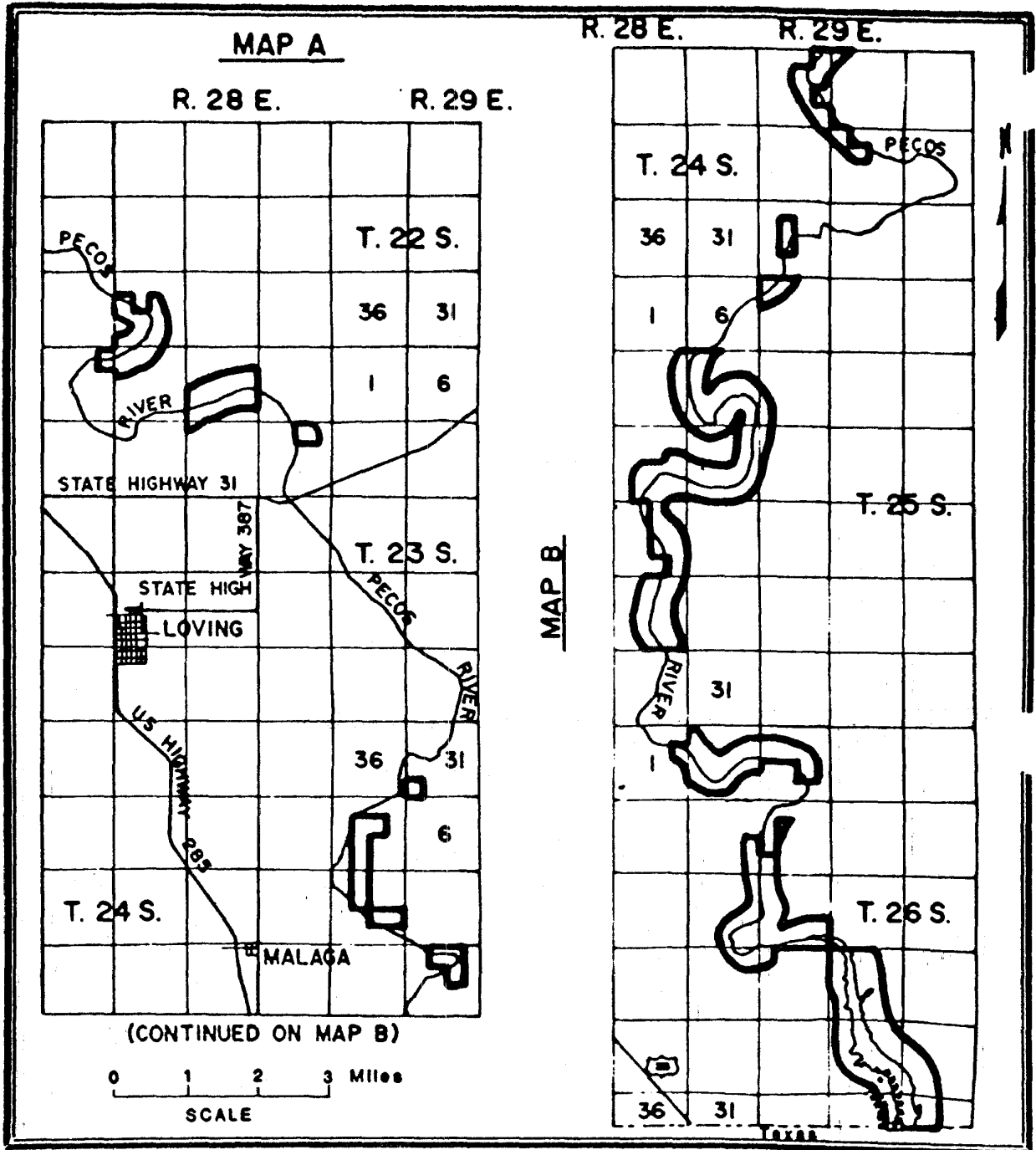
Management Goals:

Management objectives would provide protection for scarce water-based recreation, provide public access, protect the natural values and still allow for semi-primitive motorized recreation. Additional goals are to reduce soil erosion and vegetation destruction while still allowing leaseable minerals and other resource development to occur in the area.

Management Prescriptions:

1. Apply no surface occupancy (NSO) stipulation to future oil and gas leases - 6,000 acres.
2. Restrict surface disturbance throughout the area to reduce erosion and minimize impacts to riparian habitat.
3. Close to solid mineral leasing and mineral material disposal- 6,000 acres.
4. Withdraw 1,729 acres from mining claim location.
5. Designate 120 acres around Red Bluff Reservoir closed to ORV use and the remaining 5,880 acres as limited to designated routes. Implement plan to enforce designations.
6. Restrict fire suppression on 5,880 acres to conform to ORV limitation but conduct full fire suppression within the 120 acre Red Bluff Reservoir area.
7. Restrict geophysical exploration to conform with ORV limitations.
8. Remove livestock from the 120 acre Red Bluff Reservoir area.
9. Manage 4,500 acres to conform with VRM Class II guidelines and the remaining 1,500 acres under VRM Class III prescriptions.

SMA NO. 23- PECOS RIVER CORRIDOR SPECIAL RECREATION MANAGEMENT AREA (6,000 ac.)



MAP LEGEND

SPECIAL RECREATION
MANAGEMENT AREA



SUMMARY

**BIOLOGICAL OPINION ON THE EFFECTS TO THE
PECOS BLUNTNOSE SHINER FROM THE
BUREAU OF LAND MANAGEMENT'S RESOURCE MANAGEMENT PLAN
FOR THE CARLSBAD RESOURCE AREA**

Cons. #2-22-96-F-128

Date of the opinion: April 30, 1997

Action agency: Bureau of Land Management (BLM), Roswell District, Carlsbad Resource Area (CRA), New Mexico

Project: This biological opinion addresses the effects of the CRA Resource Management Plan (BLM 1988) and the CRA Draft Resource Management Plan Amendment/Environmental Impact Statement (BLM 1994).

Listed species affected: Pecos bluntnose shiner

Biological Opinion: It is the opinion of the U.S. Fish and Wildlife Service (Service) that programs undertaken under the direction of the CRA Resource Management Plan and amendment will not jeopardize the continued existence of the Pecos bluntnose shiner or adversely modify its critical habitat.

Conservation Recommendations: Implementation of conservation recommendations is discretionary. Six conservation recommendations have been provided.

Conservation recommendations for the Pecos bluntnose shiner:

- 1. Continue the policy contained in the Interim Oil and Gas Leasing and Development Environmental Assessment of selling no new oil and gas leases on lands within 100-year floodplains, unless or until BLM can demonstrate that other mandatory protective measures will provide equivalent protection.**
- 2. Determine if the oil and gas leasing recommendations and leasing stipulations provided by Bureau of Reclamation (BR) for Brantley Reservoir provide as much protection for potentially flooded areas as do the proposed BLM policies for oil and gas leasing and development in 100-year floodplains. If the recommendations and stipulations provided by BR give less protection to possibly flooded areas of Brantley Reservoir than do proposed BLM policies for 100-year floodplains, meet with BR to encourage strengthening the recommendations and stipulations.**
- 3. The Carlsbad Resource Area Draft Resource Management Plan Amendment/ Environmental Impact Statement (BLM 1994) contains proposed surface use and occupancy requirements for oil and gas activities in floodplains. It states, "No surface occupancy would be allowed within floodplains or within 200 meters of the outer edges of 100-year floodplains, to protect riparian areas" (Appendix 3). Change the wording of this sentence to indicate the purpose of the policy is to protect the integrity of the 100-year floodplain, not just riparian areas within the floodplain.**

4. Several possible exceptions are identified for the no surface occupancy policy identified above. Eliminate any exception in Pecos bluntnose shiner habitat if it could contribute to the degradation of floodplain characteristics and water quality for the shiner.
5. The Roswell Resource Area Proposed Resource Management Plan/Final Environmental Impact Statement (BLM 1997) contains 141 conditions of Approval (COAs)(Appendix 4) for oil and gas operations and other activities. The COAs number 109-118 apply to floodplain development. Compile these COAs, other COAs that may apply to floodplain development, and any other applicable information into a single guidance document for availability to floodplain lease holders.
6. When considering exceptions to no surface occupancy requirements, or when conducting project reviews, the evaluation should include not only critical and occupied habitat, but also habitat that could support listed species.

Future Consultations: This consultation covers a broad spectrum of management activities that are guided by the CRA management plan and amendment. In some cases, it was necessary to analyze specific projects and/or discuss them in the biological opinion to help evaluate the overall effectiveness of plan-level guidance. This plan-level consultation, however, does not eliminate the need for BLM to conduct future action-specific biological assessments pursuant to 50 C.F.R. 5402.12 to determine if any actions are likely to adversely affect listed or proposed species or adversely modify critical habitat.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 761-4525 Fax: (505) 761-4542

April 30, 1997

Cons. #2-22-96-F-128

Memorandum

To: Area Manager, Carlsbad Resource Area, Bureau of Land Management,
Carlsbad, New Mexico

From: Field Supervisor, New Mexico Ecological Services Field Office, U.S. Fish and
Wildlife Service, Albuquerque, New Mexico

Subject: Biological Opinion on the Carlsbad Resource Area Resource Management Plan
and Amendment

In a memorandum dated September 17, 1996, the U.S. Fish and Wildlife Service (Service) indicated to the Bureau of Land Management (BLM) Carlsbad Resource Area (CRA) that formal consultation under section 7 of the Endangered Species Act would begin as of that date for the programs implemented under the Carlsbad Resource Management Plan (RMP) and amendment unless BLM responded otherwise. This biological opinion concerns effects of management programs on the Pecos bluntnose shiner (*Notropis simus pecosensis*);

This consultation covers a broad spectrum of management activities that are guided by the Carlsbad RMP and amendment. In some cases, it was necessary to analyze specific projects and/or discuss them in the biological opinion to help evaluate the overall effectiveness of plan-level guidance. This plan-level consultation, however, does not eliminate the need for BLM to conduct future action-specific biological assessments pursuant to 50 CFR 1402.12 to determine if any actions are likely to adversely affect listed or proposed species or adversely modify critical habitat.

Consultation History

Informal consultation for the Carlsbad RMP began on August 14, 1995, when the CRA requested a list of endangered, threatened, proposed, and candidate species for preparation of a Biological Assessment (BA) on species listed since the RMP was adopted and on other listed species in the CRA for which there was new biological information. The Service responded on September 18, 1995, with a list of species for Chaves, Lea, and Eddy counties. A preliminary SA was submitted on October 13, 1995, that addressed the impacts of the current RMP on species that are federally endangered, threatened, or candidates. Due to a Service request for more information, the BA was resubmitted on January 9, 1996, with a request for Service concurrence. After continued discussion between the two agencies, and the Service's determination that it could not concur with BLM's interpretation of the thresholds for its determinations of effect on listed species, the BLM withdrew its request for concurrence on April 9, 1996.

to reassess its determinations and continue to develop the information in its BA. The CRA again submitted a BA on July 3, 1996, with a request for concurrence with the revised determinations. In this BA, the CRA requested concurrence with determinations of "no effect" or "not likely to adversely affect" for 22 species, of which 9 are endangered, 6 are threatened, 1 is proposed endangered, and 6 are candidates.

On August 5, 1996, the Service concurred with determinations of "no effect" or "not likely to adversely affect" for 14 endangered, threatened, or proposed species (blackfooted ferret, brown pelican, Arctic: peregrine falcon, Mexican spotted owl, Pecos gambusia, Arkansas river shiner, interior least tern, northern aplomado falcon, southwestern willow flycatcher, bald eagle, Kuenzler hedgehog cactus, Lloyd's hedgehog cactus, gypsum wild-buckwheat, and Lee pincushion cactus) but could not concur with CRA determinations of "not likely to adversely affect" for two species (American peregrine falcon and Pecos bluntnose shiner) due to insufficient information. The Service made no comments on CRA determinations for candidate species. The CRA submitted supplementary information to its BA on August 19, 1996, which addressed the two remaining species. Based on the supplementary information, the Service indicated in a memorandum dated September 17, 1996, that it was able to concur with the CRA determination of "not likely to adversely affect" for the American peregrine falcon, but not for the Pecos bluntnose shiner, and that it would consider formal consultation on the shiner to be initiated as of September 17, 1996, unless the CRA indicated in writing that it did not want formal consultation to begin. No such response was received.

A draft biological opinion dated February 18, 1997, was submitted to the BLM for review. The BLM commented on the draft biological opinion in a memorandum dated April 3, 1997.

The following biological opinion is based on information in the BA and supplementary information, data in our files, discussions with species experts, and other sources of information.

BIOLOGICAL OPINION

It is the Service's biological opinion that the Carlsbad RMP (1988) and the Carlsbad Draft Resource Management Plan Amendment/Environmental Impact Statement (DRMPA/EIS) (BLM 1994) are not likely to jeopardize the continued existence of the Pecos bluntnose shiner (*Notropis simus pecosensis*) or adversely modify its critical habitat.

Description of the Proposed Action

This biological opinion addresses I3LM activities directed by the Carlsbad RMP and proposed to be directed by the Carlsbad ORMPA/EIS. The CRA encompasses about 6.4 million surface acres of all ownerships in Eddy, Lea, and the "bootheel"⁸ portion of Chaves County. There are about 2.2 million acres where both the surface and subsurface are in Federal ownership and another 1.9 million acres of Federal minerals underlying other surface ownerships.

The Carlsbad RMP, completed in 1988, provides the framework for managing the public lands and for allocating resources in the CRA for up to 20 years. In addition, a BA for the RMP was completed in 1988, as a requirement of the Act. However, as the listing of species as threatened or endangered is extremely dynamic, there was a need to update the existing BA to include newly listed species, and to amend the status of other species. Since the completion of the RMP consultation, 8 additional species have been listed or proposed, or new information has arisen to necessitate reinitiating consultation.

The BA update and additional information analyzed potential effects to federally listed threatened, endangered, and candidate species from RMP guided actions and site-specific ongoing activities or programs. This biological opinion addresses how the RMP guides site-specific actions and may discuss some of these actions to help evaluate the effectiveness of plan-level guidance. This biological opinion, however, cannot be used as the consultation for any site-specific projects or actions.

BLM Resource Programs

This section on BLM-managed programs that are guided by the Carlsbad RMP was adapted from the CRA updated BA (1996), the Carlsbad RMP (1988), the Carlsbad DRMPA/EIS (1994), and additional information. Environmental components that the Carlsbad RMP and Carlsbad DRMPA/EIS may affect include mineral resources; lands, , realty, and rights-of-way; rangeland resources; vegetation; cultural resources; paleontological/geological resources; wilderness resources; recreation; wild and scenic rivers; visual resources; soil resources; water resources; air resources; wildlife; hazardous or solid wastes; fire; and special management areas, including Areas of Critical Environmental Concern. Resource management programs in the CRA correspond roughly to these environmental components, but some programs may affect or include several of the components. For instance, the CRA's administration of grazing has important effects on rangeland resources, vegetation, soil resources, water resources, fire, and wildlife, and minor effects on some of the other environmental components.

Conversely, some environmental components such as water are affected by several management programs. The Service has evaluated the environmental components and determined that the CRA programs that affect cultural resources, paleontological/geological resources, wilderness resources, wild and scenic rivers, visual resources, air resources, and hazardous or solid wastes either have no effect on the Pecos bluntnose shiner or have effects that are insignificant, discountable, or beneficial. This is primarily because the CRA programs affecting these environmental components are of minor scope or occur in parts of the CRA that provide no habitat for the Pecos bluntnose shiner.

Oil and Gas Program

Most of the CRA has high or moderate potential for oil and gas occurrence. During the period of 1904 to 1991, 35,702 Federal, State, and fee wells were drilled in the CRA. As of March 21, 1995, there were 4,671 Federal leases in effect in the CRA covering approximately 1.9 million acres. Total projected disturbed acreage by the end of 1997 from all Federal drilling activity will be 41,573 acres. Since about one-third of subsurface minerals are non-Federal, cumulative disturbed acreage could be expected to increase proportionately to about 55,292 acres. This surface disturbance will continue as long as the wells are producing and until reclamation has occurred.

