

Pathfinder–Shirley Basin Uranium Recovery Facility

Site Location and Facility Description

The former Shirley Basin uranium mill site is located in Carbon County, Wyoming, approximately 35 miles south of Casper (Figure 1) and 5 miles northeast of the former Shirley Basin town site. The town of Shirley Basin was primarily a mining camp and has been abandoned for more than 10 years. Reclamation of the prior conventional mill operations at the site has been substantially completed. However, the licensee, Pathfinder Mines Corporation (Pathfinder), intends to operate the *in-situ* recovery (ISR) disposal area for the foreseeable future.

Facility Licensing and Operating History

Uranium milling began on the site in 1971, and operations continued through 1992. The former facility area included two solid tailings impoundments (covering approximately 158 acres

and 135 acres) and a 30-acre solution pond (Pond 3), now being used for ISR disposal (Figure 2). The former mill has been decommissioned. Pathfinder has completed other reclamation activities, including grading, radon clay barrier installation, sand layer installation, topsoil installation and reseeding (Area 3 north waste dump, Area 3 south waste dump, and former topsoil piles), and rock mulch installation for all ponds except Pond 3.

Reclamation of Pond 3 and its adjacent areas will occur after Pathfinder discontinues operation of the ISR disposal area. The remaining site areas that must be reclaimed include the shop yard, stockpile area, office, industrial pond, and local roads. Also, Pathfinder has to construct three drainage channels after disposal operations are discontinued. The first channel will be located adjacent to the former evaporation ponds, the second parallel to the access road, and the third at the Pond 3 area.

