

Mineralogically, the upper clay horizons are dominated by smectite-type clay, while the deeper horizons are dominated by illite-type clay, with the latter showing mineralization of up to 9,000 parts per million (ppm), and the former up to 4,000 ppm. The moat sedimentary rocks drilled in the Thacker Pass basin contain anomalously high lithium contents (greater than 100 ppm) with no change in lithium content across the boundary between oxidized and unoxidized rock (SRK 2016). Exposures of moat sedimentary rocks in the Project area are limited to a few drainages and isolated road cuts. The stratigraphic sequence of the deposit has been primarily derived from core drilling.

The smectite-to-illite transition and associated increase in lithium concentration occurs across the whole caldera, supporting the hypothesis that the mineralization is associated with burial diagenesis. Vertical drilling indicates that the clay intersections range from a few feet up to 300 feet (LNC 2018).

2.3.3 Soils

Approximately 60 percent of the soil type in the Survey area (Figure 2) is Dewar-Dacker Association (Cedar Creek 2018a). The Dewar soil series is a moderately deep, well-drained alluvium that formed from mixed rocks, including volcanics and wind deposited sediment. The Dacker soil series consists of moderately deep soils over a duripan, well-drained soils that formed in silty alluvium derived from mixed rocks with a component of loess and volcanic ash.

Dominant, minor, and sub-dominant soils in the Survey area (Figure 2) were verified and found to be accurately mapped by the Natural Resources Conservation Service (NRCS) Soil Survey. Soil types mapped in the Survey area are presented in Table 2-2 below.