In the CRA, oil and gas leasing and development is currently directed by Environmental Assessment No. NM-067-5-931, Interim Oil and Gas Leasing and Development Carlsbad Resource Area (8LM 1995), which supersedes the 1988 RMP. This document will be superseded by the Carlsbad DRMPA/EIS (BLM 1994) when that document is finalized. Under the interim direction, lease parcels will be screened to identify resource management or operational conflicts. Parcels failing to pass the screening will not be offered for sale, but can be reconsidered for leasing after approval of the Carlsbad RMPA. Under the screening, no parcels will be leased if there are: various operational concerns; designated significant caves; designated critical habitat for Federal threatened or endangered species; habitat designated as crucial for State threatened or endangered species; sites on the National Register of Historic Places; 100-year floodplains; playa or alkali takes large enough to completely encompass a lease; or areas proposed in the Carlsbad RMPA for closure to leasing or no surface occupancy, including those areas carried forward from the Carlsbad RMP.

When the Carlsbad ORMPA/EIS is finalized, leasing may resume in some of the areas not being leased under the interim oil and gas leasing EA. For example, it is intended to resume leasing in 100-year floodplains, but apply No Surface Occupancy (NSO) stipulations to any leases sold. There are, however, several exceptions to the NSO stipulations. In these cases, and for existing leases in floodplains, appropriate Conditions of Approval (COAs) to protect floodplain resources will be applied when there is an Application to Drill.

Leases can include specific stipulations that are attached prior to lease sale to mitigate potential impacts. Some examples of lease stipulations are no surface occupancy, controlled surface use, and timing restrictions. For areas where the surface is managed by another Federal agency, and certain areas managed by the New Mexico State Park, leasing stipulations are provided by those agencies. Where the surface ownership is State or private, surface use stipulations are included that ensure conformance with the Endangered Species Act and other Federal laws. The lessee or operator will negotiate surface use requirements with the State or private landowner prior to development, as described in Onshore Oil and Gas Order No. 1.

In the Carlsbad DRMPA/EIS, leasing stipulations supplied by the Bureau of Reclamation (BR) in conjunction with Brantley Reservoir include: no surface occupancy within the boundary of Brantley Lake State Park; no surface occupancy within 0.5 mile of the dam with drilling within 0.5 mile considered on a case-by-case basis after review of the geology: surface occupancy below 3,271 feet natural elevation will be considered on a case-by-case basis; no storage facilities below elevation 3,286 feet mean sea level: and areas not covered by the preceding requirements would be leased and managed under appropriate stipulations derived from the Carlsbad RMPA or conditions of approval.

In addition to lease stipulations, there are several Notice to Lessees for oil and gas development. These include netting pits and placing caps over exhaust stacks to prevent bird and bat entry. There are a number of standard operating COAs that are attached to every Application to Drill. The COAs include standards for road construction, pipeline construction, drill pad construction, reserve pit and tank battery construction, waste materials management, site reclamation, and other procedures. The COAs are intended to minimize surface impacts and provide measures for site restoration after drilling activities are completed.

Land and Realty Program

The CRA currently has about 6,200 active rights-of-way (ROW) managed under its realty program. Presently about 91,700 acres of public land are affected by existing ROWs. Most ROWs are issued for oil and gas related roads, pipelines, and powerlines. Predominately, ROWs are issued for a 30 year period, but they can be issued for any period necessary to meet the objective of the ROW. Relinquished ROWs are returned to native vegetation.

Five ROW corridors were designated in the RMP to facilitate future product transportation needs of the oil and gas industry. Several ROWs cross the Pecos River and will be the preferred locations for any new river crossings.

Potash Program

Five companies mine and refine potash in the CRA. All of the refining plants are on private land with only portions of the mine tailings piles extending onto BLM lands. Five outlying mining shafts impact about 150 acres of BLM land. Each potash company produces thousands of gallons of salt water. The Environmental Protection Agency (EPA) has permitted two companies to put salt water and sludge into natural salt lakes. The National Wildlife Health Center is doing research to determine the cause of waterfowl mortality at several salt lakes in the CRA. Interim study results conclude that bird deaths in the study area result from salt toxicity/dehydration, which may not result entirely from the nature of the potash discharge.

Grazing Program

All of the public lands administered by the CRA are allocated for grazing, with the exception of some Special Management Areas. There are 268 grazing allotments covering about 2.19 million acres of public land. An Allotment Management Plan or a Coordinated Resource Management Plan is in place for 58 allotments. The current permitted use for the CRA is 374,382 animal unit months (AUM), which averages 5.8 acres per AUM.

Grazing systems include yearlong, rest rotation, deferred rotation, seasonal, and holistic. Allowed forage utilization levels for upland sites are 45 percent. Riparian use guidelines are currently being developed in conjunction with the New Mexico Resource Advisory Council. According to the BA, riparian areas are intensively managed to curtail adverse impacts. Management methods include exclusion fencing, development of water sources away from riparian areas, and prescribed grazing systems to eliminate year-round impacts. Range condition studies (1993 data) indicate 1.8 percent excellent, 49.6 percent good, 45.3 percent fair, 1.4 percent poor, and 1.9 percent unclassified for the condition of CRA rangelands.

From 1972 to 1996, there have been 138,968 acres of brush treatment, with about 83.5 percent using herbicides and most of the rest using fire. Herbicide applications are in conformance with BLM, State, and EPA standards. Currently, all herbicide treatments of shinnery oak have ceased. The 1988 RMP identified 3000 acres to be treated on the west side of the CRA. To date, 1,800 acres have been treated. A 700 acre catclaw treatment is planned for 1997, bringing the total treated to 2, 500 acres. Important

wildlife habitat such as broadleaf tree groves, aquatic, riparian, wetland, and watering facilities are protected during brush control operations.

The Carlsbad RMP directs that a monitoring program be established to determine whether the goals and objectives of the RMP are being achieved. As a minimum, the monitoring studies will collect data on actual livestock use, wildlife use, degree of key forage species utilization, climatic conditions, and rangeland ecological condition and trends. When undesirable or unintended changes in resource values are discovered and the causes determined, corrective action will be taken. Current BLM policy emphasizes the use of a systematic monitoring program to verify the need for livestock adjustments. These adjustments can be made by changing the kind and class of livestock, the season of use, the stocking rate, or the grazing pattern. The BA did not contain specific information on monitoring frequencies or results.

Recreation Program

Most recreation in the CRA is dispersed. It includes caving, camping, hunting, picnicking, mountain biking, fishing, horseback riding, hiking, climbing, sightseeing, and off-road vehicle (ORV) use. There are two designated ORV areas within the CRA, while the rest of the CRA is designated either open, closed, or limited. The designated ORV areas are primarily used for organized events. About 250 recreational cave permits are issued each year, which account for about 2,000 visitor use days. About 80 percent of the permits are for three recreational caves in the McKittrick Hill Caves Special Recreation Management Area.

Riparian/Wildlife/Endangered Species Program

The wildlife program in the CRA includes inventory, planning, habitat improvement projects, mitigation to curtail potential impacts from other activities, and compliance/monitoring. The Carlsbad RMP directed that a Wetland-Riparian Habitat Management Plan (HMP) be developed for the resource area. The plan, developed in 1989, outlines specific measures to protect and improve riparian areas throughout the CRA. Riparian areas in the CRA include the Pecos River, Black River, Delaware River, gypsum/karst springs, limestone springs, ephemeral playas, and hypersaline lakes. Wildlife habitat improvement is funded through the Sikes Act Habitat Improvement Program. These projects include wildlife watering units, playa lake enclosures, spring improvements, prescribed burns, cottonwood plantings, soil erosion structures, and the BLM's 8100 range improvement program.

All areas on public land meeting riparian or wetland habitat criteria have been assessed to determine what protection is needed for wildlife and endangered species. Protection measures selected for individual situations include protective fencing, adjustments in livestock use, establishment of buffer zones, and/or no leasing or no surface occupancy for oil and gas development.

The Carlsbad RMP directs that habitat improvement projects will be implemented where necessary to stabilize and/or improve unsatisfactory or declining habitat conditions. These projects will be identified through HMPs or Cooperative Management plans for grazing allotments. The Carlsbad RMP identifies seven specific HMPs for development. These plans are designed around specific areas, specific habitat types, or specific suites

of organisms. Examples are HMPs for mesquite sand dune/sand shinnery oak habitat, for aquatic/riparian areas, and for raptors. Specific actions, including protocol, for monitoring threatened and endangered species, are contained in the HMPs.

The Carlsbad RMP gives priorities for implementing wildlife/endangered species projects. First priority is given to monitoring, maintaining, or improving sensitive habitats for threatened or endangered species. No data resulting from these monitoring efforts were provided in the BA.

A BLM resource specialist (biologist or botanist) conducts a threatened, endangered, candidate, State-listed, or sensitive species clearance prior to the beginning of any project. If a "may affect" determination is made, consultation is undertaken with the agency listing the species. The results of the consultation determine the course of action necessary to avoid adverse effects to the species. Since 1989, an average of 500 threatened and endangered species clearances per year have been done in the CRA. None have resulted in requests for formal consultation.

Social Management Area and Area of Critical Environmental Concern Program

There have been 21 areas designated as Special Management Areas (SMAs), Areas of Critical Environmental Concern (ACECs), or Research Natural Areas (RNAs) under the direction of the Carlsbad RMP. These areas total 142,609 acres and vary in size from 4 to 55,800 acres. Some of these areas were established principally for the protection and management of threatened or endangered species. Each area has its own set of management prescriptions, including monitoring if appropriate to the purpose of the area.

Status of The Pecos Bluntnose Shiner (Range-wide)

The Pecos bluntnose shiner (*Notropis simus pecosensis*) was listed as a threatened species with critical habitat on February 20, 1987 (USFWS 1987). Its critical habitat in the Pecos River includes a 64-mile reach from 10 miles south of Fort Sumner to 12 miles south of the De Baca/Chaves County line and a 37-mile reach from near Hagerman to near Artesia. The principal reason for its listing was habitat alteration due to dam construction resulting in an altered hydrograph that reduced peak and base flows and increased the likelihood of channel intermittency. Water diversion for irrigation, habitat loss due to channel incision, decreased water quality as a response to lower base flows, and piscivory by non-native predatory fish species have also contributed to its decline.

The Pecos bluntnose shiner is a moderate-sized shiner up to 95 millimeters long. It is separable from co-occurring shiners by its robust body, blunt and rounded snout, and large slightly subterminal mouth that usually extends even with the pupil. The species is pallid gray to greenish-brown dorsally and whitish ventrally. A wide silvery lateral stripe extends from the pectoral girdle to the caudal base. Pelvic and anal fins lack pigmentation, dorsal and pectoral fins have small black flecks along rays, and the caudal fin is variably pigmented (USFWS 1992).

Pecos bluntnose shiner in the Pecos River are most frequently encountered between Fort Sumner and Roswell. Elsewhere in the historical range of the subspecies, the river is intermittent or otherwise modified and the bluntnose shiner is uncommon or absent

(Hoagstrom *et al.* 1994). Bluntnose shiner occupy a variety of meso-habitats in the river channel (Hoagstrom *et al.* 1994). They are typically found in low-velocity water 17 to 41 centimeters deep over sand substrate (USFWS 1992).

Historically, the Pecos blunt nose shiner inhabited the mainstream of the Pecos River from Santa Rosa downstream to the vicinity of Carlsbad (Hatch, *et al.*, 1985). It has not been recorded in the Texas portion of the Pecos River. Collection records attest to the historical abundance of the species. For example, one collection made in 1939 from near Fort Sumner contained 1,482 bluntnose shiner. Subsequent sampling efforts in the same area in 1981 resulted in the collection of only four blunt nose shiner (USFWS 1992).

Currently, the Pecos bluntnose shiner survives in the Pecos River from below Lake Sumner downstream to the upper end of Brantley Reservoir and seasonally in the reservoir. Hoagstrom *et al.* (1994) divided the currently occupied portion of the river into three reaches for sampling and study purposes. Pecos bluntnose shiner were rare in the first reach from Sumner Dam to Taiban Creek. Reach two from Cedar Creek to the U.S. Highway 380 bridge yielded the highest number of adult Pecos bluntnose shiner in sampling. This reach included the upper critical habitat area for the species. In reach three from the Rio Hondo to the inflow of Brantley Reservoir, the samples included mostly eggs, larvae, and young bluntnose shiner. This reach included the lower critical habitat area.

Life History

The Pecos bluntnose shiner is a pelagic spawner that produces non-adhesive semi-buoyant eggs (Platania 1993). Increased river flows and water temperature stimulate spawning, which occurs repeatedly from June through August. Spawning eggs hatch within 24 to 48 hours and develop into protolarvae that move out of the main channel within 3 to 4 days of hatching. Protolarvae likely move into backwaters where the warm and relatively nutrient-rich waters provide for maximum larval growth rates (Platania 1993). Adult bluntnose shiner live up to 3 years.

Threats

Loss of permanent flow, alteration of flow patterns, introduction of non-native species, and degradation of water quality are the principal threats to Pecos bluntnose shiner. The operation of Sumner Dam has significantly altered flow regimes in the upper Pecos River (Brooks *et al.* 1991). Releases from Sumner Dam to transport irrigation water for use by the Carlsbad Irrigation District have resulted in unnaturally high flows during release periods and unnaturally low flows at other times. The release schedule has affected stream morphology, influencing Pecos bluntnose shiner habitat. The timing and duration of releases has affected spawning, downstream transport of eggs, and survival of juvenile bluntnose shiner.

Non-native fish may compete with and prey upon various life stages of Pecos bluntnose shiner. Sport fisheries have been established in all the lakes on the Pecos River. Introduced predators such as walleye and white bass now occur in the river and may prey on bluntnose shiner. The greatest number of such fish occur in the tailwaters directly below Sumner Dam with few occurring in the shallow sandy-bottomed reaches

preferred by bluntnose shiner (Larson and Propst 1994). The overall impact of nonnative predator on Pecos bluntnose shiner in the river, therefore, remains uncertain. However, it is likely that survival of young Pecos bluntnose shiner displaced into downstream reaches below Roswell is low due to the increased presence of non-native predators that occur in relation to Brantley Reservoir, Pecos bluntnose shiner do not survive long in lake or other calm water environments (USFWS 1992), likely as a result of predation.

Other small fish including plains minnow (*Hybognathus placitus*), speckled chub (*Macrhybopsis aestivalis*), Rio Grande shiner (*Notropis jemezianus*), red shiner (*Cyprinella lutrensis*), and Arkansas River shiner (*Notropis girardi*) are frequently found in association with Pecos bluntnose shiner (Hoagstrom *et. al.* 1994). Plains minnow and Arkansas River shiner are introduced in the Pecos River (Bestgen *et. al.* 1989). It is not yet known if these introduced species directly compete with the natives, but reduction in native populations following non-native introductions is well documented in other river systems.

Water quality contamination has been identified for the Pecos River basin. Studies have identified elevated levels of dissolved heavy metals, which include acute levels of cadmium, copper, and zinc, and chronic levels of aluminum, mercury, and lead (NMWQCC 1994). Elevated levels of organochlorine chemicals have been detected in association with agricultural water uses (USFWS 1992). The Pecos River Basin has approximately 680 assessed river miles that are listed as partially or non supportive of their designated use. The probable causes of nonsupport are metals, turbidity, reduction of riparian vegetation, streambank destabilization, siltation, nutrients, dissolved oxygen and un-ionized ammonia from municipal point sources, total dissolved solids, salinity, temperature, flow alterations, and total phosphorus. The probable sources for these designations are road maintenance, construction, recreation, land disposal, resource extraction, agriculture, hydromodification, municipal point sources, silviculture, unauthorized spills, road runoff, and natural sources (NMWOCC 1994). With the exception of municipal point sources and a few agricultural sources such as feedlots or dairies, all of the water quality contamination sources in the Pecos River are dispersed. Reduced base flow caused by water development activities may increase the detrimental effects of water quality contamination.

Segments of the Pecos River have been assessed separately and some have been identified as not supporting designated or attainable uses (NMWOCC 1994). The assessed segment from Rio Penasco to Salt Creek includes most of the area occupied by Pecos bluntnose shiner in the CRA plus areas upstream for about 50 miles. This segment does not include the Kaiser Channel or Brantley Reservoir. This stream segment is identified as being not fully supported as a limited warm water fishery. Probable causes of nonsupport for this segment of the river are metals, dissolved oxygen, un-ionized ammonia, total dissolved solids, siltation, reduction of riparian vegetation, and streambank destabilization. The toxic contaminant mercury has been found at chronic levels in this river segment. Probable sources of nonsupport for this segment of the river are irrigation return flows, rangeland, municipal point sources, and unknown sources (NMWOCC 1994).

