			Hobbs		
	UNITED STATES EPARTMENT OF THE INTERI REAU OF LAND MANAGEM	IOR JUN	6 2014 5. Lease St		137
SUNDRY Do not use this	NOTICES AND REPORTS C form for proposals to drill Use Form 3160-3 (APD) fo	ON WELLS	EIVED	12939 n, Allottee or Tribe Name	
SUBN	IIT IN TRIPLICATE – Other instruction	ons on page 2.	7. If Unit c	of CA/Agreement, Name and	i/or No.
Type of Well				/	19
Oil Well Gas	Well Other			me and No. Federal #4H	
Name of Operator venture Exploration Partners II	LLC.		9. API We 30-025-4	II No. 1804	
Address		ne No. (include area co	the second se	nd Pool or Exploratory Area	1
W. Texas Ave. Suite 1000 and, TX 79701	432-684	4-8006	[28432] G	Frama Ridge; Bone Spring	g W
Location of Well (Footage, Sec., 7 : 700' FSL & 890' FEL : 330' FNL & 660' FEL			11. County Lea	or Parish, State	
12. CHE	ECK THE APPROPRIATE BOX(ES) TO	O INDICATE NATUR	E OF NOTICE, REPOR	T OR OTHER DATA	
TYPE OF SUBMISSION		TY	PE OF ACTION		
Notice of Intent	Acidize	Deepen	Production (Start	Resume) Water SI	nut-Off
Nonce of Intent	Alter Casing	Fracture Treat	Reclamation	Well Inte	egrity
Subsequent Report	Casing Repair	New Construction	Recomplete	Other _	
Final Abandonment Notice	Change Plans	Plug and Abandon Plug Back	Water Disposal	ndon	
Describe Proposed or Completed	Operation: Clearly state all pertinent deta	aile including actimate	d starting data of any pro	paged work and approving	te duration thereof If
extending North then branching	I new drill wells in sections 11 & 12. g West and East to presently staked I lease road. Construction will begin	locations. Adventure	Exploration Partners	II LLC is currently working	g on building the
					1.5
	true and correct. Name (Printed/Typed)				7.23
ton Waters	. 0	Title Geologia	t		
MAR	4th				
Signature 1997	DO	Date 05/21/20	14		and the second
	THIS SPACE FOR F	EDERAL OR ST	ATE OFFICE USI		Sec. Sake
roved by		F	IELD MANAGER	MAY 2	0 2014
	e Caffey	Title		Date	0 0011
	d. Approval of this notice does not warrant title to those rights in the subject lease whit thereon.		SBAD FIELD OFFIC	)E	Caller I.
	U.S.C. Section 1212, make it a crime for a esentations as to any matter within its juris		nd willfully to make to any	v department or agency of the	United States any false,
tructions on page 2)					/
on record	0124 6116/14	NMOCD-	DIST		. MAR 11







# NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.:	<b>2a. Lead Agency:</b> US Bureau of Land	2b. Other Agency(ies):	3. Lead Agency Report No.:		
128562	Management Carlsbad Field Office				
4. Title of Report:				5. Type of Report	
A Class III Archaeolo Pad, Frac Pond, Turr	HWell	Negative			
			×	Positive	
Author(s)					
Hill, Rebecca L., Jos	shua Broxson				
6. Investigation Typ	e				
Research Design	Archaeological Survey/Inventor	Architectural Survey/Inventory	- Test Ex	cavation Excavation	
Collections/Non-Fi	eld Study Compliance Decision	Based on Previous Inventory	verview/Lit	Review Monitoring	
Ethnographic Stud	y Site/Property Specific Visit	Historic Structures Report	Other		

#### 7. Description of Undertaking (what does the project entail?):

A pedestrian cultural resource survey was conducted on 29 August 2013 for Adventure Exploration, LLC's Horned Frog 12 Federal #2H Well Pad, Frac Pond, Turn Around, and Access Road. The proposed project area lies entirely on federal lands managed by the Bureau of Land Management/Carlsbad Field Office (BLM/CFO) in Section 12 of T22S R33E in Lea County, NM. Survey for the well pad, frac pond, and turn around was conducted using 15 m transects across a block measuring 445 ft. x 600 ft. and a block measuring 640 ft. x 680 ft. A portion of the access road measuring 575 ft. fell within the block surveys. The remaining 832 ft. of access road were surveyed using 15 m parallel transects, one on both sides of the staked centerline. The survey measures 18.03 acres. The Area of Potential Effect measures 285 ft. x 325 ft., 400 ft. x 400 ft., 80 ft. x 400 ft., and 1,407 ft. x 30 ft. (326,835 sq. ft.) or 7.50 acres. No archaeological sites were recorded or updated and no isolated occurrences were encountered.

