



Pre-Gondola and Trencher, Montana | Site

A PLOWSHARE SITE

This fact sheet provides information about the **Pre-Gondola and Trencher, Montana, Site**. Long-term stewardship responsibilities for this site are managed by the **U.S. Department of Energy Office of Legacy Management** under the **Plowshare/Vela Uniform/Weapons Related Program**.



Site Information and History

The Pre-Gondola and Trencher site is on a federal land withdrawal used for the Fort Peck Reservoir. It is within Sections 10 through 14 of Township 25 North, Range 39 East in Valley County, Montana. There are currently no inhabited dwellings within 4 miles of the site. The nearest population center is the town of Fort Peck, Montana, which is 10 miles northeast of the site.

The site was used in the 1960s for subsurface testing of nonnuclear chemical explosives to determine the cratering characteristics for potential use in future construction applications using nuclear detonations. The tests were part of the Plowshare Program, which was established by the U.S. Atomic Energy Commission (AEC) in 1957 to explore peaceful uses of nuclear explosives.

The Plowshare Program sought to use nuclear detonations for civil works projects and industrial applications that included the enhancement of natural gas production from low-permeability gas-bearing formations and the construction of dams, harbors, canals, highways, and railroads. The nonnuclear chemical explosives testing completed at the Pre-Gondola and Trencher site was conducted jointly with the U.S. Army Corps of Engineers (USACE) Nuclear Cratering Group. The land the

Pre-Gondola and Trencher site is on is owned by USACE but is managed as a wildlife refuge by the U.S. Fish and Wildlife Service (USFWS).

Project Pre-Gondola and Project Trencher were separate projects within the Plowshare Program. The purpose of the Pre-Gondola tests was to design nuclear applications for creating waterways, harbors, and reservoirs by observing cratering responses to large subsurface chemical explosives within a weak, saturated shale at the site. Trencher had four main objectives: (1) to determine the single test cratering performance in clay shale of two different aluminized slurry explosives (IRECO DBA-22M and Dow MS80-20), (2) to determine the effects of different stemming materials on crater formation, (3) to determine the effects of different cylindrical test geometries on crater formation, and (4) to determine the feasibility of springing holes in clay shale. The two projects were collocated due to their shared use of nitromethane explosives.

AEC and USACE conducted field operations from 1966 through 1969, and during this time completed approximately 175 subsurface nonnuclear chemical explosives detonations at the site. Test operations occurred over a 640-acre area that had support facilities, including a nitromethane storage area, a helicopter pad, office trailers, camera stations, a transformer, and several seismic stations on and off the site.