Environmental Baseline (In the Action Area)

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the consultation in progress.

The SR and the U.S. Army Corps of Engineers (Corps) have consulted formally with the Service on their operation of Lake Sumner and Santa Rosa Lake (Cons. #2-22-91-F-198, August 5, 1991, and Cons. #2-22-92-F-240, March 22, 1993). The action under consultation with BR was the volume, timing, and length of water releases from the upstream reservoirs to supply water to Brantley Reservoir for irrigation. Prior to the construction of Brantley Reservoir, downstream storage capacity in McMillan and Avalon reservoirs was limited and several upstream releases were needed during the summer to supply irrigation needs. The greater storage capacity of the new Brantley Reservoir made it possible to meet downstream water needs with fewer, but larger volume, upstream releases. In 1989, a release of 1,100 cfs for 45 days was made from the upstream reservoirs to check the water holding capacity of Brantley Dam. This release almost emptied Santa Rosa and Sumner reservoirs and resulted in extensive post-release drying of the river channel upstream of Bitter Lake National Wildlife Refuge (Brooks *et. al.* 1991). The lack of summer rains and resulting flows exacerbated dry channel conditions and increased seasonally elevated salinity levels in the river downstream of Roswell. The Service concluded in its biological opinion that the agencies' water management of the Pecos River was likely to jeopardize the continued existence of Pecos bluntnose shiner and adversely modify its critical habitat. Reasonable and prudent alternatives to remove jeopardy included the implementation of a pre-Brantley Reservoir release schedule from the upper dams for a 5-year period and the initiation of a 5-year research program to better understand the hydrology of the river and the biological needs of the Pecos bluntnose shiner.

The formal consultation with the Corps involved elevated mercury levels that had been detected in biota in Santa Rosa Lake and the possible effects of its transport downstream with water releases. The reasonable and prudent alternative in connection with this action was for the Corps to implement a study to evaluate the downstream transport of mercury into Pecos bluntnose shiner critical habitat.

Private entities from Roswell south to Lake Arthur hold aggregate water rights of 8,439.2 acre-feet from the Pecos River. There are also an additional 1,374 acre-feet in rights from wells. Although return flows may lessen the net withdrawals from the river, quantified information on such returns is not available. Consequently, these water rights are considered not only as diversions, but as depletions.

The EPA began consulting with the Service in the early 1980s on the effects to threatened and endangered species from the registration of specific pesticides. This evolved into nationwide formal consultations on clusters of pesticides in the late 1980s. A jeopardy opinion was reached for the Pecos bluntnose shiner in Chaves County, New Mexico, for the registration of 51 pesticides. In New Mexico, removal of jeopardy was to be accomplished through the establishment of a State program for the protection of

threatened and endangered species from pesticides. To date, no State program has been implemented and the best way to deal with this highly complex issue is still being studied.

The EPA has consulted informally with the Service on the issuance of National Pollutant Discharge Elimination System permits for the cities of Artesia (Cons. #2-22-95-I-526, September 22, 1995) and Roswell (Cons. #2-22-89-I-032, December 20, 1988, and Cons. #2-22-96-I-473, October 18, 1996) for discharges from their municipal wastewater treatment plants. The Service concurred with a finding of "no effect" for Artesia after the City agreed to modify its effluent storage system. Consultation is continuing concerning the level of nitrates in Roswell's effluent.

The Roswell District of BLM has consulted informally with the Service on potential oil and gas drilling and development in the Pecos River floodplain near Roswell (Cons. #2-22-93-I-350, July 15, 1993, and Cons. #2-22-94-I-028, May 15, 1996). The proposed development of seven gas wells was withdrawn by the applicant. The same applicant recently submitted a proposal to drill three shallow exploratory wells.

Surface management of land in the Pecos River floodplain from Brantley Dam to the Chaves-Eddy County line is under the control of BR, private interests, the State, and BLM. The SR controls about 14 miles of the river, private interests control about 12 miles, the State controls about 1 mile and BLM controls about 4 miles. The BLM lands consist of six separate parcels totaling 400 acres.

Inspection of topographic maps for the reach of the Pecos River from the Chaves-Eddy County line to Brantley Reservoir and comparison with land ownership maps reveals 26 wells, 5 tanks, and associated access roads on private lands in the 100-year floodplain. These maps were last revised in 1955 and 1975 so it is uncertain if additional wells are now present or if some of the wells on the maps have been abandoned and plugged.

For the segment of the river from the Chaves/Eddy County line to Brantley Reservoir, the uplands west of the river are almost completely in private ownership. These lands are used for irrigated agriculture, livestock grazing, oil and gas production, and residential and commercial development, including the town of Artesia. There is an oil refinery in Artesia. The uplands east of the river are in a mixture of BLM, State, and private ownership, with BLM controlling the most land, the State next, and private interests controlling mostly scattered parcels. These lands are used predominately for grazing and oil and gas production. The area east and southeast of Artesia is a major oil and gas producing region. In an area starting at the river on the Chaves-Eddy county line, then extending about 10 miles east, and 25 miles south, there are about 990 oil and gas wells on lands of all ownerships (Burdett *et al.* 1993). The various activities in uplands of irrigated agriculture, livestock grazing, residential and commercial development, and oil and gas production, plus the road, powerline, and pipeline facilities necessary to support the activities, all contribute to the Pecos River not fully supporting its designated or obtainable use as a warm water fishery.

Status of the Species (In the Action Area)

The habitat of Pecos bluntnose shiner in the CRA includes about 30 miles of the Pecos River from the Chaves-Eddy County line to Brantley Reservoir. This is about 15 percent

of the bluntnose shiner's occupied habitat. Critical habitat in the CRA extends about 12 miles from the Chaves-Eddy County line to the U.S. Highway 82 bridge east of Artesia. This is about 10 percent of the designated critical habitat. The Pecos River has been channelized from the U.S. Highway 82 bridge to Brantley Reservoir to improve the efficiency of water flow. In this 18-mile reach, the oxbows have been cut off and drainage from the old channel has been diverted into a constructed drainageway called the Kaiser Channel. This reach of the river is not currently suitable for blunt nose shiner.

Sampling by Hoagstrom *et al.* (1994) determined that Pecos bluntnose shiner in the CRA are mostly eggs, larvae, and young-of -the-year, with few reproducing adults. This suggests there is little adult survival in this part of the river and the bluntnose shiner that are present result from drift from productive upstream areas. High flows from upstream dam releases for unnaturally long periods likely move more eggs and larvae downstream into this reach of the river than would be expected under normal flows.

Monthly collections from May through October during the initial filling of Brantley Reservoir in 1989 revealed the presence of Pecos bluntnose shiner in fish collections through July with no more after that date (Brooks *et al.* 1991). Predation may have accounted for the sampling pattern. Correspondingly, bluntnose shiner are relatively uncommon in pools in riverine habitats.

Critical Habitat Constituent Elements

The physical and biological features that are the basis for designating portions of the Pecos River as critical habitat for Pecos bluntnose shiner are clean permanent water, a main river channel habitat with sandy substrate, and a low velocity flow. These primary constituent elements provide the physical features and biological environment necessary for survival and recovery of the Pecos bluntnose shiner. They provide water of sufficient quality, quantity, and hydrologic regime to meet the requirements of each life stage.

Physical Habitat

The impacts to physical habitat involve the loss of the quantity and quality of water in critical habitat and the change in flow regime. The quantity and timing of flows influence how various habitats are formed and maintained. Water depletions reduce the ability of the river to create and maintain these habitats: degradation of water quality lessens the ability of endangered species to survive in these habitats. Water releases from Sumner Reservoir to meet downstream irrigation demands have a major impact on flow patterns in the Pecos River. The effects of these releases on Pecos bluntnose shiner and its habitat have been discussed previously in this document.

Biological Environment

Food supply, predation, and competition are important elements of the biological environment. Food supply is a function of nutrient supply and productivity, which could be limited by the presence of contaminants. Predation and competition from non-native fishes have been identified as factors in the decline of the bluntnose shiner. Depending upon species-specific tolerance levels, non-native fishes may have competitive advantages in habitats damaged by the presence of contaminants and altered flow

1983 and 1988, and their distance from the river (Kaiser Channel) varies from 300 feet to 2 miles.

Indirect effects are those that are caused by, or result from, the proposed action, and are later in time, but reasonably certain to occur. Interdependent actions have no independent utility apart from the action under consideration. Interrelated actions are part of a larger action, and are dependent on the larger action for their justification. Oil and gas leasing results in several interdependent and interrelated actions because it is merely the initial step in the process of producing commercial quantities of oil and gas. Subsequent to leasing is the possibility of exploration, development, and production of oil and gas, and the eventual abandonment of wells and other facilities. Although there is no current leasing in the 100-year floodplain under the Interim Oil and Gas Leasing and Development Carlsbad Resource Area Environmental Assessment, there could be new or continued development of older leases containing substantial amounts of floodplains. For the area from the Chaves-Eddy County line to Brantley Reservoir, 92 percent of the floodplain acres for which the CRA has leasing authority are presently leased. Oil and gas facilities in a floodplain are exposed to an increased risk from flooding. While no ruptures or releases have occurred in the CRA as a result of flood damage, the possibility of such occurrences increases with additional development in the floodplain. Impacts from development in floodplains include the possibility of soil and water contamination from leaks or ruptures, increased sediment load in the runoff from pads and roads, additional non-point source pollution, and greater erosion rates. Oil field development in or adjacent to floodplains would lead to additional roads and pipeline crossings in floodplains. Floodplain hydraulics could be changed, possibly increasing flood hazards at the development site or elsewhere on the river.

The CRA has surface management responsibility for only 1 percent (400 acres) of the 100-year floodplain from the Chaves-Eddy County line to Brantley Reservoir. Of the 400 acres, 200 acres, divided into three parcels, are in the critical habitat area. These lands have been designated a Special Management Area with a NSO stipulation for oil and gas leasing. These areas are so small in relation to the overall habitat for the Pecos bluntnose shiner that routine BLM surface management activities in these areas are not expected to have major effects on Pecos bluntnose shiner or its habitat. Although the CRA administers 5,655 acres of mineral estate (oil and gas resources) underlying 8ft surface, BLM does not apply restrictions to this surface (BLM, *in litt.* 1997).

Uplands west of the river are in private ownership, but much of the upland east of the river is in BLM surface management. The principal BLM-managed activities on these lands are oil and gas development and grazing. The potential effects of oil and gas activity in floodplains have just been discussed. The potential effects of oil and gas activity in uplands are similar to those in floodplains, although in uplands the greater distance from the river increases the likelihood of successfully preventing spills, sedimentation from soil disturbing activities, or other adverse impacts from reaching waterways. However, oil and gas development in uplands east and southeast of Artesia involves several major oil and gas fields with 25-30 wells per section in some areas, so the likelihood of accidents is increased.

Analysis of the effects of upland livestock grazing on fish and fish habitat requires looking at subtle long-term, incremental changes in watershed functions. Platts (1990) indicates, the long-term, cumulative aspect of grazing impacts, in combination with the

short-term, limited data available on range condition and fish habitat, make a purely empirical analysis of the effects of grazing and grazing management difficult and often misleading, particularly on an allotment by allotment basis. However, extrapolations of general hydrologic and biologic principles and site-specific research data provide a large body of evidence linking degradation of watersheds, stream channels, aquatic and riparian communities, and fish habitat and populations in western North America to grazing and grazing management (Leopold 1924, Leopold 1951, York and Dick-Peddie 1969, Hastings and Turner 1980, Dobyns 1981, Kauffman and Krueger 1984, Skovlin 1984, Kinch 1989, Chaney *et al.* 1990, Platts 1990, Armour *et al.* 1991, Bahre 1991, Meehan 1991, Fleischner 1994).

The effects to the Pecos River and its populations of Pecos bluntnose shiner from CRA-managed livestock grazing in uplands would occur through watershed alteration. Livestock grazing may cause long-term changes to the watershed and its functions. The extent of these changes varies with watershed characteristics, grazing history, and cumulative effects from other human uses and natural watershed processes. Watershed changes due to grazing are more difficult to document than direct livestock impacts to the riparian and aquatic communities due to their long-term, incremental nature, the time lag and geographic distance between cause and effect, and the numerous confounding variables. Despite this, the relationship between livestock grazing in a watershed and effects to river systems is widely recognized and documented (Leopold 1946, Blackburn 1984, Skovlin 1984, Chaney *et al.* 1990, Platts 1990, Bahre 1991, Meehan 1991, Fleischner 1994, Myers and Swanson 1995). Although watershed effects vary depending upon the number and type of livestock, the length and season of use, and the type of grazing management, the mechanisms remain the same and the effects vary only in extent of area and severity (Blackburn 1984, Johnson 1992).

Livestock grazing may alter the vegetative composition of the watershed (Martin 1975, Savory 1988, Vallentine 1990, Popolizio *et al.* 1994). It may cause soil compaction and erosion, alter soil chemistry, and cause loss of cryptobiotic soil crusts (Harper and Marble 1988, Marrs *et al.* 1989, Orodho *et al.* 1990, Schlesinger *et al.* 1990, Bahre 1991). Cumulatively, these alterations contribute to increased erosion and sediment input into streams (Johnson 1992, Weltz and Wood 1994). They also contribute to changes in infiltration and runoff patterns, thus increasing the volume of flood flows while decreasing their duration and decreasing the volume of low flows while increasing their duration (Brown *et al.* 1974, Gifford and Hawkins 1978, Johnson 1992). Groundwater levels may decline and surface flows may decrease or cease (Chaney *et al.* 1990, Elmore 1992). Development of livestock waters may alter surface flows by impoundment, spring capture, or runoff capture.

In its BA (BLM 1996), the CRA provided general information summarizing range conditions Resource Area-wide. Range condition studies (1993 data) indicate 1.8 percent excellent, 49.6 percent good, 45.3 percent fair, 1.4 percent poor, and 1.9 percent unclassified for the condition of CRA rangelands. No information was supplied specific to BLM rangeland conditions in the uplands east of the Pecos bluntnose shiner habitat or watershed conditions in uplands that drain into Pecos bluntnose shiner habitat. Therefore, the Service cannot determine if any of the potential adverse grazing effects to watersheds described in the preceding paragraphs are occurring in Pecos bluntnose shiner habitat or are affecting the shiner. As the preceding discussion indicates, detailed long-term studies would be required to determine what changes in

uplands have occurred due to grazing and if the changes have detriment any affected Pecos bluntnose shiner habitat.

The BLM lands east of Pecos blunt nose shiner habitat in the CRA are subject to other multiple uses besides the oil and gas development and grazing just discussed. These lands are open to recreational use including ORVs; the sale of mineral materials such as caliche, sand, and gravel; the establishment of ROWs for roads, electric utilities, or pipelines; and other minor uses. These activities combined with oil and gas, and grazing may have aggregate effects beyond what would be anticipated if the activities occurred separately, but the complexity of the interactions prevent any meaningful analysis of the results or of effects to the Pecos bluntnose shiner.

Cumulative effects

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities on endangered or threatened species or critical habitat that are reasonably certain to occur in the foreseeable future. The numerous actions that may contribute to portions of the Pecos River being partially or non supportive of its designated uses provide examples of ongoing or future non-Federal activities that may affect the Pecos bluntnose shiner. These actions include, but are not limited to, road maintenance, construction, recreation, land disposal, resource extraction, agriculture, hydromodification, municipal point sources, silviculture, unauthorized spills, and road runoff. Because most of the lands adjacent to the river are in private ownership and have been developed for agricultural, industrial, municipal, and other uses, non-Federal actions can be expected to have the greater overall influence on water quality for the shiner. Future Federal actions are subject to the consultation requirements established in section 7, and, therefore, are not considered cumulative in this analysis.

