



SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

Southwest Soil Survey Region

Wasatch and Unita Mountains Major Land Resource Areas

Assessment of Soil Used to Line an Irrigation Pond in Panguitch, Utah

Purpose

The purpose of this technical soil service was to determine soil texture, depth, and application coverage of soil used to line a pond that has sandy-skeletal and coarse-loamy soil textures as the native soil.

Background

The initial site visit occurred in March 2022 to determine if the pond location was in the soil map unit indicated on the Web Soil Survey (WSS). At that time, it was determined that the soil was as described in WSS. The soil map unit is 141 (Tebbs sandy loam, 2 to 5 percent slopes) and has a "Very Limited" rating. This rating is for pond and reservoir areas, embankments, dikes, and levees soil interpretations. This is due to seepage for ponds and piping for embankments. It was determined that with the proposed location, a soil suitable for use as a liner would need to be sourced.

Soil suitable for a liner was sourced and pond construction started. Brent Campbell, a Natural Resources Conservation Service engineer contacted Keith Crossland of the Richfield Major Land Resource Area Soil Survey Office on May 6, 2024, to assess the soil used to line the irrigation pond. The site visit occurred on May 8, 2024.

Key Outcomes

At the time of the site visit, some work was still occurring on the pond. The contractors were still grading and leveling the bottom of the pond, but all embankments were constructed. Seven points were sampled on the embankments, and one sample was taken



at the bottom of the pond. Hand textures were performed to determine the soil texture class and clay contents.

Soil texture classes and clay contents varied considerably along the embankments where lining was said to be completed. The bottom of the pond was still the native soil and had not been lined. Some areas along the embankments were missed when lining. These missed areas have gravelly loamy sand soil textures with very low clay contents.

Some areas along the embankments did have a liner with clay loam and sandy clay loam soil textures with clay contents ranging from 21 to 40 percent. The lined and unlined areas are easy to visually identify. Lined areas are clearly brown, while unlined areas are gray in color. Areas needing a soil liner were identified for the landowner during the site visit. NRCS engineers and planners were informed of the deficiencies in the pond liner and given a map of sample points with soil texture and clay contents.