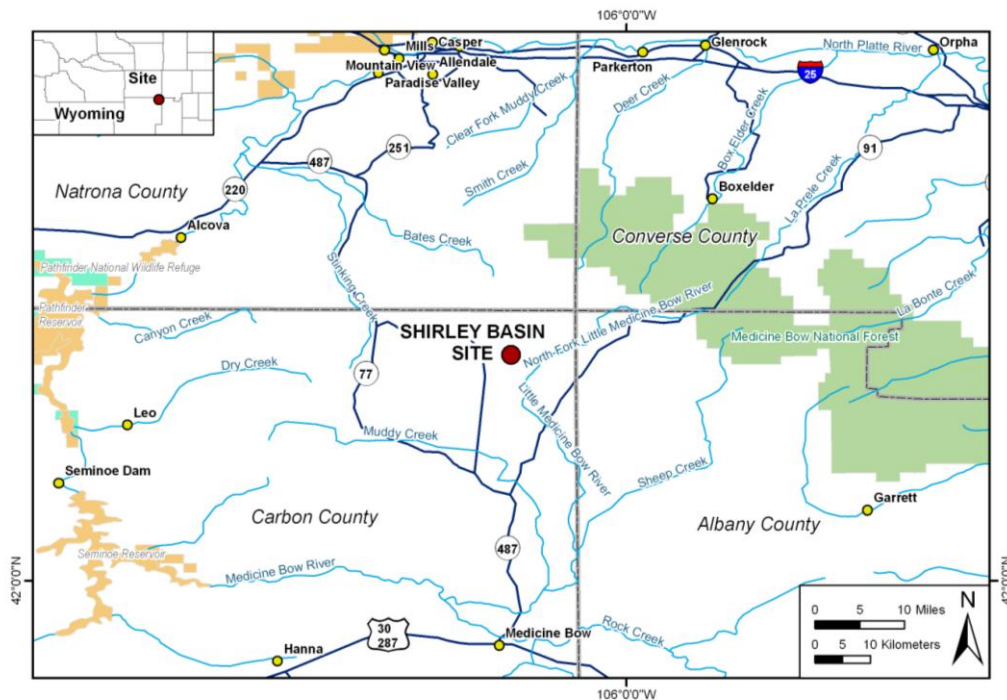


Figure 1. Shirley Basin Uranium Mill Site Location Map

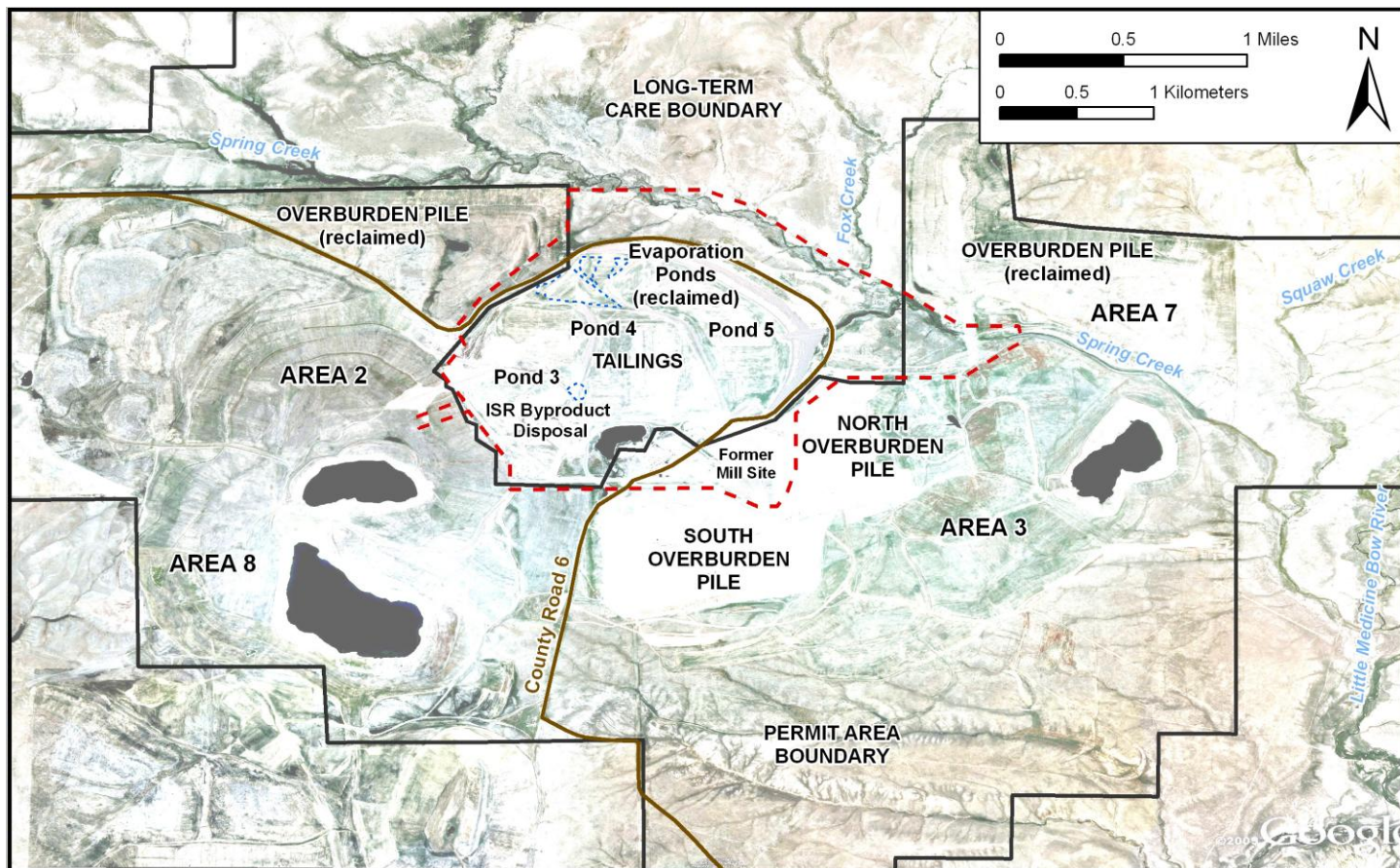


Figure 2. Shirley Basin Site Layoutⁱ

Tailings Management and Disposal

Pathfinder has reclaimed approximately 90 percent of the tailings and discontinued groundwater reclamation after the U.S. Nuclear Regulatory Commission (NRC) approved the alternate concentration limits in 2005. To address concerns regarding sudden pollutant loads to Spring Creek, a license amendment was issued requiring Pathfinder to maintain its groundwater remediation system until NRC determines it is no longer needed. Post-alternate concentration limits sampling has been ongoing for the past 2 years. Some

contamination pulses have migrated toward Spring Creek, resulting in higher contaminant concentrations. However, concentrations are still protective of human health and the environment.

Additional Information

For more information about the Shirley Basin uranium recovery facility, visit the NRC uranium recovery website at <http://www.nrc.gov/info-finder/materials/uranium/> or contact the NRC facility project manager, Ted Carter, at (301) 415-5543 or ted.carter@nrc.gov.

ⁱSource: Pathfinder Mines Corporation. "Shirley Basin Mine Tailings Reclamation Plan." Volume 2. Mills, Wyoming: Pathfinder Mines Corporation. 1993.