Conclusion

The Service has evaluated the potential threats and the relative importance of the Pecos bluntnose shiner that occur in the CRA. Sampling indicates that few bluntnose shiner of ,reproductive age occur in the CRA, indicating that this reach of the river does not support a reproducing population. It is unknown if any of the bluntnose shiner in this reach of the river are able to migrate and spawn further upstream. The principal threat to the Pecos blunt nose shiner is management of water flows in the river, an activity under the control of agencies other than BLM. Another threat to the Pecos bluntnose shiner is water quality degradation in the Pecos River, which can occur through activities in the river floodplain or through activities in the upland portion of the watershed. Activities in the floodplain will have the greater immediate influence on water quarterly.

The Service has identified the leasing and subsequent development of oil and gas resources in the Pecos River 100-year floodplain as an activity under CRA management control that has the potential to adversely affect water quality and thus the Pecos bluntnose shiner. The CRA has leased 5,555 acres for oil and gas development in the Pecos River floodplain where Pecos bluntnose shiner are found. There has been relatively little development of these leases to date, with only five active wells. No ruptures or releases of oil, gas, or byproducts have occurred from these wells and protective measures developed by BLM are designed to minimize the likelihood of these events. Any future Applications to Drill on existing Federal leases on BLM or BR-

managed surface in the 100-year floodplain will, when the Carlsbad DRMPA/EIS is finalized, include COAs number 109-118 for floodplain development and other COAs to protect the floodplain. These COAs will greatly reduce, but may not completely eliminate, accidental spills of petroleum oil petroleum byproducts, and will help contain any spills for easier cleanup if accidents occur.

Extensive oil and gas development has occurred on Federal leases in uplands east of the river. Many of these wells have been in production for decades. But despite the time and extent of production, petroleum activities have not been identified by the New Mexico Water Quality Control Commission (1994) as a probable cause for this reach of the Pecos River being nonsupportive of its designated uses.

The New Mexico Water Quality Control Commission (1994) does identify rangeland as a probable cause for this reach of the river being nonsupportive of its designated uses. However, greater knowledge of the biology of the Pecos bluntnose shiner and effects of grazing is still needed to understand if present rangeland conditions are adversely affecting the species.

From our knowledge of the Pecos bluntnose shiner in the CRA and from our understanding of BLM management activities in the CRA, it is the Service's opinion that activities directed under the Carlsbad RMP and activities proposed to be directed under the Carlsbad DRMPA/EIS would not be likely to jeopardize the continued existence of the Pecos bluntnose shiner or adversely modify its critical habitat in the CRA.

INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harass is further defined as an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent to significantly disrupt normal behavior patterns. Normal behavior patterns include, but are not limited to, breeding, feeding, and sheltering. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of section 7(b)(4) and section 7(0)(2), taking that is incidental to, and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the incidental take statement.

The Service does not anticipate that incidental take of Pecos bluntnose shiner will occur because management practices directed under the Carlsbad RMP and proposed to be directed under the Carlsbad DRMPA/EIS will mitigate impacts before take occurs. Should any take occur, the CRA must reinitiate formal consultation with the Service and provide detailed information on circumstances surrounding the take.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the Carlsbad RMP and the Carlsbad DRMPA/EIS and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility. In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of the conservation recommendations.

The Service recommends that the following conservation recommendations be implemented for the Pecos blunt nose shiner:

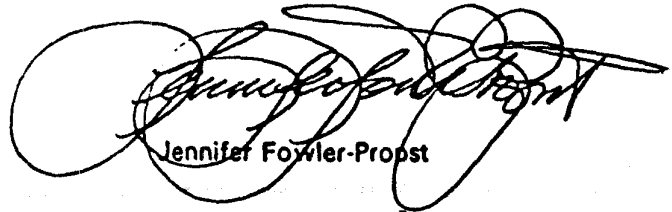
1. Continue the policy contained in the Interim Oil and Gas leasing and Development Environmental Assessment of selling no new oil and gas leases on lands within 100-year floodplains, unless or until BLM can demonstrate that other mandatory protective measures will provide equivalent protection.
2. Determine if the oil and gas leasing recommendations and leasing stipulations provided by BR for Brantley Reservoir provide as much protection for potentially flooded areas as do the proposed BLM policies for oil and gas leasing and development in 100-year floodplains. If the recommendations and stipulations provided by BR give less protection to possibly flooded areas of Brantley Reservoir than do proposed BLM policies for 100-year floodplains, meet with SR to encourage strengthening the recommendations and stipulations.
3. The Carlsbad Resource Area Draft Resource Management Plan Amendment/Environmental Impact Statement (BLM 1994) contains proposed surface use and occupancy requirements for oil and gas activities in floodplains. It states, "No surface occupancy would be allowed within floodplains or within 200 meters of the outer edges of 100-year floodplains, to protect riparian areas" (Appendix 3). Change the wording of this sentence to indicate the purpose of the policy is to protect the integrity of the 100-year floodplain, not just riparian areas within the floodplain.
4. Several possible exceptions are identified for the no surface occupancy policy identified above. Eliminate any exceptions in Pecos bluntnose shiner habitat that could contribute to the degradation of floodplain characteristics and water quality for the shiner.
5. The Roswell Resource Area Proposed Resource Management Plan Final Environmental Impact Statement (BLM 1997) contains 141 COAs (Appendix 4) for oil and gas operations and other activities. The COAs number 109-118 apply to floodplain development. Compile these COAs, other COAs that may apply to floodplain development, and any other applicable information into a single guidance document for availability to floodplain lease holders.

6. When considering exceptions to no surface occupancy requirements, or when conducting project reviews, the evaluation should include not only critical and occupied habitat, but also habitat that could support listed species.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the ongoing activities guided under the Carlsbad RMP and proposed to be guided under the Carlsbad DRMP/AEIS. As required by 50 CFR 402.16, reinitiation of formal consultation is required if: (1) incidental take of a Pecos bluntnose shiner occurs as a result of agency actions, (2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion" or (4) a new species is listed or critical habitat designated that may be affected by the action.

In future correspondence regarding this consultation, please refer to consultation number 2-22-96-F-128. Please contact Charlie McDonald of my staff at (505) 761-4525 if you have any comments or questions.



Jennifer Fowler-Propst

cc:

District Manager, Roswell District, Bureau of Land Management, Roswell, New Mexico State
Director, Bureau of Land Management, Santa Fe, New Mexico (Attn: Andy Dimas) Regional
Solicitor, Department of Interior Solicitor's Office, Albuquerque, New Mexico
(Attn: Tonianne Baca)

Director, Bureau of Land Management, Washington, DC (Attn: Ken Berg)
Geographic Manager, New Mexico Ecosystems, U.S. Fish and Wildlife Service,
Albuquerque, New Mexico

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APPENDIX 4



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Carlsbad Resource Area Headquarters
P.O. Box 1778
Carlsbad, New Mexico 88221-1778

IN REPLY REFER TO:

6840 (067)
#2-22-96-F-128

MAY 13 1997

To: State Supervisor, U.S. Fish and Wildlife Service, New Mexico Ecological Services Office, Albuquerque, New Mexico

From: Area Manager, Carlsbad Resource Area

Subject: Final Biological Opinion for the Pecos bluntnose shiner in the Carlsbad Resource Area

On May 1, 1997, the Carlsbad Resource Area, Roswell District, Bureau of Land Management (BLM) received the final biological opinion on the Pecos bluntnose shiner from your agency as part of our ongoing Section 7 consultation effort.

As part of the BLM's responsibility for furthering the purposes of the Endangered Species Act, the Carlsbad Resource Area has begun implementation of the conservation recommendations identified in the final biological opinion to minimize or avoid adverse effects of BLM actions on the Pecos bluntnose shiner.

In order to keep the Service informed on implementation of the conservation recommendations, we submit the following:

Recommendation #1 - The "no leasing" and "no surface disturbance" requirements in the Proposed Carlsbad Resource Management Plan Amendment (RMPA) provide protection equivalent to the policies contained in the Interim Oil and Gas Leasing and Development Environmental Assessment (EA). The EA is a "bridge" document between the RMPA and the 1988 RMP. The EA will be superseded by the Approved RMPA, so the policies in the EA will be applicable only until the Record of Decision on the RMPA is signed. The intent of the EA was to avoid making leasing decisions that would later be in conflict with the RMPA.

Recommendation #2 - As recommended, we have met with the Bureau of Reclamation and have determined that their leasing stipulations for possibly flooded areas of Brantley Reservoir provide protection equivalent to BLM policies for 100-year floodplains.

Recommendation #3 - As recommended, the Approved RMPA will read, "Surface disturbance will not be allowed within up to 200 meters

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of the outer edge of the 100-year floodplains, to protect the integrity of the floodplains.”

Recommendation #4 - As recommended, the Approved RMPA will reflect that there will be no exceptions to the no surface disturbance policy in floodplains adjacent to critical or occupied Pecos bluntnose shiner habitat except where such disturbance may be related to enhancement or protection of the habitat.

Recommendation #5 - The Carlsbad Resource Area, in cooperation with the USFWS, will consider the need for, and usefulness of, compiling a set of practices relating to activities in 100-year floodplains following approval of the RMPA. A decision on whether to proceed with the development of such a document is tentatively scheduled for FY98.

Recommendation #6 - As recommended, activity evaluations and reviews will consider impacts on habitats that could support listed species.

Thank you for your assistance and cooperation. If you have any further questions or comments relative to this matter, please contact John Sherman at (505) 887-6544.

/s/ TIMOTHY J. BURKE

Acting

cc:

NM 060, D. Stout

NM 932, A. Dimas

APPENDIX 5

PROTESTS ON THE CARLSBAD RMP A

This appendix contains a list of protesters, the issues or concerns raised in protests that were addressed by the BLM Director or the New Mexico State Director, and a list of text changes.

**TABLE 1
LIST OF PROTESTERS
CARLSBAD RMPA**

Name, Organization of Protester	Number of Issues, Concerns Identified		Action
	Issues	Concerns	
New Mexico Oil and Gas Association (NMOGA)	4	2	
George Folks, Spirit Energy			dismiss
Larry Nash, GPM Gas Corp.			dismiss
Bill Pierce, Penwell Energy			dismiss
Santa Fe Energy			dismiss
Johnny Slaughter, Pool Energy			dismiss
T.E. Yates, American Trading			dismiss
Kelly L. Maclaskey, Maclaskey Oilfield Services			dismiss
George F. Sharpe, Merrion Oil and Gas			dismiss
Kenneth D. Reynolds, WEK Drilling			dismiss
Controlled Recovery Inc.			dismiss
John Mason, Burnett Oil Co.			dismiss
Charles R. Wolle			dismiss
B.J. Caldwell, Saga Petroleum			dismiss

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Name, Organization of Protester	Number of Issues, Concerns Identified		Action
	Issues	Concerns	
R.F. Gray			dismiss
Edward R. Hudson, Hudson, Inc.			dismiss
Gary L. Thomas, Enron Oil and Gas			dismiss
Ken Gray, Devon Energy			dismiss
Bob Shelton, Nearburg Expl.			dismiss
Harry Spannaus, Parker & Parsley			dismiss
Kenton Hammonds, Armstrong Energy			dismiss
Joe Janica, Tierra Explorations			dismiss
John R. Gray, Marbob Energy			dismiss
Robert Bayless			dismiss
Worth Carlin, Bass Enterprises			dismiss
Dennis Hendrix, Great Western Drilling			dismiss
Kenneth Barbe, Manzano Oil			dismiss
Elizabeth Bush, ARCO Permain	2	1	
Worth Carlin, Bass Enterprises	3	2	
R.J. Schneider, Texaco	1	3	
A.R. Kukla, Marathon	3		
J.F. Newville, Chevron	1	2	

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Name, Organization of Protester	Number of Issues, Concerns Identified		Action
	Issues	Concerns	
Chuck Moran, Yates Petroleum	5	3	
Chaves County	2		
Doug Lunsford	2		
Greg Nibert	2		
Karolyn King Nelson			dismiss
Calder Ezzell	2		
Jerry Cooper, Pogo Producing			dismiss
William Waggoner, Independent Petroleum Assn of NM			dismiss
Dan Girand, Mack Energy Corp.	3		
Curtis Doyal	1		

**TABLE 2
LIST OF PROTEST ISSUES AND CONCERNS
CARLSBAD RMPA**

Name, Organization of Protester	Issue Number	Concern Number	Topic
New Mexico Oil and Gas Association	I-1		maps
	I-2		wilderness study areas
	I-3		archeology
		C-1	species protection
		C-2	prairie chickens
	I-4		caves and karst
Elizabeth Bush, ARCO Permian	I-1		archeology
		C-1	species protection
	I-2		caves and karst
Worth Carlin, Bass Enterprises	I-1		no true alternative
	I-2		cultural
		C-1	Maroon Cliffs
	I-3		prairie chickens
		C-2	sand dune lizard
R.J. Schneider, Texaco	I-1		following state law
		C-1	visual resource management

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Name, Organization of Protester	Issue Number	Concern Number	Topic
		C-2	slope, fragile soils
		C-3	sand dune lizard maps
A.R. Kukla, Marathon Oil	I-1		archeology, cost recovery
	I-2		caves and karst
	I-3		caves and karst
J.F. NewVille, Chevron Oil	I-1		prairie chickens
		C-1	slope, fragile soils
		C-2	Alternative F treatment
Chuck Moran, Yates Petroleum	I-1		wilderness study areas
	I-2		Maroon Cliffs
		C-1	caves and karst
	I-3		sand dune lizard, new info.
	I-4		takings implications
		C-2	slopes, fragile soils
		C-3	cost recovery, cultural
	I-5		participation in process
Chaves County	I-1		plan conformance
	I-2		maps
Doug Lunsford	I-1		

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Name, Organization of Protester	Issue Number	Concern Number	Topic
	I-2		caves and karst
Greg Nibert (same as Lunsford)	I-1		maps
	I-2		caves and karst
Calder Ezzell (same as Lunsford)	I-1		maps
	I-2		caves and karst
Dan Girand. Mack Energy	I-1		Alternative F treatment
	I-2		maps
	I-3		caves and karst
Curtis Doyal	I-1		conformance with county ordinance

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TABLE 3
TEXT CHANGES

Changes were made in the Proposed RMPA/Final EIS as a result of: (1) efforts to resolve protests on the Proposed RMPA,, (2) requirements of the U.S. Fish and Wildlife Service for implementing conservation recommendations developed by the Service under Section 7 of the Endangered Species Act; and (3) corrections of typographical or editorial errors identified by reviewers of the Proposed RMPA. These changes are listed below.

Page numbers and other references are from the Proposed RMPA/Final EIS. Partial paragraphs at the tops of columns and bullets are not counted as paragraphs when determining the entries for paragraphs. The number code in the "Reason" column refers to one or more of the three reasons described above in the previous paragraph.