			] Continuation
to: 29-Aug-2013	9. Report Date:	30-Aug-2013	
n Svcs of NM			1.1
:			1
):			
	:	n Svcs of NM	n Svcs of NM

14. Client/C	Customer Project No.:		
Address:	500 W. Texas Ave., Suite 1000, Midland, TX 79701	Phone:	432-684-8006
Contact:	Keaton Waters		
Adventure E	Exploration, LLC		
13. Client/C	ustomer (project proponent):		

# 15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)		Δ	cres Surveyed	Acres in APE
US Bureau of Land Management Carlsbad Field Office	19.1		18.03	7.50
	1201 1	TOTALS	18.03	7.50

### 16. Records Search(es):

Date(s) of Other Agency File Re	view: 14 Aug 2013 Name of Reviewer(s): J. Broxson	Agency: BLWCFO
17. Survey Data:		
a. Source Graphics [ ] NA	AD 27 [ ] NAD 83 Note: NAD 83 is t	he NMCRIS standard.
USGS 7.5' (1:24,000) topo	map   Other topo map, Scale:	
GPS Unit Accuracy	1.0m 1-10m 10-100m >100m	Aerial Photo(s)
Other Source Graphic(s):		Laura
b. USGS 7.5' Topographic Ma	n Nama	USGS Quad Code
al seese lie leheg. apine ine	p Name	0303 Quad Code
Grama Ridge, NM	p Name	32103-D5
Grama Ridge, NM	p Name	
Grama Ridge, NM	p Name	
Grama Ridge, NM c. County(ies): LEA		
Grama Ridge, NM c. County(ies): LEA d. Nearest City or Town: Jal,		
Grama Ridge, NM c. County(ies): LEA d. Nearest City or Town: Jal,		
Grama Ridge, NM c. County(ies): LEA d. Nearest City or Town: Jal,		
Grama Ridge, NM c. County(ies): LEA d. Nearest City or Town: Jal, e. Legal Description:	NM	
Grama Ridge, NM c. County(ies): LEA d. Nearest City or Town: Jal, e. Legal Description: Township (N/S)	NM Range (E/W) Section 33E 12	