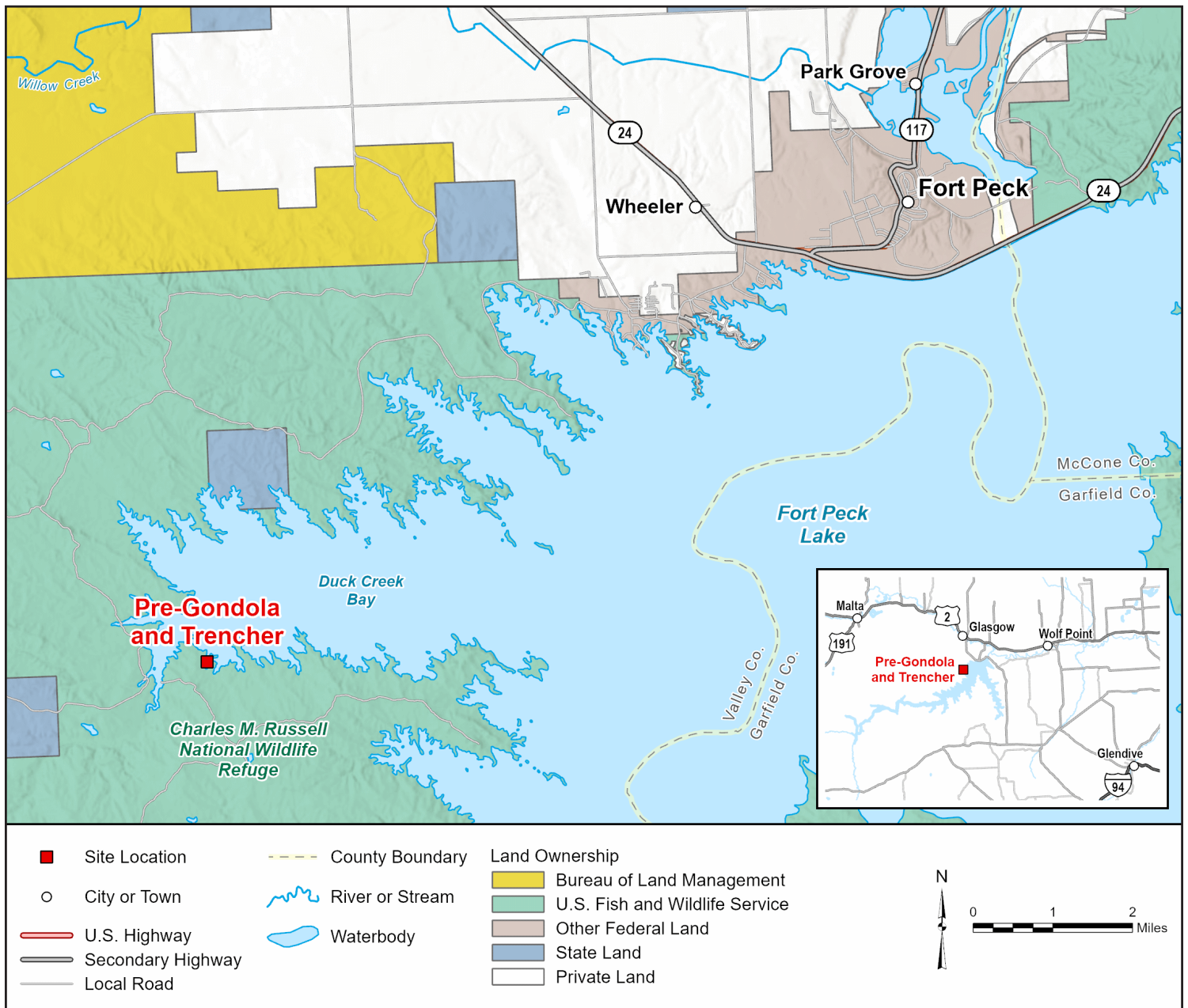


Figure 1: Location map of the Pre-Gondola and Trencher, Montana, Site.

Principal Stakeholders

- USACE (landowner).
- USFWS (land manager).

Regulatory Framework

Depending on work performed, regulatory involvement could include the Montana Department of Environmental Quality, USACE, USFWS, and Montana Sage Grouse Habitat Conservation Program (SGHCP).

Current Site Conditions

The site is part of the Charles M. Russell National Wildlife Refuge, which is managed by USFWS. The site and surrounding area are used for ranching and recreational activities such as camping, hunting, and fishing, but the sparse vegetation supports only limited grazing.

Many of the detonation creators are still visible at the surface, but the most significant feature that remains is the trench that at the time of testing connected to the Fort Peck Reservoir. It's connection now is dependent on the water

elevation within the reservoir. The trench measures approximately 1,370 feet long by 200 feet wide and at the time of the testing was large enough to allow a small barge to enter the trench from the reservoir. The connection of the trench to the reservoir demonstrated the successful application of explosives for the excavation of waterways.

Debris from the testing also remains at the site. The debris is scattered around the test areas and is concentrated around the craters, trench, former control point, and former nitromethane storage area. The debris includes portions of charge casing, emplacement hole pipe, stemming material, a storage container, rebar, concrete, wire, conduit, braided steel cable, and miscellaneous metal and plastic fragments. There are no visible signs of surface staining or unusual areas of stressed vegetation around the debris.

Current and Future Considerations

The site is within the range of the greater sage grouse, a conservation agreement species administered under the Montana SGHCP. No work is performed on-site annually until after July 15, which is generally when sage grouse fledglings are mobile enough to avoid equipment and human activity. However, no state permits or oversight for sage grouse are required because work is performed on federal land.

Legacy Management Activities

Long-term surveillance of the site includes the maintenance of site records and communication with stakeholders. Annual site visits are conducted to meet with the stakeholders and ensure the site conditions remain protective of human health and the environment.

Contact Information



In case of an emergency at the site, contact 911.

LM toll-free emergency hotline: (877) 695-5322

Site-specific documents related to the **Pre-Gondola and Trencher, Montana, Site** are available on the LM website at www.energy.gov/lm/pre-gondola-and-trencher-montana-site.

For more information about LM activities at the **Pre-Gondola and Trencher, Montana site**, contact:

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