Page	Column	Paragraph	Line	Should Be:	Reason
2-6	2	1		<p>Replace paragraph with: Areas designated as Wilderness Study Areas (WSAs) are closed to leasing as part of the Wilderness Interim Management Policy. Existing leases in WSAs would not be reissued once they expire. The four WSAs in the Carlsbad Resource Area are not recommended for wilderness designation. If Congress accepts those recommendations and the WSA status is removed, the lands currently in the WSAs would be managed for multiple use under management prescribed in the Carlsbad RMP (1988) and the Carlsbad RMP Amendment. If not designated wilderness, future management of the WSAs would be as follows:</p> <p>Mudgetts WSA (2,941 acres): The 1,881 acres within in the cave protection zone established by the Lechuguilla Cave Protection Act of 1993 and the Dark Canyon Environmental Impact Statement would be managed according to the requirements of the Act and the EIS (see Map 3). The remaining 1,060 acres would be open to leasing subject to the Surface Use and Occupancy Requirements, the Practices for Oil and Gas Drilling Operations in Cave and Karst Areas, and the Roswell District Conditions of Approval.</p> <p>Lonesome Ridge WSA (3,505 acres): The 2,990 acres within the Lonesome Ridge ACEC would be managed according to the prescriptions described in the 1988 Carlsbad RMP, as amended by this plan. The remaining 515 acres would be managed according to the prescriptions for the Guadalupe Escarpment Scenic Area Zone 1 described in the 1988 Carlsbad RMP, as amended by this plan.</p>	1,3

APPENDIX 5

Page	Column	Paragraph	Line	Should Be:	Reason
2-6	2	4	3-7	<p>Devil's Den WSA (320 acres): The entire area would be open for future leasing with no surface occupancy. Extremely steep slopes in the entire area preclude surface occupancy.</p> <p>McKittrick Canyon WSA (200 acres): The entire area would be open for future leasing with no surface occupancy. Extremely steep slopes in the entire area preclude surface occupancy.</p> <p>...allowed within up to 200 meters of 100-year floodplains, drainages, playas, water wells...</p>	3
2-10		Table 3		Replace with new table printed in the Approved RMPA.	1
2-12		Table 5		Replace with new table printed in the Approved RMPA.	1,3
2-13		Table 6		Replace with new table printed in the Approved RMPA.	1,3
AP3-4	1	2	3	...would not be allowed on slopes over 30 percent.	1
AP3-4	1	3		<p>Replace paragraph and bullets with:</p> <p>* Streams, Rivers and Floodplains: Surface disturbance will not be allowed within up to 200 meters of the outer edge of 100-year floodplains, to protect the integrity of those floodplains. On a case-by-case basis, an exception to this requirement may be considered based on one or more of the criteria listed below. The first three criteria would not be applied in areas of identified critical or occupied habitat for federally listed threatened or endangered species.</p> <p>* Additional development in areas with existing developments that have shown no adverse impacts to the riparian areas as determined by the Authorized Officer, following a case-by-case review at the time of permitting.</p> <p>* Suitable off-site mitigation if habitat loss has been identified.</p> <p>* An approved plan of operations ensures the protection of water or soil resources, or both.</p> <p>* Installation of habitat, rangeland or recreation projects designed to enhance or protect renewable natural resources.</p>	2

RESPONSE TO ISSUES IDENTIFIED IN THE LETTERS PROTESTING THE CARLSBAD PROPOSED RMPA

Issue: Maps in the Proposed RMP/RMPA do not contain enough detail to determine the boundaries of the ACECs, springs, lizard habitat, and most other critical areas.

Response: The maps in the RMP/RMPA are representational and are not intended to identify in detail every parcel in the Roswell District under BLM administration. Large scale, site specific maps containing the information described by NMOGA are available for review in our offices. Offers to provide larger scale maps or to discuss specific areas of interest were routinely made during the planning process. Santa Fe Energy, ARGO Permian, and Amoco Oil are among those who reviewed larger scale maps. We encourage any interested operators to consult with BLM staff to get site specific information prior to making plans for leasing or development. Additionally, activity plans that implement RMP level decisions will contain site specific maps.

Issue: Public lands released from wilderness study area status must be made available for multiple use.

Response: The text in the Proposed RMP/RMPA regarding the treatment of current wilderness study areas (WSAs) is not written clearly enough to avoid misunderstanding. The text in the Approved RMP and Approved RMPA will reflect changes that clarify future multiple use management of current WSAs that are not designated wilderness by Congress.

Aside from creating a misunderstanding, the Proposed RMP/RMPA discloses the proposed future management of former WSAs under multiple use that will avoid significant impacts on landscapes characterized by features such as steep slopes and lava flows. The RMP/RMPA does not propose the withdrawal of lands currently in wilderness study areas or the con-

tinued management of these areas as WSAs. Rather the plans propose using discretionary leasing closures and possible eventual management under authorities other than the regulations governing wilderness.

With regard to other points in this protest issue, there is a distinct regulatory and procedural difference between a withdrawal and a closure to leasing. A withdrawal removes specific public lands from the operation of the public land laws affecting uses of the public lands for which use authorizations are not discretionary" A closure to leasing is a discretionary action. Section 202 (e) of FLPMA (43 USC 1712) addresses the exclusion of uses and the procedures required to implement an exclusion, including giving notice to the Congress. The proposals in the RMP/RMPA regarding future management of public lands currently in wilderness study areas are consistent with Section 202(e). And, the proposals for management of these areas are consistent with the concept of multiple use. FLPMA clearly states that multiple use does not mean every use on every tract of public land, and that some uses will have emphasis over others.

Issue: The RMP/RMPA should contain language that provides users with opportunities for cost recovery when choosing to fulfill the BLM's responsibility for cultural reviews and information recovery. The plans should support operator's efforts for cost recovery.

Response: This issue has been raised repeatedly during the development of the RMP/RMPA and in conjunction with other public land management activities. The National Historic Preservation Act (as amended) in Section 110 (g), Onshore Oil and Gas Order No. 1 in Section 111.E. and Notice to Lessees 85-1 New Mexico provide the authority and policy for the BLM to require applicant funded cultural resource pro-

tection activities. The RMP clearly states that existing and future Onshore Orders and NTLs will be enforced. It is obvious and does not need to be stated in a land use plan that the BLM will follow laws and regulations. A land use plan does not change laws and regulations and other regulatory guidance, it defines and describes how that guidance will be implemented. A land use plan is not the vehicle for establishing cost recovery practices.

Issue: Including karst management in the RMP/RMPA goes beyond the protection provided under the Cave Protection Act. Karst is not a significant cave, and as such, a karst is not a special resource needing special protection. The presence of a karst does not mean that a cave is present deserving protection under the Act.

Response: There seems to be continuing misunderstanding about the relationship between caves and karst and the belief that the BLM is using the Federal Cave Resources Protection Act as the authority for the management of karst.

The BLM is not contending that the Federal Cave Resources Protection Act specifically requires the protection of karst. BLM policy under Manual 8380 (Cave Resource Management) mandates that karst or cave bearing formations be considered in the RMP process.

Karst is a landform where the topography has been formed chiefly by the dissolving of rock. In some cases, the dissolving of rock may be extensive enough to form passages through which an individual could pass. Surface expressions of karst include sinking streams, swalletts, springs and resurgences, and the presence of sinkholes and caves. These features are important for ground-water recharge of karst systems.

Karst can contain caves, and caves in karst can be significant. The definition of "cave" in the Federal Cave Resources Protection Act " ... means any naturally occurring void, cavity,

recess, or system of interconnected passages which occurs beneath the surface of the earth ... which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man made. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the entrance."

Issue: The RMP/RMPA does not provide a true alternative for use of the resources on public lands. The RMP should encourage and promote the economic beneficial use of the lands and provided the mechanism for individuals and companies to secure leases and permits to explore for and develop the mineral resources, to secure rights-of-way and easements, and to allow the grazing of livestock.

Response: The Federal Land Policy and Management Act of 1976 (FLPMA) calls for the BLM to manage the public lands for the production of commodities (oil and gas, coal, timber) and to preserve and protect certain public lands in their natural condition, to provide food and habitat for fish, wildlife and livestock, and to provide opportunities for outdoor recreation and human occupancy and use. The Proposed Roswell RMP encourages the wise use of the public lands, provides for multiple use (including commodity production), and adheres to the mandates of the FLPMA. Likewise, the Proposed Carlsbad RMPA encourages those practices with respect to oil and gas. The Proposed RMP/RMPA strikes a balance between commodity production and protection of resources. Alternatives that emphasized even greater commodity development and even greater environmental protection also were analyzed in the environmental impact statement.

Under the Proposed Roswell RMP and Proposed Carlsbad RMPA, 96 percent of the federal mineral estate in the Roswell District remains open for oil and gas leasing. Under the Proposed Roswell RMP, more than 99 percent of the BLM managed mineral estate would remain open to mineral entry under the mining laws. Livestock grazing remains basically unchanged in the Proposed Roswell RMP. We

estimate a maximum of only 3,446 AUMs (about one percent of the licensed use in the Roswell Resource Area) would be affected by BLM management. These are but a few of the many examples which illustrate that our proposed management will provide for continuing use by the public.

Issue: The RMP needs to clarify that the ultimate financial responsibility of recovery of cultural information lies with the BLM. The RMP needs to address means to provide resources users with opportunities for cost recovery, if users contribute funding in an effort to expedite recovery.

Response: This issue has been raised repeatedly during the development of the RMP/RMPA and in conjunction with other public land management activities. The National Historic Preservation Act (as amended) in Section 110 (g), Onshore Oil and Gas Order NO.1 in Section III.E. and Notice to Lessees 85-1 New Mexico provide the authority and policy for the BLM to require applicant funded cultural resource protection activities. The RMP clearly states that existing and future Onshore Orders and NTLs will be enforced. It is obvious and does not need to be stated in a land use plan that the BLM will follow laws and regulations. A land use plan does not change laws and regulations and other regulatory guidance, it defines and describes how that guidance will be implemented. A land use plan is not the vehicle for establishing cost recovery practices.

Issue: The Proposed RMP/RMPA fails to identify the location of the expanded prairie chicken area. The lack of information causes makes it difficult for the oil and gas industry, and other resource users, to analyze the effects of management.

Response: The maps in the RMP/RMPA are representational and are not intended to identify in detail every parcel in the Roswell District under BLM administration. Large scale, site specific maps containing the information described by N MOGA are available for review in

our offices. Offers to provide larger scale maps or to discuss specific areas of interest were routinely made during the planning process. Santa FE~ Energy, ARCO Permian, and Amoco Oil are among those who reviewed larger scale maps. We encourage any interested operators to consult with BLM staff to get site specific information prior to making plans for leasing or development. Additionally, activity plans that implement RMP level decisions will contain site specific maps.

Issue: The BLM failed to develop a Proposed Plan that recognizes the State of New Mexico's laws and regulations, which protect the state's resources.

Response: It has been stated repeatedly in the Draft RMP/RMPA, the Proposed RMP/ RMPA and in the responses to comments on the Draft RMP/RMPA that our proposed management is consistent with state law wherever possible. Examples include air quality, water quality, water rights, and certain oil and gas well drilling practices. In some cases where state standards are inconsistent with federal standards, the state standards are preempted and are not applicable. The Proposed RMP/RMPA was submitted to the Governor of New Mexico for the required 60-day consistency review. We received no statement of inconsistency from the Governor, following this review.

Issue: Public lands released from wilderness study area status must be made available for multiple use.

Response: The text in the Proposed RMP/ RMPA regarding the treatment of current wilderness study areas (WSAs) is not written clearly enough to avoid misunderstanding. The text in the Approved RMP and Approved RMPA will reflect changes that clarify future multiple use management of current WSAs that are not designated wilderness by Congress.

Aside from creating a misunderstanding, the Proposed RMP/RMPA discloses the proposed future management of former WSAs under

multiple use that will avoid significant impacts on landscapes characterized by features such as steep slopes and lava flows. The RMP/ RMPA does not propose the withdrawal of lands currently in wilderness study areas or the continued management of these areas as WSAs. Rather, the plans propose using discretionary leasing closures and possible eventual management under authorities other than the regulations governing wilderness.

With regard to other points in this protest issue, there is a distinct regulatory and procedural difference between a withdrawal and a closure to leasing. A withdrawal removes specific public lands from the operation of the public land laws affecting uses of the public lands for which use authorizations are not discretionary. A closure to leasing is a discretionary action. Section 202 (e) of FLPMA (43 USC 1712) addresses the exclusion of uses and the procedures required to implement an exclusion, including giving notice to the Congress. The proposals in the RMP/RMPA regarding future management of public lands currently in wilderness study areas are consistent with Section 202(e). And, the proposals for management of these areas are consistent with the concept of multiple use. FLPMA clearly states that multiple use does not mean every use on every tract of public land, and that some uses will have emphasis over others.

Issue: The Proposed RMP/RMPA fails to recognize new information disclosed to the BLM about the effects of ground disturbing activities. At a meeting where the sand dune lizard was discussed, it was disclosed that habitat disturbance may increase lizard habitat.

Response: The paragraph referenced in this protest issue addresses management of sand dune lizard habitat. The discussions of the sand dune lizard, including proposed management prescriptions, are based on the latest information available when the document was prepared for printing, which predates the meeting we believe is referenced in this protest issue. New data affecting the management of the public lands will become available and will be evalu-

ated as implementation of the RMP progresses. Procedures exist to accommodate new information when it affects RMP decisions. The site specific NEPA analysis that will be conducted on proposals for development in areas of lizard habitat will be based on the latest information available and decisions will be rendered accordingly. If a situation exists where disturbance is beneficial to wildlife, the flexibility of the surface use and occupancy requirements and conditions of approval could be employed to allow that disturbance.

Issue: Fencing standards in the Proposed RMP and BLM fencing regulations discussed in responses to public comments on the Draft RMP/ EIS conflict with the Taylor Grazing Act and requirements of the State of New Mexico.

Response: The Proposed RMP's requirements for fencing are consistent with the Taylor Grazing Act. Section 4 of the Act (43 USC 315c) prescribes that permittees are required to comply with provisions state law with respect to the cost and maintenance of partition fences. Fencing standards are not discussed in Section 4.

The BLM's fencing standards were developed pursuant to valid federal authority. The standards control the construction of fences on federally owned public lands. To the extent that state standards are inconsistent with the federal standards, the state standards are preempted and are not applicable.

The fencing standards have been used for many years in the Roswell Resource Area. Fences constructed to those standards have performed satisfactorily in controlling livestock. Exceptions to fencing standards, such as changes in fence height or wire spacing, can be granted on a case-by-case basis in areas of special need.

Economic analysis of proposed range projects, including fences, is conducted as part of the site specific analysis of the proposal. If a project is not viable economically, it would be redesigned or dropped from further consideration.

Issue: Chaves County was not invited to participate in the development of the RMP/RMPA. There has been minimal input from New Mexico counties in developing the RMP/RMPA. Data provided by Chaves County was not considered in the RMP/RMPA.

Response: Chaves County was invited to participate in the development of the RMP/RMPA from the outset of the process and has been included in the various mailings during the planning process. A public scoping meeting on the Roswell RMP was held with the Chaves County Commissioners on September 13, 1990. Since that time, the Chaves County Commission (and its Public Lands Advisory Committee or PLAC) has been provided with information and opportunities for meetings, briefings and comment. Briefings on the RMP/RMPA were provided to the Chaves County PLAC on February 23, 1995, October 16, 1996, and December 18, 1996. Exhibit J submitted with this protest (a copy of Chaves County's comments on the Draft RMP/EIS) is evidence of the County's participation in the planning process. The extent to which county government has taken advantage of those opportunities has been the choice of the Commission.

With respect to the participation of the other six counties in the Roswell Resource Area and the other two counties in the Carlsbad Resource Area, the opportunities afforded Chaves County were offered to those counties, as well. Scoping meetings were held with the other county commissions between September 10, 1990 and October 2, 1990. As with Chaves County, the extent to which these county governments have taken advantage of opportunities to participate in the planning process has been the choice of the respective commissions.

There seems to be confusion on the part of Chaves County between the development of the Proposed RMP/RMPA and the development of the EIS on the standards for rangeland health and guidelines for livestock grazing in New Mexico. Appendixes A through E, I, and K through M referenced in the protest were not

submitted by the County to assist in development of the RMP. The topics of these appendixes and the dates on transmittal pages show that these appendixes obviously are meant to be considered in the development of the standards and guidelines EIS. If Chaves County intended for that information to be used in the RMP, it should have been submitted prior to the protest period (BLM Manual 1617/24A3).

Issue: The Chaves County Land Use Plan and Resolution R-92-51 amending the Chaves County Land Use Policies plan were ignored during development of the RMP/RMPA.

Response: The Chaves County Land Use Policies Plan and Chaves County Resolution R-9251 were not ignored during the planning process. The regulations implementing the Federal Land Policy and Management Act (43 CFR 1 Hi 0.3-2(a)) prescribe that resource management plans shall be consistent with the officially approved resource related plans of local governments so long as the resource management plans also are consistent with the purposes, policies and programs of federal laws and regulations applicable to public lands.

Resolution R-92-51 comprises policies that generally are inconsistent with existing laws and regulations governing the management of the public lands. It is not possible to ignore federal laws and regulations in order to comply with the policies in the resolution. The Attorney General of New Mexico, in Opinion No. 94-01 of April 18, 1994, concludes that various land use plans and ordinances adopted by several counties, including Chaves County, have no legal effect. The opinion states " ... to the extent the ordinances affect federal lands, they are preempted by the Supremacy Clause of the United States Constitution ... " Since that opinion was rendered, there have been several decisions from court cases that have offered essentially the same conclusion.