I

20.a. Percent Ground Visibility:       80% - 85%       b. Condition of Survey Area (grazed, bladed, u         The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southwe the project area.       21. CULTURAL RESOURCE FINDINGS         21. CULTURAL RESOURCE FINDINGS       Yes, see next report section         No cultural resources were recorded or updated during this survey. It is uncertain why aboriginal people         22. Attachments (check all appropriate boxes):         [ x ] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)         [ x ] Copy of NMCRIS Map Check (required)         [ ] LA Site Forms - new sites (with sketch map & topographic map) if applicable         [ ] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum         [ ] Historic Cultural Property Inventory Forms, if applicable	International In	] Continuation
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southwe the project area.         21. CULTURAL RESOURCE FINDINGS      Yes, see next report section         No cultural resources were recorded or updated during this survey. It is uncertain why aboriginal people         22. Attachments (check all appropriate boxes):         [ x ] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)         [ x ] Copy of NMCRIS Map Check (required)         [ ] LA Site Forms - new sites (with sketch map & topographic map) if applicable         [ ] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum	Indistributivest lies to	uted, etc.): to the southeast of ] Continuation , discuss why: t inhabit this area.
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southwe the project area.         21. CULTURAL RESOURCE FINDINGS       Yes, see next report section         No cultural resources were recorded or updated during this survey. It is uncertain why aboriginal people         22. Attachments (check all appropriate boxes):         [ × ] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)         [ × ] Copy of NMCRIS Map Check (required)	Indistribu vest lies to I No les did no	<b>Jted, etc.):</b> the southeast of <b>Continuation</b> <b>, discuss why:</b> t inhabit this area.
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southwere project area.         21. CULTURAL RESOURCE FINDINGS       Yes, see next report section         No cultural resources were recorded or updated during this survey. It is uncertain why aboriginal people         22. Attachments (check all appropriate boxes):         [ x ] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)	Indistribu vest lies to I No les did no	<b>Jted, etc.):</b> the southeast of <b>Continuation</b> <b>, discuss why:</b> t inhabit this area.
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The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southweight the project area.  21. CULTURAL RESOURCE FINDINGS  Yes, see next report section No cultural resources were recorded or updated during this survey. It is uncertain why aboriginal people	Indistribu vest lies to [ No les did no	<b>Jted, etc.):</b> the southeast of <b>Continuation</b> <b>, discuss why:</b> t inhabit this area.
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southweight the project area.	Indistribu vest lies to [ No les did no	<b>Jted, etc.):</b> the southeast of <b>Continuation</b> <b>, discuss why:</b> t inhabit this area.
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southweight the project area.	undistribu vest lies to [ V No	uted, etc.): the southeast of ] Continuation , discuss why:
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southweight the project area.	undistribu vest lies to [ V No	uted, etc.): the southeast of ] Continuation , discuss why:
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southw the project area.	undistribu vest lies to	uted, etc.): the southeast of ] Continuation
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southw	undistribu	uted, etc.): the southeast of
The project area lies to the west of an abandoned well pad. A buried pipeline running northeast/southw	undistribu	uted, etc.):
20.a. Percent Ground Visibility: 80% - 85% b. Condition of Survey Area (grazed, bladed, u	1	BANK TO THE REAL PROPERTY OF
	[	] Continuation
vegetative community consists of shinnery oak, mesquite, broom snakeweed, prickly pear, pencil cholla yucca, and buckwheat. The project are is situated in the San Simon Swale 3 miles south of Grama Ridg Antelope Ridge. The Pecos River is approximately 40 miles to the west. The project elevation is 3,530 f	a, winterfa ge and 5 r	t, soapweed miles northeast of
According to the Natural Resources Conservation Service online database, the project area soils consi fine sands. The loamy sands of the Pyote-Maljamar soil support a grassland community. Usually, black bluestems dominate the landscape. Shrubs such as shinnery oak and mesquite are also common to the	grama, d	ropseeds, and
19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):		
	I	] Continuation
이 집에 집에 있는 것이 집에 집에 있는 것이 같은 것을 많은 생각한 것이 없다.		
There are no previously recorded archaeological sites within 1 mile of the project area.		
Additional Narrative:		
Survey Person Hours: 4.00 Recording Person Hours: 0.00 Total Hour	rs: 4.00	
Survey Interval (m): 15 Crew Size: 2 Fieldwork Dates: from: 29-Aug-2013	to: 29-Ai	ug-2013
other method (describe):		
Coverage Method: vystematic pedestrian coverage		
Scope: Innon-selective (all sites/properties recorded) elective/thematic (selected sites/properties)	rties reco	rded)
NMCRIS No.: 128562         Configuration:         ✓ block survey units         ✓ other survey units (specify):		

[ ] List and Description of Collections, if applicable

# 23. Other Attachments:

[ ] Photographs and Log

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.
Principal Investigator/Qualified Supervisor: Printed Name: Rebecca L. Hill

25. Reviewing Agency	26. SHPO
Reviewer's Name/Date:	Reviewer's Name/Date:
Accepted [ ] Rejected [ ]	HPD Log #: Date sent to ARMS:

SURVEY RESULTS:

Archaeological Sites discovered and registered: 0

Archaeological Sites discovered and NOT registered: 0

Previously recorded archaeological sites revisited (site update form required): 0

Previously recorded archaeological sites not relocated (site update form required): 0

TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0

Total isolates recorded: 0

HCPI properties discovered and registered: 0

HCPI properties discovered and NOT registered: 0

Previously recorded HCPI properties revisited: 0

Previously recorded HCPI properties not relocated: 0

TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 0

MANAGEMENT SUMMARY:

No cultural materials were recorded or updated during the survey. Therefore, the project is recommended for approval as staked. If any cultural materials are encountered during construction, work should be halted and archaeologists with BLM/CFO should be notified immediately.

] Continuation

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Non-selective isolate recording?

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

Sites/Properties Discovered:

LA/HCPI No.

Field/Agency No.

Eligible? (Y/N/U, applicable criteria)

Previously recorded revisited sites/HCPI properties:

LA/HCPI No. Field/Agency No.

