

NEW-BOLD ENTERPRISES

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RE: Dolly Sods Wilderness, Ordnance Removal Project, Environmental Assessment

Dear Wayne:

As I discussed with Wally Dean this morning, I have prepared a summary of the project to serve as a "talking paper" for the meeting tonight. The text used has been extracted from documents which your office has provided, however, I would like you to peruse the material to confirm your concurrence with the information to be disseminated. My secretary, Kay Newlon, will make changes at your direction. She can be reached at (304) 296-9161.

Thank you for your help.

Sincerely,


Nancy Vyas

Attachments

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**Dolly Sods Wilderness Area
Ordnance Removal Project
Environmental Assessment**

Notes for Discussions—May 24, 1995

Purpose of Project

The 10,215 acre Dolly Sods Wilderness Area located in West Virginia was part of the West Virginia Maneuver Area during World War II. The area was used to train infantrymen to fire artillery and mortars. Records are scarce, but the location of gun emplacements are known and are shown in Exhibit 1.

Even though the area was searched and cleared by military explosive ordnance teams after the war, at least 20 pieces of ordnance have been found in recent years. One individual was severely wounded, and several near-misses have occurred. Unexploded munitions present an imminent and present danger to the public welfare. Therefore, the Department of Defense intends to remove unexploded ordnance.

The Dolly Sods Wilderness Area is part of the Monongahela National Forest. It is managed by the USDA Forest Service. The U.S. Army Corps of Engineers has developed a plan for ordnance removal, and will manage removal. The Forest Service has provided input to the plan regarding issues related to forest management and wilderness area management practices. The U.S. Fish and Wildlife Service, the WV Department of Natural Resources, and the WV Department of Environmental Protection have provided input related to botanical and zoological species of concern, and environmental degradation issues.

Alternatives

A feasibility study was conducted in 1991 to characterize the nature and extent of ordnance present. Approximately 281 acres considered most likely to have been used as targets or contain undershots or overshots were searched. Unexploded ordnance (UXO) technicians swept the surface with hand-held magnetometers. Thirteen pieces of ordnance were found buried 6 to 24 inches below the surface.

Ordnance included ^{mm}57 armor piercing, 60 mm high explosive, and 81 mm white phosphorus rounds. Records indicate that 81 mm, 105 mm, and 155 mm artillery shells were fired in the area so there is a reasonable expectation that they may also be present.

The wilderness area is 10,215 acres in size, and, because of the large size of the wilderness area and the extremely rugged terrain, remediation of the entire wilderness area would be an extremely difficult and expensive proposition. In addition, it is likely that difficulties would arise due to the existence of endangered species in sections of the wilderness and the necessity of excavating metallic contacts or clearing areas of underbrush. Furthermore, it has been established from the site investigation that certain regions of the wilderness area are

extremely unlikely to contain ordnance. For these reasons, the remediation of the entire wilderness area is not considered to be a feasible option. The Corps of Engineers has attempted to determine the level of remediation which is appropriate for the ordnance contamination and to identify the locations where this remediation would be of the greatest benefit.

Alternatives currently considered include:

Alternative 1—No Action—no search for ordnance and disposal of ordnance found and reported by users of Dolly Sods.

Alternative 2—Searching 20 feet on each side of Forest Service designated hiking trails, and detonating ordnance in place. No search of campsites.

Alternative 3—Searching 20 feet on each side of Forest Service designated hiking trails (105 acres), and detonating ordnance in place. Searching Forest Service designated campsites and detonating ordnance in place. This is the selected alternative.

Other alternatives which have been considered in the very early stages of the project, such as searching and clearing the entire wilderness area, have been deemed too aggressive. The three alternatives under current consideration are those which are considered by the managers of the wilderness, i.e., the Forest Service, to be appropriate for the area.

Work Plan

Teams of experienced UXO contractors will sweep the trails and campsites using hand-held magnetometers. The sensitivity of the instruments will be set to attempt to differentiate between metal fragments and ordnance, however, in many cases a small piece of metal near the surface may give the same signal as a large piece much deeper. An attempt has been made to estimate the total number of holes that will be dug in the search. In the 1991 study, 134 metal fragments were found that were not ordnance, while 13 pieces of ordnance were found.

Positive signals considered to be potential ordnance will be excavated by hand, at a depth of 1 foot on trails and 4 feet at campsites. If no ordnance is found, the metal fragment will be returned to the hole, it will be filled with excavated material and tamped by foot.

If ordnance is found, a piece of binary explosive or shaped charge will be placed alongside it. It will be detonated remotely. Based upon location, the charge may be covered with earth. A cover will increase the crater size.

The size of the crater depends on the surrounding material, amount of cover material, and size of the ordnance. For ordnance uncovered in wet sandy clay, the table on the following page gives the size of the crater.

	<u>60 mm</u>	<u>81 mm</u>	<u>105 mm</u>	<u>155 mm</u>
<u>No cover material</u>				
Total Weight (lbs.)	3.2	9.4	33.0	94.6
Explosive Weight	0.34	2.1	5.1	15.4
Apparent crater depth (ft.)	0.8	1.4	1.9	2.7
Apparent crater diameter (ft.)	2.3	4.2	5.7	8.1
Apparent crater volume (cu. ft.)	1.6	10.1	24.4	70.8
True crater depth (ft.)	0.8	1.4	1.9	2.7
True crater diameter (ft.)	2.3	4.2	5.7	8.1
<u>For 1 foot of tamped cover</u>				
Apparent crater depth (ft.)	1.5	2.4	3.0	3.8
Apparent crater diameter (ft.)	3.7	6.2	7.8	10.3
Apparent crater volume (cu. ft.)	7.9	36.3	70.7	160.5
True crater depth (ft.)	1.5	2.4	3.0	3.8
True crater diameter (ft.)	4.2	7.1	9.0	11.8

The size of the counter charge used to detonate the ordnance will increase the size of the crater. The shaped-charge is a small charge designed to penetrate the shell at a single point and does not significantly increase the size of the crater.

Treatment of the crater following explosion of the ordnance is under discussion. It may be filled with local materials, and covered with no seed straw and leaves. It may be left as is. In areas close to streams where erosion may result, a sediment filter such as seed free straw will be placed to capture silt prior to entry into streams.

No motorized vehicles will be used in the wilderness. Pack animals may be used to transport heavy materials. The UXO team will not camp in the wilderness.

Work will be conducted during the week to avoid peak recreational use. The schedule of work is anticipated to be spring, summer, and autumn, up to six months, in 1996.

Adverse Impacts of Selected Alternative/Mitigation Action

A team of technical experts are in the process of compiling a list of direct and indirect adverse impacts, and are suggesting mitigating actions.

Areas of consideration include:

- botanical resources
- zoological/wildlife resources
- wilderness resources
- wetlands
- environmental resources
- cultural resources
- socioeconomic resources