There are many examples of consistency between the 1973 Chaves County Comprehensive Land Use Policy and management actions

proposed in the Roswell RMP. Some of the comparable actions are: protect and improve watersheds, including reducing sediment in the Pecos River; control brush to improve range condition; limit off-road vehicle use; plan and control road, pipeline or other construction to avoid needless disturbance and subsequent loss of vegetation and soil; rehabilitate disturbed areas; establish areas for intensive off-road vehicle use; use fencing to control impacts of recreation use; encourage good range management practices; and, produce wildlife habitat for the lesser prairie chicken and other wildlife species through good range management.

The BLM desires to continue working with Chaves County to assure that the county government is involved in the management of the public lands and that our respective management is complementary.

Issue: The RMP usurps the water and fencing laws of New Mexico.

Response: Various agencies of the State of New Mexico have authority over the appropriation, use, and protection of water resources in the state. BLM has stated repeatedly in the RMP, both in the description of proposed activities and in responses to public comments, that BLM management of water resources is consistent with state law and that BLM adheres to state law. Nevertheless, the BLM is responsible for the protection of all resources under its authority, including fresh water supplies. In fact, groundwater and drinking water supplies are considered critical elements of the human environment and must be addressed during the preparation of environmental analyses (BLM Handbook H-1790-1, Appendix 5). It is within the authority of the BLM to temper the impacts of use authorizations with reasonable mitigations designed to protect fresh water supplies. This does not usurp authority of the State Engineer, the NMOCD or the Water Quality Control Commission.

The BLM's fencing standards were developed pursuant to valid federal authority. The stan-

dards control the construction of fences on federally owned public lands. To the extent that state standards are inconsistent with the federal standards, the state standards are preempted and are not applicable.

The fencing standards have been used for many years in the Roswell Resource Area. Fences constructed to those standards have performed satisfactorily in controlling livestock. Exceptions to fencing standards, such as changes in fence height or wire spacing, can be granted on a case-by-case basis in areas of special need.

Economic analysis of proposed range projects, including fences, is conducted as part of the site specific analysis of the proposal. If a project is not viable economically, it would be redesigned or dropped from further consideration.

Issue: The RMP/RMPA does not conform to Eddy County Ordinance #20. The complete RMP/RMPA is a violation of that ordinance.

Response: The regulations implementing the Federal Land Policy and Management Act (43 CFR 161 0.3-2(a)) prescribe that resource management plans shall be consistent with the officially approved resource related plans of local governments so long as the resource management plans also are consistent with the purposes, policies and programs of federal laws and regulations applicable to public lands. Eddy County Ordinance #20 comprises policies that generally are inconsistent with existing laws and regulations governing the management of the public lands. It is not possible to ignore federal laws and regulations in order to comply with the policies in the ordinance.

The Attorney General of New Mexico in Opinion No. 94-01 of April 18, 1994, concludes that various land use plans and ordinances adopted by several counties, including Eddy County, have no legal effect. The opinion states " ... to the extent the ordinances affect federal lands, they are preempted by the Supremacy Clause of the United States Constitution .. ," Since that

APPENDIX 5

opinion was rendered, there have been several decisions from court cases that have offered essentially the same conclusion.

The BLM desires to continue working with Eddy County to assure that the county government is involved in the management of the public lands and that our respective management is complementary.

BLM management of prairie chicken habitat is based on a variety of information, including scientific literature, inventories and studies conducted by BLM and by other entities, the professional judgement of our biologists, and laws and regulations that govern management of the public lands. Information (found in records and conflict maps) used by BLM to reach conclusions about mitigations of impacts to prairie chickens and their habitat is always available for public review at our Roswell or Carlsbad offices. As new information from current and possible future studies is developed, BLM will make appropriate changes in management.

Concern: The increases in the amount of acreage in the Maroon Cliffs Archeological District that is closed to future oil and gas leasing and that there is a discrepancy in the RMPA text and tables regarding acreage figures for Maroon Cliffs.

Response: BLM used the master title plats to recalculate these acreages: acreage proposed for the Archeological District, approximately 17,839 acres; acreage proposed for closure to leasing, approximately 12,019 acres; acreage proposed for no surface occupancy, approximately 5,820 acres. The text and tables in the Proposed RMPA will be corrected to show these acreages in Approved RMPA. Alternatives ranging from current management to leasing *closure* on the entire expanded archeological district were analyzed in the Draft RMPA.

Under the Federal Land Policy and Management Act (FLPMA) the production of commodities from the public lands has equal footing with the protection of other resources and values, including archeological values. The significance of the values in the Maroon Cliffs Archeological District and the requirements of the National Historic Preservation Act and other Acts dictate that BLM emphasizes the management and protection of cultural resources in this situation.

BLM records show that at the present time, the entire acreage in the expanded, proposed archeological district is leased for oil and gas

development, including the 1,880 acres proposed for no surface occupancy in the 1988 Carlsbad RMP. The proposed combination of a no surface occupancy leasing prescription and leasing closure will not affect existing leases.

BLM recognized that development of existing leases could occur. Nevertheless, the nomination of the expanded Maroon Cliff Archeological District and the use of leasing closures and no surface occupancy leasing stipulations establishes a policy for future management. That policy discloses our intention to provide the highest level of protection possible for the cultural resources in that area.

Development of leases in the area proposed for the Archeological District will occur subject to the practices that guide development, such as the Secretary's 1986 Potash Order, Onshore Oil and Gas Order No.1, Notice to Lessees New Mexico 85-1, conditions of approval, and mitigations developed during NEPA analysis.

Concern: The area designated as potential sand dune lizard habitat in the Carlsbad RMPA is too general and it is imperative that more detailed information be included in the RMPA.

Response: When developing the environmental impact statement, BLM used the potential habitat of the lizard to analyze the possible impacts. BLM believed this to be the prudent course knowing that as the habitat studies were completed, the actual habitat occupied by the sand dune lizard could be less than the area stated in the proposed RMPA. This turned out to be the case and as data from these studies became available, BLM shared this information with industry as well as the public. As new information from current and possible future studies is developed, BLM will make appropriate changes in management.

These studies may eventually dictate the revision of the SUOR for the sand dune lizard. Avoiding active management of the lizard's habitat will only make future management more

RESPONSES TO CONCERNS IDENTIFIED IN THE LETTERS PROTESTING THE CARLSBAD RMPA

Concern: Protection for the sand dune lizard and the lesser prairie chicken.

Response: BLM policy for wildlife habitat of any species is to manage the public lands to avoid the need to list species as threatened or endangered. For federal and state listed species or federal candidate species, BLM wants to avoid degrading habitat and further listing by either state or federal governments, by maintaining or enhancing populations. At the same time, BLM wants to allow for mineral development and production, livestock grazing, and other uses. The Surface Use and Occupancy Requirements (SUOR) for the lesser prairie chicken and the sand dune lizard will be used as part of BLM management in reaching those goals.

Consultation and cooperation are important in resolving concerns about mapping the locations of wildlife species. Maps can only show expected ranges or habitats. The shinnery oak! dune plant community provides habitat for sand dune lizards and prairie chickens. That plant community has been mapped, and in fact is shown on Map 35 in Chapter 3 of the Draft RMP. Locations of critical or occupied habitat may be mapped, but are variable from year to year and maps may quickly become outdated. Lessees need to plan and consult with BLM on issues such as this long before beginning the permitting process.

This concern seems to be based, in part, on confusion about disclosure. In developing the lesser prairie chicken requirements in the SUOR, BLM disclosed the probable area of concern based on habitat (the shinnery oak! dune plant community). BLM listed in Tables A3-1 and A3-2 the largest area to which the requirements might be applied, for purposes of impact analysis. The prairie chicken requirements will actually be applied to a smaller area

when the extent of occupied habitat and the waivers and exceptions in the requirement are factored in. In the Roswell Resource Area, for example, the SUOR would be applied primarily to the core habitat areas on public lands (see Map 8, page 2-21 in Volume 1 of the Proposed RMP).

The Proposed RMP and RMPA discloses that there are combinations of waivers and exceptions that provide flexibility in applying the SUOR. Emergencies are not the only situations in which SUOR could be modified. Applying the SUOR is an attempt to balance resource use with protection of other resources or values.

Concerns with the SUOR, especially those related to wildlife, can be alleviated by consultation and cooperation between operators and BLM prior to applying for APDs and scheduling drilling operations. Timing restrictions in prairie chicken habitat can be avoided, for example, by consulting with BLM about possible constraints on development and by planning development to avoid the booming period, instead of planning development during that period.

Concern: The expansion of the prairie chicken restricted use area and the associated time constraints and the lack of scientific data on which these decisions were based.

Response: Expanded periods of protection are warranted to protect prairie chickens during booming periods and to provide for nesting success. The projected impacts of modifying existing restrictions in prairie chicken areas were discussed in the Draft RMP/RMPA on pages 448 and 4-49. The need for increased booming period restrictions and other information on prairie chicken management is described in comment responses 130-4 through 130-7 in Volume 2 of the Proposed RMP/RMPA.

a halt in drilling is taking property without compensation.

Response: Appendix 5 of the Proposed AMP/AMPA provides for stopping the drilling of an oil or gas well if a bit drop of four feet or more and circulation losses greater than 75 percent occur simultaneously. Only in extremely rare situations, when corrective actions developed by the Operator and BLM have failed, would the drilling of a particular well be stopped permanently.

Approval of an Application for Permit to Drill (APD) authorizes the drilling of a well under specific conditions. The authority for a BLM Authorized Officer to stop a permitted action is clearly stated in 43 CFA 3163.1 (a)(3). Appendix 5 of the Proposed AMP/AMPA referenced in the protest letter discloses the conditions under which BLM would consider requiring drilling operations to cease in cave or karst areas. The court system makes the final determination for a takings situation.

Also, the Approved Roswell AMP and Approved Carlsbad RMPA replace the Interim Cave/Karst Drilling Guide.

difficult, including the possible imposition of restrictions that are more stringent than those in the RMP/RMPA. Sufficient exceptions are included in the SUOR to allow development in many situations.

This concern also is addressed in detail in responses to public comments on the Draft RMP/RMPA. Refer to Volume 2 of the Proposed RMP/RMPA: page 1-33, comment 27-4; page 1-82, comment 29-30; page 312, comment 12888; and page 1-334, comment 143-2.

Consultation and cooperation are important in resolving concerns about mapping the locations of wildlife species. Maps can only show expected ranges or habitats. The shinnery oak! dune plant community provides habitat for sand dune lizards. That plant community can be mapped, and in fact is shown on Map 35 in Chapter 3 of the Draft RMP. Locations of critical or occupied habitat may be mapped, but are variable from year to year and maps may quickly become outdated. Lessees need to plan and consult with BLM on issues such as this long before beginning the permitting process.

Concern: No exceptions to the Visual Resource Management requirements of the Proposed RMP/RMPA found in Appendix 3, Surface Use and Occupancy Requirements.

Response: The painting policy proposed in the Draft RMP/RMPA was changed substantially after the meetings with the NMOGA subcommittee to address this concern. The painting policy in the Proposed RMP/RMPA is written so that Notice to Lessees (NTL) 87-1 NI3W Mexico is the guiding policy for painting of oil field facilities and equipment.

This concern is also addressed by the visual resource management (VRM) contrast rating process and by the application of NTL 87-1 New Mexico. The VRM contrast rating establishes the visual character of the landscape, determines the amount of contrast allowed, analyzes the visual impacts of a proposed action, and suggests mitigations of visual impacts, includ-

ing painting. The contrast rating takes into account "less than pristine visual resources" and development on "adjacent properties." NTL 871 New Mexico establishes the criteria for painting and provides for exceptions. Among the criteria established in the NTL is a criterion for painting existing facilities when the operator proposes to repaint or replace the equipment, and a criterion for painting when permanent equipment is initially installed. In other words, the exceptions already exist in NTL 87-1 New Mexico.

Concern: Inconsistencies within the plan in the management of slopes and fragile soils.

Response: During the meeting with the NMOGA subcommittee, BLM agreed to revisit the topic of occupancy restriction on steep slopes and fragile soils with members of the BLM's planning team. BLM did that. The team concluded that sufficient exceptions were included in the SUOR in Appendix 3 to allow development on slopes greater than 20 percent if adequate mitigations were employed to reduce or eliminate impacts. That requirement was retained in the Proposed RMP/RMPA. In reconsidering this concern, the Carlsbad Resource Area staff agrees with changing the SUOR for slope to 30 percent. This brings the RMPA into line with the decision made in the '1988 Carlsbad RMP and with the requirements of the East Guadalupe Escarpment Habitat Management Area (HMA). Management prescribed for the HMA will remain as written in the RMPA and will supercede the SUOR.

In order to retain consistency in surface management between the two resource areas, the Roswell Resource Area will adopt the 30 percent slope threshold in the SUOR. In both resource areas, the section of the SUOR related to fragile soils will remain unchanged.

Concern: BLM's authority to require that oil and gas drilling be stopped under certain conditions as described in Appendix 5, Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas of the Proposed RMP and that

BERM. An embankment or mound of earth or other material. Examples of the use of a berm include use around a tank battery in an oil field to contain spilled fluids or as a barrier across a road or trail to prohibit travel by motor vehicles.

BEST MANAGEMENT PRACTICE (BMP). Methods, measures, or practices selected on the basis of Site-specific conditions to ensure that water quality will be maintained to its highest practicable level. BMPs include, but are not limited to structural and nonstructural controls, operations, and maintenance procedures. BMPs can be applied before, during, or after pollution producing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 CFR 130.2, EPA Water Quality Standards Regulation). Each BMP should identify: (1) specific management objectives, (2) a thorough description of the practice(s) to be used, and (3) a plan for monitoring the effectiveness of the practice(s) toward meeting the stated objectives, so they can be refined over time. Examples of specific BMPs for New Mexico rangelands are given by New Mexico State University (1983).

BIODIVERSITY. Refers to the variety of life and its processes and includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

CALICHE. A brown or white material commonly found as a subsoil deposit in arid or semi-arid climates which is composed largely of calcium carbonate.

CAVE. Any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, mine, tunnel, aqueduct, or other man made excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man made. The term "cave" includes any natural pit, sinkhole, or other feature which is an extension of the entrance. Refer also to "Significant Cave."

CAVE EXPLORATION. The act of entering a

naturally occurring void, cavity, recess or system of interconnected passages which occurs beneath the surface of the earth, ledge, or cliff to investigate, study or analyze contents, hazards and extent; to travel into new territories for adventure or discovery.

CLASSIFICATION OF LANDS. The process of determining whether the lands are more valuable or suitable for transfer or use under particular or various public land laws than for retention in federal ownership for management purposes.

COMMUNITY. A group of plants and animals living together in a common area having close interactions.

COMMUNITY PIT. A site from which nonexclusive disposals of mineral materials can be made.

CONDITION. FUNCTIONAL-AT RISK (Riparian. Wetland). Riparian-wetland areas that are in functional condition but an existing soil, water, or vegetation attribute makes them susceptible to degradation.

CONDITION. NON-FUNCTIONAL (Riparian. Wetland). Riparian-wetland areas that clearly are not providing adequate vegetation, landform, or large woody debris to support proper functioning condition. The absence of certain physical attributes, such as a floodplain where one should be, are indicators of non-functioning conditions.

CONDITION. PROPER FUNCTIONING (Riparian. Wetland). Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to: (a) dissipate stream energy associated with high water flow, thereby reducing erosion and improving water quality; (b) filter sediment, capture bedload, and aid floodplain development; (c) improve floodwater retention and groundwater recharge; (d) develop root masses that stabilize streambanks against cuttingaction; (e) develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and, (f) support greater biodiversity. The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation.

GLOSSARY

Defines the technical terms used throughout this plan and the appendices.

ACQUIRED LANDS. Lands in Federal ownership which were obtained by the government through purchase, condemnation, gift, or exchange.

ACRE-FOOT (AC-FT). Volume of water that will cover one acre of land to a depth of one foot; equals 43,560 cubic feet or 325,851 gallons.

ADJUDICATION. A formal court proceeding which results in the determination of the validity and extent of a water right.

AERIAL PHOTOGRAPHY. Photographs taken of the earth's surface from an aircraft. Both color and infra-red aerial photos can be produced which show surface features. Photographs can indicate vegetation changes and water content associated with fractures where caves may be located.