Eligible? (Y/N/U, applicable criteria)

MONITORI	NG LA NUMBER LOG (site form required)		
Sites Disco	overed (site form required):	Previously recorded sites (site upo	date form required):
LA No.	Field/Agency No.	LA No. Field/Agency No.	
Areas outs	ide known nearby site boundaries monitored?	[ ] Yes	[ ] No, Explain why:

# TESTING & EXCAVATION LA NUMBER LOG (site form required)

Tested LA number(s)

Excavated LA number(s)



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# 1 @ 2014

DISTRICT I 1625 N. French Dr., Hobbs, NM BB2 Phone (676) 593-6161 Fax: (676) 598-0 DISTRICT II Bil S. First St., Artesia, NM ( Phone (575) 746-1253 Fax: (575) 748-9 DISTRICT III 1000 Rio Brazos Rd., Aztec, NJ Phone (505) 334-6178 Fax: (505) 334-6	88210 REC	and the second se	Energy, Min CON: 122	SERV	Natural		Departme IVISI Dr.	Su	Revised Augu	
DISTRICT IV 1220 S. St. Francis Dr., Santa Fe, 1 Phone (505) 476-3460 Fax: (505) 476-3		WELL LO	CATION	AND	ACREA	GE DE	DICATIO	N PLAT	AMENDED	REPORT
API Number			Pool Code					Pool Name		
Property Code		1	HORM		erty Name	2 FEDE	RAI		Well Nu 2	
OGRID No. Operator Name Elevation ADVENTURE EXPLORATION LLC 3530'							ion			
					ce Loca					
UL or lot No. Section	Township	Range	Lot Idn	Feet fro	om the	North/So	uth line	Feet from the	East/West line	County
F 12	22 S	33 E		2	2310	N	ORTH	1980	WEST	LEA
			Hole Loc							
UL or lot No. Section F 1	Township 22 S	Range 33 E	Lot ldn	Feet fro	2310	North/So	DRTH	Feet from the 1980	East/West line WEST	LEA
Dedicated Acres Joint of	or Infill Co	onsolidation (	Code Or	der No.						
HOLE L	D BOTTOM OCATION 32"25'18.04" 03"31'41.75" 789756.7 518071.4	NON-STAN	DARD UN N: 520369.5 E: 787759.7 (NAD-83) LOT 4 N: 517721.8 E: 787701.7 (NAD-83) N: 515082.5 E: 787800.3 (NAD-83)		N: 52 E: 79	0382.8 0399.8 0-83)	ED BY T N: 520399.6 E: 793039.6 (NAD-83) LOT 1 	OPERATO I hereby ce contained here iche best of my this organization land including location or has this location pro- owner of such or to a volunta computsory pool the division. Signature Printed Nam Email Address SURVEY( 5) I hereby certify on this plat w	DR CERTIFICAT y that the well locati as plotted from field	vation lete to is and that it in the tole well at with an interest, or a entered by Date Date
SURFACE Lat - N 3 Long - W 10 NMSPCE- N (NAD-1	2°24'25.75" 3°31'41.71" 789799.6 512787.3		N: 509803.9 E: 787854.3 (NAD-83)		E: 7	509821.5 90480.3 AD-83)	N: 509834 E: 793111 NI: 509834 E: 793121	Supervison an correct to the Date Suffer Signature of Professioner Certificate	made by me or made by me or nd that the same is the best of my belie 1005 201 201 201 201 201 201 201 201	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

BASIN SURVEYS









# BLM LEASE NUMBER: NMNM 112939 COMPANY NAME: Adventure Exploration Partners II LLC. ASSOCIATED WELL NAME: Bevo 11 Federal 4H

#### FRAC POND CONDITIONS OF APPROVAL

A copy of the application (APD, Grant, or Sundry Notice) and attachments, including stipulations, survey plat and diagram, will be on location during construction. BLM personnel may request to see a copy of your permit during construction to ensure compliance with all conditions of approval.

Holder agrees to comply with the following conditions of approval 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 permit.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated.

3. Required Standard Conditions of Approval:

#### a. Notification

Contact the Supervisory Environmental Protection Specialist, Jim Amos, at 575-234-5909 at least 24 hours prior to starting construction.