AGGREGATE. Any of several hard, inert materials, such as sand, gravel, slag, or crushed stone, used for mixing with a cementing or bituminous material to form concrete, mortar, or plaster; or used alone, as in railroad ballast or graded fill.

AIR POLLUTION. The general term alluding to the undesirable addition of substances (gases, liquids, or solid particles) to the atmosphere that are foreign to the natural atmosphere or are present in quantities exceeding natural concentrations.

ALKALI LAKES. Shallow plate-like depressions in central portions of basins that drain internally, collect runoff and evaporate rapidly; salt playas.

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLOTMENT MANAGEMENT PLAN (AMP). A livestock grazing activity plan for a specific allotment based on multiple-use resource management objectives. The AMP considers livestock grazing in relation to other uses of the rangelands and in relation to renewable resources (i.e., wa-

tershed, vegetation and wildlife). An AMP includes the seasons of use, number of livestock permitted on the allotment, grazing system, and the rangeland developments needed. AMPs are prepared in consultation, cooperation and coordination with the permittee(s), lessee(s) or other involved affected parties.

ANIMAL UNIT MONTH (AUM). The amount of forage necessary for the sustenance of one cow with a nursing calf or its equivalent for a period of one month.

ANNUAL WATER YIELD. The total streamflow volume that passes a specified point in a watershed during a year. It generally equals total precipitation and irrigation, less evapotranspiration losses and deep seepage losses.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public land where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and provide safety from natural hazards.

AUTHORIZED OFFICER. Any person authorized by the Secretary of the Interior to administer regulations.

AVOIDANCE AREA. An environmentally sensitive area where rights-of-way would be granted only in cases where there is a prevailing need and no practical alternative location exists, and then only with appropriate provisions to protect the sensitive environmental components.

BENEFICIAL USE. The basis, the measure, and the limit of a water right. Agricultural, commercial, industrial, and recreational uses are all considered to be beneficial.

CONDITION. UNKNOWN (Riparian. Wetland). Riparian-wetland areas for which sufficient information is lacking to make any form of determination about functional condition.

CONDITION OF APPROVAL (COA). A requirement appended to a use authorization that must be met in order to be in conformance with the authorization. Conditions of approval may be standard practices that are routinely applied or may be special requirements developed through the NEPA process. Conditions of approval usually are applied to mitigate the impacts of an action. Conditions of approval do not modify any rights granted by a lease (e.g., an oil and gas lease). Also, refer to LEASE, PERMIT, and STIPULATION in the Glossary.

CONDITIONAL WILDFIRE SUPPRESSION. The point in time that the fire exceeds the definable boundaries of the prescribed natural fire parameters, conditional suppression will become full suppression. (Total acres will not be a concern but exceeding the defined boundaries will indicate an escaped fire analysis.)

CONSERVATION (ARCHAEOLOGY). A level of management applied to cultural resources exhibiting uniqueness or relative scarcity of similar cultural properties; research potential that surpasses current state of the art; or singular historic importance or architectural interest.

COORDINATED RESOURCE MANAGEMENT PLAN (CRMP). A plan for management of one or more grazing allotments that involve all the affected resources, e.g., range, wildlife, watershed, minerals, and recreation.

CORRIDOR. A linear strip of land forming a passageway between two points in which transportation and/or utility systems exist or may be located. A designated corridor is the preferred location for existing and future rights-of-way grants that have been identified by law, by secretarial order, through land use planning, or by other management decision.

CRUCIAL HABITAT. Portions of the habitat of a wildlife population that, if destroyed or adversely modified, would result in a reduction of the popu-

lation to a greater extent than destruction of other portions of the habitat.

CRITICAL HABITAT. Any air, land, or water area, including elements thereof, which have been determined (and published in the Federal Register) to be essential to the survival of wild populations of an endangered or threatened species or to be necessary for their recovery to a point at which the measures provided pursuant to the ESA are no longer necessary.

CULTURAL RESOURCE. The fragile and non-renewable remains of human activity, occupation, or endeavor reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human events. These resources consist of physical remains, areas where significant human events occurred even though evidence of the event no longer remains, and the environment immediately surrounding the actual resource and oral history or ethnographic accounts of lifeways and customs.

DESIGNATION. The official identification and naming of a general area or site on public land. Lands may be designated when they are either (1) withdrawn, (2) given special status by act of Congress, or (3) established by an approved land use plan.

DESIGNATED USES. Surface water uses specified by the Water Quality Control Commission for which water quality standards have been established. Designated uses apply whether or not they are being attained.

DESIRED PLANT COMMUNITY (DPC). The plant community which provides the vegetation attributes required for meeting or exceeding RMP vegetation objectives. The DPC must be within an ecological site's capability to produce these attributes through natural succession, management action, or both. A specific description of the vegetation needed to meet the vegetation objectives of a detailed activity plan or implementing action can be described as a desired plant community. Seeding mixtures under DPC would emphasize the use of native species and avoid noxious weeds and exotic species.

DISTRICT. The specific area of public lands administered by a district manager.

DIVERSION. A man-made construction that diverts water from its natural source to be put to beneficial use.

DIVERSITY. The relative degree of abundance of wildlife species, plant species, communities, habitats, or habit features per unit area.

DRASTIC. A method developed by the U.S. Environmental Protection Agency for evaluating the potential for groundwater pollution. The name "DRASTIC" is an acronym for the seven hydrogeologic factors that the method uses to produce the Drastic Index. The Index is a numerical value which helps prioritize areas with respect to groundwater contamination vulnerability. The factors are: Depth to water; Recharge; Aquifer media; Soil media; Topography (Le., slope); Impact of the vadose zone; and, Conductivity (hydraulic) of the aquifer.

ECOLOGICAL SITE INVENTORY (ESI). The effort and documentation needed to establish realistic, achievable, and measurable vegetation management objectives.

ECOSYSTEM. A complex self-sustaining natural system which includes living and nonliving components of the environment and the circulation of matter and energy between organisms and their environment.

ENDANGERED SPECIES (FEDERAL). An animal or plant species whose prospects of survival and reproduction are in immediate jeopardy and in danger of extinction throughout all or a significant portion of its range, as defined by the USFWS under the authority of the Endangered Species Act of 1973, as amended. Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) over utilization for commercial, sporting, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made factors. Also, see "Threatened Species (Federal)" in the Glossary.

ENDANGERED SPECIES (STATE). Any species or subspecies whose prospects of survival or recruitment in New Mexico are in jeopardy. Also, see "Threatened Species (State)" in the Glossary.

ENVIRONMENTAL ASSESSMENT (EA). The procedure for analyzing the impacts of some proposed action on a given environment and the documentation of that analysis. An EA is similar to an environmental impact statement (EIS) but is generally smaller in scope. An EA may be preliminary to an EIS.

ENVIRONMENTAL IMPACT STATEMENT (EIS). The procedure for analyzing the impacts (both beneficial and adverse) of a proposed action on a given environment, and the documentation of that analysis.

EPHEMERAL STREAM. A stream that flows in direct response to surface runoff.

EPHEMERAL. A stream or portion of a stream that flows in direct response to precipitation, lasts for a short period of time and is not influenced by ground water sources. Also pertains to playa lakes which can be intermittently wet.

EXCHANGE. A trading of public lands (surface or subsurface estates) that usually do not have high public value, for lands in other ownerships which do have value for public use, management and enjoyment. The exchange may be for the benefit of other Federal agencies as well as BLM.

EXCLUSION AREAS. Areas where future rights-of-way may be granted only when mandated by law.

EXTENSIVE RECREATION MANAGEMENT AREAS (ERMA). Areas where recreation is unstructured and dispersed and where minimal recreation-related investments are required. ERMA's provide recreation visitors the freedom of choice with minimal regulatory constraint. These areas consist of the remainder of land areas not included in Special Recreation Management Areas within a resource area.

FEDERAL CAVE RESOURCES PROTECTION ACT (FCRPA) OF 1988. The purposes of this act are (1) to secure, protect, and preserve significant caves on federal lands for the perpetual use, enjoyment, and benefit of all people; and (2) to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on federal lands for scientific, education, or recreational purposes.

FEDERAL LAND. Land owned by the United States and administered by the federal government. Federal land includes public lands (see Public Lands in the Glossary).

FEDERAL LAND POLICY AND MANAGEMENT ACT (FLPMA) OF 1976. Public Law 94-579, gives the BLM legal authority to establish public land policy; to establish guidelines for administering such policy; and to provide for the management, protection, development, and enhancement of the public land. Often referred to and pronounced "flipma."

FEDERAL RESERVED WATER RIGHT. A water right which is reserved by the federal government when land is withdrawn from the public domain for a particular purpose, such as national parks, forests, and monuments. The amount of water reserved is only that necessary to fulfill the intended purpose.

FLOODPLAIN. See "One Hundred-Year Floodplain" in the Glossary.

FLOWLINE. The surface pipe through which oil, water, or gas travels from a well to processing equipment or to storage.

FRAGILE SOIL. A soil that is easily damaged by use or disturbance. Examples include soils that are susceptible to compaction or other mechanic damage to their structure, or soils that are highly erodible when disturbed.

FULL WILDFIRE SUPPRESSION. All necessary resources and tactics are utilized to halt fire spread at a minimum acreage with the most cost effect suppression tactics.

GEOGRAPHIC INFORMATION SYSTEM (GIS). Through the use of computer technology, GIS allows the input, storage, analysis, and display of a great volume and variety of physically locatable data (Le., data which is known to exist at some specific place or area on the ground).

GRANT. A gift of public lands either in quantity or in place. Also, the document or the action which conveys land or an interest in land.

GRAZING CAPACITY. The maximum livestock stocking rate possible without inducing damage to vegetation or related resources such as watershed. This incorporates factors such as suitability of the rangeland for grazing as well as the proper use which can be made on all of the plants within the area. Normally expressed in terms of acres per animal unit month (AC/AUM) or sometimes referred to as the total AUMs that are available in any given area, such as an allotment. Areas that are unsuitable for livestock use are not computed in the grazing capacity. Grazing capacity mayor may not be the same as the stocking rate.

GRAZING DISTRICT. Means the specific area within which the public lands are administered under Section 3 of the Taylor Grazing Act. Public lands outside grazing district boundaries are administered under Section 15 of the Taylor Grazing Act.

GROUND WATER. Subsurface water contained in interconnected pores between soil or rock particles in a zone of saturation. Groundwater includes underground lakes and streams in karst areas.

HABITAT. The place where an animal or plant normally lives during its life cycle often characterized by dominant food, cover, water, and space (e.g., the stream habitat, the forest habitat).

HABITAT MANAGEMENT PLAN (HMP). A written and officially approved plan for a specific geographical area of public land which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

HAZARDOUS MATERIAL. Any substance posing a threat to the health or safety of persons or the environment. These include any materials meeting the Environmental Protection Agency's criteria for ignitability, corrosivity, reactivity or toxicity.

INFORMATION (ARCHAEOLOGY). A level of management applied to cultural resources. Most sites fall into this category and would be studied for the information that could be retrieved from them. The process of extracting information often destroys the site. These sites could be lithic scatters, campsites and other types of sites.

INSTREAM FLOW. The surface streamflow that is necessary to maintain resources such as waterquality, fisheries, recreation, and riparian habitat. Usually expressed in terms of minimum flow requirements.

INTERMITTENT STREAM. A stream that does not flow year round but has some association with ground water for surface or subsurface flows.

KARST. A landform where the topography has been formed chiefly by the dissolving of rock. In some cases, the dissolving of rock may be extensive enough to form passages through which an individual could pass. Surface expressions include sinking streams, swalletts, springs and resurgences, and the presence of sinkholes and caves. Surface streams are few, with most of the drainage being underground. These features are important for ground-water recharge of karst systems.

LEASE. An authorization to possess and use public land for a fixed period of time (usually longterm). Also, any contract, profit-share arrangement, joint venture, or other agreement issued or approved by the United States Government under a mineral leasing law that authorizes exploration for, extraction of, or removal of oil and gas resources.

LEASE NOTICE. An attachment to an oil and gas lease that transmits information at the time of lease issuance to assist a lessee in submitting acceptable plans of operation, or to assist in administration of leases. A Lease Notice is used to disclose a situation or condition known to exist

that could affect lease operations. Lease Notices are not a basis for denial of lease operations.

LEGAL ACCESS. In the context of access to public lands, especially public land tracts that may be adjacent to or surrounded by land of other ownerships, legal access exists when a person can reach a given public land tract without trespassing, such as from a public road or highway, or from another tract of public land. (See "Physical Access.")

LENTIC. Pertaining to static, calm, or slow moving water or aquatic habitats, such as a marsh.

LEK. A specific area (also termed display, gobbling, booming or strutting grounds) where two or more prairie chicken cocks congregate, typically year after year, for courtship displays in early spring, and vary in size from one-eighth acre to several acres.

LOCATABLE MINERALS. Minerals subject to disposal and development through the Mining Law of 1872 (as amended). Includes all "valuable mineral deposits" including metallic and non-metallic minerals such as gold, lead, barite, fluorspar or high calcium limestone. It also includes uncommon varieties of sand, stone, gravel, cinders, pumice, pumicite and clay. Also included are all valuable minerals that are not excluded under the leasable and salable minerals.

LOTIC. Pertaining to fast-moving water, such as rivers and streams.

MALPAIS. A Spanish word meaning rough country underlain by dark basaltic lava.

MANAGEMENT FRAMEWORK PLAN (MFP). A planning decision document now replaced by AMPs that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection.

MODERN URBAN (U). Areas with recreation opportunities to experience affiliation with individuals and groups are prevalent as in the convenience of sites and opportunities. Experienc-

ing the natural environmental, and the use of outdoor skills are largely unimportant. One of the six classes of the Recreation Opportunity Spectrum (ROS).

MOIST SOILS MANAGEMENT. Water level manipulation (drawdown) used as a wetland management tool for pastures to optimize food production for waterfowl.

MINERAL MATERIALS. Minerals such as common varieties of sand, stone, gravel, pumice, pumicite and clay which are not obtainable under the mining or leasing laws but which can be obtained under the Materials Act of 1947, as amended. Also known as saleable minerals.

MULTIPLE USE MANAGEMENT. Management of public lands and their various resource values so they are used in the combination best meeting the present and future needs of the American people. Such a concept allows for the most judicious use of some or all of the resources over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions. Relative resource values are considered, not necessarily the combination of uses that would give the greatest potential economic return or the greatest unit output.

NATIONAL REGISTER OF HISTORIC PLACES. A list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture.

NATIONAL TRAILS SYSTEM. The National Trails System is composed of four types of trails: (1) national recreation trails; (2) national scenic trails; (3) national historic trails; and (4) connecting or side trails. National recreation trails provide for numerous outdoor recreation activities in a variety of urban, rural, and remote areas. They may be designated by the Secretary of the Interior or by the Secretary of Agriculture where lands administered by that agency are involved.

NONPOINT SOURCE POLLUTION (NPS). The alteration of waters by activities not regulated as point sources, which degrade the quality or ad-

versely affect the biological community inhabiting the waters.

NO SURFACE OCCUPANCY (NSO). A condition of surface use attached to a lease or other authorization applied to minerals exploration and development which prohibits occupancy of only the land surface or to protect other identified resource values.

NOXIOUS WEED. A plant that causes disease or has other adverse effects on the human environment and is, therefore, detrimental to the agriculture and commerce of the United States and public health. Generally, noxious weeds possess one or more of the characteristics of being aggressive and difficult to manage, parasitic, a carrier or host of harmful insects or disease, and being either native, new to, or not common in, the United States. In most cases, however noxious weeds are nonnative species. Noxious weeds are designated and regulated by various state and federal laws.

OFF-HIGHWAY VEHICLE (OHV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

Open: Vehicle travel is permitted in the area (both on and off roads) if the vehicle is operated responsibly in a manner not causing, or unlikely to cause significant, undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural, or vegetative resources of other authorized uses of the public lands.

Limited: Designated areas and trails where the use of an OHV is subject to restrictions, such as limiting the number on types of vehicles allowed, or dates and times of use (seasonal restrictions); limiting use to designated roads and trails. Combinations of restrictions are possible, such as limiting use to certain types of vehicles during certain times of the year.

Closed: Designated areas, roads, and trails where the use of an OHV is permanently or temporarily prohibited. Emergency use of vehicles is allowed.

ONE HUNDRED-YEAR FLOOD. The Flood that will be equaled or exceeded an average of once every one hundred years; i.e. the flood that has a one percent chance of being equaled or exceeded in any given year.

ONE HUNDRED-YEAR FLOODPLAIN. The area adjacent to a stream or body of water that would be inundated at the peak of the one hundred year flood. The floodplain delineated on Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBMs) published by the Federal Emergency Management Agency will be used for management purposes. When a FIRM or FHBM map is not available for the area of interest, the best available information will be used.

PAYMENT IN LIEU OF TAXES (PILT). Payments to local or state governments based on ownership of federal land and not directly dependent on production of outputs or receipt sharing.

PERENNIAL STREAM. Surface water normally flows throughout the year except during infrequent years of drought.

PERMIT (GRAZING). A document authorizing use of the public lands within grazing districts under Section 3 of the Taylor Grazing Act for the purpose of grazing livestock.

PERMIT (LAND). A short-term (generally under 3 years), revocable authorization to use public lands for specific purposes.

PETROGLYPH. A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

PHREATOPHYTE. A type of plant common to arid regions which has an extensive root system to draw water directly from the water table.

PHYSICAL ACCESS. In the context of access to public lands, especially public land tracts that may be adjacent to or surrounded by land of other ownerships, physical access exists when a person can physically reach a given public land tract. The existence of physical access does not always mean that legal access exists. In some cases, taking advantage of physical access may involve trespass. (See "Legal Access.")

PIPELINE. A system of connected lengths of steel or plastic pipe, laid either in the earth or on the surface, that is used for transporting petroleum, petroleum products, chemicals, natural gas, or other fluids.

PLAYA. A shallow, nearly level, often saline, dry lake bed. Playas vary considerably in materials, salinity, and hydrologic regime. In general, playas: (1) collect surface runoff in closed basins; (2) are poorly vegetated; (3) are ephemeral flooded; and (4) have a thin surface of non-gravelly, fine-textured sediment.

POINT SOURCE POLLUTION. Pollution discharged from any discernible, confined, and discrete conveyance into a water body; e.g., effluent from a pipe. Point source pollution does not include return flow from irrigated agricultural land.

PRECIPITATION. Any or all forms of water particles, liquid or solid, that fall from the atmosphere and reach the ground.

PRESCRIBED FIRE OR BURN. The skillful application of fire to natural fuels under conditions of weather, fuel moisture, soil moisture, etc., that would allow confinement of the fire to a predetermined area and at the same time produce the intensity of heat and rate of spread required to accomplish certain planned benefits to one or more objectives of wildlife management, livestock management, hazard reduction, etc. Its objective is to employ fire scientifically to realize maximum benefits at minimum damage and acceptable cost.

PRESCRIPTION. A written statement defining objectives to be attained as well as temperature, humidity, wind direction and wind speed, fuel moisture content, and soil moisture under which a fire will be allowed to burn, generally expressed as acceptable ranges of the various indices, and the limit of the geographic area to be covered.

PRIMITIVE (P). Areas with recreation opportunities for isolation from the sights and sounds of man, to feel a part of the natural environment, to have a high degree of challenge and risk, and to use outdoor skills. One of the six classes of the Recreation Opportunity Spectrum (ROS).

GLOSSARY

PUBLIC LANDS. Any land and interest in land owned by the United States within the several states and administered by the Secretary of the Interior through the Bureau of the Land Management, without regard to how the United States acquired ownership, except (1) lands located on the Outer Continental Shelf; and (2) lands held for the benefit of Indians, Aleuts, and Eskimos.

PUBLIC VALUES AND INTERPRETATION (ARCHAEOLOGY). A level of management of cultural sites which contribute to the belief systems and folkways of a cultural group such as locations having religious significance. Public interpretive sites would have qualities that would lend themselves to being utilized as recreation, education, and interpretive areas.

QUARRYING (MINING). The extraction of building stone or other valuable nonmetallic constituent from a surface mine, or quarry.

RANGELAND. Land used for grazing by livestock and big game animals on which the vegetation is dominated by grasses, grass-like plants, forbs, or shrubs.

RANGE IMPROVEMENT. An authorized activity or program on or relating to rangelands which is designed to improve production of forage; range vegetative composition; control patterns of use; provide water; stabilize soil and water conditions; and provide habitat for livestock, wild horses or burros, and wildlife. The term includes, but is not limited to structures, treatment projects, and use of mechanical means to accomplish the desired results.

RAPTOR. A bird of prey, such as an eagle, hawk, or owl.

RECLAMATION. The reconstruction of disturbance by returning the land to a condition approximate or equal to that which existed prior to disturbance, or to a stable and productive condition compatible with the land use plan. The immediate goal of reclamation is to stabilize disturbed areas and protect both disturbed and adjacent undisturbed areas from unnecessary degradation.

RECREATION AND PUBLIC PURPOSES ACT (R&PP). The Act of June 14, 1926, as amended (43 U.S.C. 869, 869-4). Allows the disposal of public lands to any state, local, federal, or political instrumentality or nonprofit organization or any recreational or public purpose, at the discretion of the authorized officer.

RECREATION OPPORTUNITY SPECTRUM (BQS). A continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities. Six classes are included: primitive (P), semiprimitive nonmotorized (SPNM), semi-primitive motorized (SPM), roaded natural (RN), rural (R), and modern urban (U). Refer to the individual definitions in this glossary.

RESERVATION. A withdrawal of a permanent nature, dedicated to a specific public purpose.

RESOURCE AREA (RA). The smallest administrative subdivision of a BLM district. A resource area is administered by an area manager.

RESOURCE MANAGEMENT PLAN (RMP). A written land use plan that outlines BLM's decisions and strategies for management of the resources in a particular area. The RMP has been used by the BLM since 1980.

RESTRICTED AREAS. Areas where mitigation such as seasonal restrictions is required to protect resource values.

RIGHT-OF-WAY (ROW). The legal right for use, occupancy, or access across land or water areas for a specified purpose or purposes. Also, the lands covered by such a right. Examples are roads, powerlines, pipelines, water wells, and communities sites. It does not grant an estate of any kind.

RIPARIAN. Situated on or pertaining to the bank of a river, stream, or other body of water. Normally used to refer to the plants of all types that grow rooted in the water table or streams, ponds, springs, etc.

RIPARIAN AREAS. Riparian areas are a form of wetland transition between permanently satu-

GLOSSARY

rated wetlands and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil.

ROADED NATURAL (RN). Areas with about equal recreation opportunities for affiliation with other user groups and for isolation from sights and sounds of humans. Involves the opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important except in specific challenging activities. The practice of outdoor skills may be important. Opportunities for both motorized and non motorized recreation are present. One of the six classes of the Recreation Opportunity Spectrum (ROS).

RURAL (R). Areas with recreation opportunities to experience affiliation with individuals and groups are prevalent as is the convenience, of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wildland challenges, risk taking, and testing of outdoor skills are unimportant, except in activities involving challenge and risk. One of the six classes of the Recreation Opportunity Spectrum (ROS).

LEASABLE MINERALS. See Mineral Materials.

SCOPING PROCESS. An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. Scoping may involve public meetings, field interviews with representatives of agencies and interest groups, discussions with resource specialists and managers, written comments in response to news release, direct mailings and articles about the proposed action, and scoping meetings.

SEDIMENT YIELD. A quantitative measure of the total sediment outflow from a watershed over a

given period of time at a specified point in the channel. Sediment yield is the difference between the total erosion from slopes, channels, and mass wasting, and the amount of sediment deposited before reaching the specified point in the channel.

SEEPS. Is where ground water percolates to the surface and forms a saturated area.

SEMI-PRIMITIVE MOTORIZED (SPM). Areas with some recreation opportunity for isolation from the sights and sounds of humans, but not as important as for primitive opportunities. Involves the opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Provides an explicit opportunity to use motorized equipment while in the area. One of the six classes of the Recreation Opportunity Spectrum (ROS).

SEMI-PRIMITIVE NONMOTORIZED (SPNM). Areas with some recreation opportunity for isolation from the sights and sounds of humans, but not as important as for primitive opportunities. Involves the opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. One of the six classes of the Recreation Opportunity Spectrum (ROS).

SIGNIFICANT CAVE. A cave located on federal lands that possesses one or more of the following features, characteristics, or values (1) Biota; (2) Cultural; (3) Geologic/ Mineralogic/Paleontologic; (4) Hydrologic; (5) Recreational; (6) Educational or Scientific.

SIGNIFICANT KARST. An area in which sinkholes or other features, such as lineaments, provide points of recharge to an aquifer that is the source of water for human, livestock, or wildlife use, or which provides a primary recharge zone for cave-related hydrologic systems.

SINKHOLE. A closed depression formed when the ground surface collapses above voids created by the solution of carbonate or evaporite rocks. Water levels typically fluctuate rapidly in sinkholes because of their close connection to groundwater.

SLOPE. The inclination of the land surface to the horizontal. When expressed as a percent, slope equals the change in elevation divided by the horizontal distance, with the result multiplied by 100 percent. Thus, a slope of 20 percent is a change in elevation of 20 feet for every 100 feet horizontally.

SOLID LEASABLE MINERALS. The chlorides, sulfates, carbonates, borates, silicates or nitrates of potassium or sodium and related products; sulphur in the States of Louisiana and New Mexico and on all acquired lands; phosphate, including associated and related minerals; asphalt in certain lands in Oklahoma; and gilsonite (including all vein-type solid hydrocarbons).

SPECIAL EMPHASIS AREAS. An area containing one or a combination of unique resources or values that receive more intensive management (e.g., ACECs, WSAs, and SRMAs.)

SPECIAL HABITAT FEATURE. A specific component of a habitat site requiring individual consideration, including geological anomalies (cliffs), aquatic situations (seeps), or manmade structures (windmill). A feature may be present in the habitat site because of animal use (booming grounds). Special habitat features may affect wildlife positively or negatively.

SPECIAL RECREATION MANAGEMENT AREA (SRMA). Areas requiring explicit recreation management to achieve BLM's recreation objectives and to provide specific recreation opportunities. SRMAs are listed in this plan which also define SRMA management objectives. BLM's recreation investments are concentrated in these areas.

SPECIAL STATUS SPECIES. Wildlife and plant species either federally listed or proposed for listing as endangered or threatened, state-listed species, or BLM-determined priority species (sensitive species).

SPRING. Where water is discharged from a fixed point and the flow usually forms a small channel.

STATE APPROPRIATIVE WATER RIGHT. A water right licensed by the New Mexico State Engineer once proof of beneficial use is established.

STATE HISTORIC PRESERVATION OFFICER (SHPO). A position within state governments responsible for coordinating state participation in the implementation of the National Historic Preservation Act. This officer serves as an assistant and consultant when identifying cultural properties, assessing effects to them, and considering alternatives to avoid or reduce those effects.

STIPULATION. A requirement, usually dealing with protection of the environment, that is made a part of a lease, grant, or other authorizing document. In the case of oil and gas leases, a provision that modifies standard lease rights and is attached to and made a part of the lease. Also, refer to "CONDITION OF APPROVAL" in the Glossary. The following represent the major stipulations on BLM lands:

No Surface Occupancy Stipulation (NSO): A stipulation in which use or occupancy of the land surface for fluid mineral exploration or development is prohibited to protect identified resource values.

Timing limitation Stipulation: A stipulation which prohibits surface use during specified time periods to protect identified resource values. This stipulation does not apply to the operation and maintenance of production facilities unless the findings of analysis demonstrate the continued need for such mitigation and that less stringent, project specific mitigation measures would be insufficient.

Controlled Surface Use Stipulation (CSU): A stipulation in which use and occupancy is allowed (unless restricted by another stipulation), but identified resources values require special operational constraints that may modify the lease rights.

STRUTTING GROUND. Synonymous with Lek.

SUITABILITY. The adaptability of an area to grazing by livestock or wildlife.

SUITABLE RANGE. Rangeland that is accessible to livestock, which can be grazed on a sustained-yield basis without damaging the resource.

SURFACE DISTURBANCE. Any action that would cause soil mixing or result in alteration or

removal of soil or vegetation and expose the mineral soil to erosive processes. Used in the literal context of actual, physical disturbance and movement or removal of the land surface and vegetation.

SURFACE WATER. All water located at the surface of the land, such as streams, rivers, and lakes.

THREATENED SPECIES (Federal). Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) over utilization for commercial, sporting, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; or (5) other natural or human-made factors. Also, see "Endangered Species (Federal)" in the Glossary.

THREATENED SPECIES (State). Any species or subspecies that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in New Mexico. Also, see "Endangered Species (State)" in the Glossary.

TURBIDITY. A condition in water caused by the presence of suspended matter which results in the scattering and absorption of light. Generally, a measure of fine suspended matter in water.

VALUE. As used in the RMP/EIS, a value refers to a natural resource or characteristic of a natural resource that is not usually a commodity or is difficult to quantify in terms of a unit of measurement. Examples of values in this context are listed in FLPMA and include scientific, scenic, air and atmospheric, historical, archeological and biological resources.

VEGETATION RESOURCE CONDITION OBJECTIVES (VRCO). In general terms the kinds, types, amounts or appearance of vegetation that will provide the goods, values, and services needed on a geographic area.

VEGETATION TREATMENTS. Methods used to manage the growth and spread of vegetation. A vegetative management practice can either be a direct management of the vegetation itself, for example prescribed fire or indirect management like a change in the number of livestock utilizing the vegetation, or a change in the time frames when livestock are utilizing the vegetation.

VIABILITY INDEX. A mathematical model used to predict the suitability of a pasture for pronghorn populations using variables such as pasture size, ruggedness, number of fall forb species and anticipated fall sheep stocking rate. See Appendix 12 of the Draft Roswell RMP/EIS.

VISUAL RESOURCES MANAGEMENT (VRM). The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

VISUAL RESOURCE MANAGEMENT (VRM) CLASSES. VRM Classes are based on relative visual ratings of inventoried lands. Each class describes the different degree of modification allowed to the basic elements of the landscape. The following are the minimum management objective for each class.

Class I: Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to Visual Areas of Critical Environmental Concern, wilderness areas, wild and scenic rivers, and other similar situations.

Class II: Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the landscape. A contrast may be seen but should not attract attention.

Class III: Contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

Class IV: 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.

Rehabilitation Area: Change is needed or change may add acceptable visual variety to an area. This class applies to areas where the naturalistic character has been disturbed to a point where rehabilitation is needed to bring it back into character with the surrounding landscape. This class would apply to areas identified in the scenic evaluation where the quality class has been reduced because of unacceptable cultural modification. The contrast is inharmonious with the characteristic landscape. It may also be applied to areas that have the potential for enhancement; Le., add acceptable visual variety to an area or site. It should be considered an interim or short-term classification until one of the other VRM class objectives can be reached through rehabilitation or enhancement. The desired visual resource management class should be identified.

WATER QUALITY STANDARD. Regulations which specify designated uses for surface waters of the state, and water quality criteria to protect those uses. Standards are specified by the Water Quality Control Commission, in accordance with Section 303 of the Clean Water Act.

WETLANDS. Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and which, under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, shallows, swamps, lake shores, bogs, muskegs, wet meadows, estuaries, and riparian areas.

WILDERNESS. The definition contained in Section 2(c) of the Wilderness Act of 1964 is as follows: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain." Wilderness is an area of

undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

WILDERNESS AREA (WA). An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS STUDY AREA (WSA). A roadless area which has been found to have wilderness characteristics.

WILDERNESS CHARACTERISTICS. Those characteristics of wilderness as described in Section 2(c) of the Wilderness Act. These include size, naturalness, solitude, primitive and unconfined type of recreation, and supplemental values.

WILDLIFE. Includes all species of animals, birds, mollusks, crustaceans, amphibians, reptiles, and their progeny or eggs which, whether raised in captivity or not, are normally found in a wild state. Feral horses and burrows are excluded.

WITHDRAWAL. Removal or withholding of public lands, by statute or secretarial order, from operation of some or all of the public land laws. A mineral withdrawal is the closing of an area to mineral location and development activities. A mineral withdrawal includes public lands potentially valuable for solid leasable minerals, precluding the disposal of the lands except with a mineral reservation clause unless the lands are found not to contain a valuable deposit of minerals.

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BUREAU OF LAND MANAGEMENT**

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