### b. Freshwater Only

The frac pond will only be authorized to contain freshwater and testing of water quality is required. Additives are not allowed without consent of the authorized officer in writing.

# c. Contamination

If at any time the water in the frac pond becomes polluted with salts or other contaminants, use of the frac pond will cease and desist, and all liquids will be removed from the frac pond and disposed of properly. The operator will preclude releases of oil into open pits. The operator must remove any accumulation of oil, condensate, or contaminant in a pit within 48 hours of discovery.

## d. Authorized Disturbance

Confine all construction and maintenance activity to the approved authorized area applied for in the application.

# e. Facilities

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations. Grey-water, sewage, and trash shall be removed from the site and disposed of properly at a state approved facility.

#### f. Escape Ramps

The operator will construct and maintain frac ponds to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in frac ponds. Escape ramps must be installed at every corner of the frac pond and in the center of each side if that side exceeds 100 feet in length. Escape ramps must be in contact with the side of the frac pond, bottom of the frac pond, and the top of the frac pond berm. Escape ramps <u>cannot</u> be made of metal and <u>cannot</u> be steeper than a 3:1 slope (Horizontal Distance: Vertical Distance) or 30% slope. (*Examples of escape ramps: 12" wide wooden planks wrapped in matting, felt lining, etc.*)

# g. Frac Pond Pipelines

Temporary pipelines flowing from the frac pond to the target well will be laid along existing roadways unless an exception has been granted by the authorized officer in writing.

## h. Mineral Material from Excavation

Mineral materials extracted during construction of the frac pond will be stored onlocation and/or used for constructing the frac pond.

# i. Frac Pond Liner

The frac pond will be lined with at least a 30 mil. plastic liner. The plastic lining will be removed prior to final abandonment.

# j. Topsoil Stockpile

The operator shall strip at least the top 6 inches of soil (root zone) from the entire frac pond area and stockpile the topsoil approximately 25 feet outside the bermed perimeter of the pond in a low profile manner, reasonably protected from wind and water erosion. Topsoil shall not be used for constructing the frac pond. The topsoil will be used for final reclamation purposes only.

# k. Frac Pond Fence

The operator will install and maintain exclosure fencing on all sides of the frac pond to prevent access to public, livestock, and large forms of wildlife. The fence shall be installed at the base of the berm and never on top of the berm. Construction of the fence shall consist of steel and/or wooden posts set firmly into natural ground. Hog panel or chain-link fencing must be used as the fence and tied securely to the fence posts. Barbed-wire fencing or electric fences <u>shall not</u> be used. The fence height <u>shall not</u> be shorter than six (6) feet. The erected fence shall be maintained in adequate condition until the frac pond is reclaimed.

## I. Erosion Prevention

Install earthen erosion-control structures as are suitable for the specific terrain and soil conditions.

### m. Reclamation Start

- I. Reclamation efforts will commence immediately after the frac pond is no longer needed for the purpose of completing wells.
- II. Within 3 months of completion of frac operations on associated wells, all earthwork and final reclamation must be completed. This includes reclaiming and/or removal of:
  - i. Any roads approved for use with the pond
  - ii. Surface water lines
  - iii. Tanks, pumps, fencing etc.

### **Requirements for Operations and Final Reclamation:**

4. If, during any phase of the construction, operation, maintenance, or termination of the frac pond, any pollutant should be released from the contaminated frac pond, the control and total removal, disposal, and cleaning up of such 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, or to repair all damages resulting there-from, 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.

5. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf 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.

6. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

7. After all disturbed areas have been satisfactorily contoured and prepared for seeding the location needs to be revegetated with the seed mixture provided. Seeding may need to be repeated until revegetation is successful. Operators shall contact Jim Amos, Supervisor, Environmental Protection – (575)234-5909, **prior** to beginning surface reclamation operations.

8. Seeding is required: Use the following seed mix.

( ) seed mixture 1( ) seed mixture 2(X) LPC mixture

- ( ) seed mixture 3( ) seed mixture 4
- () Aplomado Falcon mix

9. Special Stipulations:

**Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:** Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. 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 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this 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 ft. from the source of the noise.

#### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

#### Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

#### Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

#### Ditching

Ditching shall be required on both sides of the road.

#### Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

#### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

## **Cross Section of a Typical Lead-off Ditch**



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

#### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: 400' + 100' = 200' lead-off ditch interval 4%

#### Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

#### **Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

#### **Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.



Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

