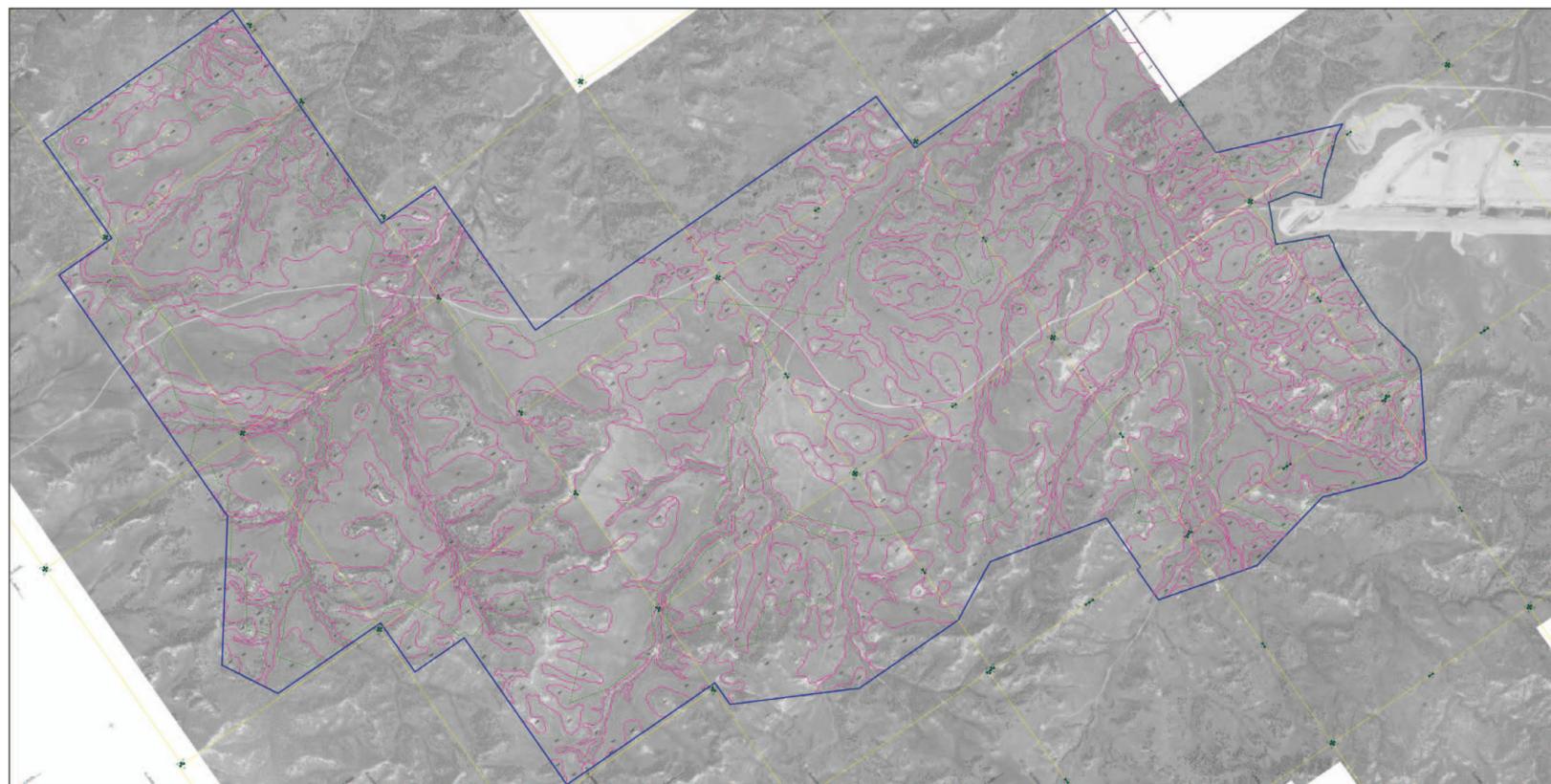


Soils

Soil Characteristics

Initial review determined that prime farmland is not present in the Area F under non-irrigated conditions.



| Map Unit Number | Soil Map Unit Name | Acres |
|-----------------|--|--------|
| 100 | Udic Turfhorst, 15 to 20% slopes | 100.70 |
| 110 | Brady fine sandy loam, 2 to 8% slopes | 14.20 |
| 120 | Brady fine sandy loam, 8 to 15% slopes | 603.14 |
| 130 | Brady loam, 8 to 20% slopes | 406.31 |
| 140 | Brady loam, 2 to 8% slopes | 277.00 |
| 210 | Chiswick fine sandy loam, 2 to 8% slopes | 48.45 |
| 220 | Chiswick loam, 2 to 8% slopes | 53.14 |
| 230 | Flanagan silt loam, 2 to 8% slopes | 356.81 |
| 240 | Flanagan silt loam, 2 to 8% slopes | 150.52 |
| 310 | Loma silt loam, 2 to 8% slopes | 262.22 |
| 320 | Loma silt loam, 2 to 8% slopes | 907.38 |
| 410 | Sandy sandy loam, 2 to 8% slopes | 21.87 |
| 420 | Yankee loam, 2 to 8% slopes | 82.02 |
| 430 | Yankee loam, 2 to 8% slopes | 217.05 |
| 440 | Yankee loam, 8 to 15% slopes | 507.15 |
| 500 | Kalbar silt loam, 2 to 8% slopes | 107.05 |
| 510 | Kalbar silt loam, 2 to 8% slopes | 118.84 |
| 520 | Kalbar silt loam, 8 to 15% slopes | 305.37 |
| 600 | Colburn loam, 8 to 15% slopes | 13.16 |
| 1210 | Brady silt loam, 2 to 8% slopes | 28.00 |
| 1215 | Brady silt loam, 2 to 8% slopes | 81.68 |
| 1216 | Brady silt loam, 2 to 8% slopes | 108.27 |
| 1217 | Brady silt loam, 2 to 8% slopes | 82.81 |
| 1218 | Brady silt loam, 2 to 8% slopes | 286.81 |
| 1219 | Brady silt loam, 2 to 8% slopes | 88.23 |
| 1220 | Brady silt loam, 2 to 8% slopes | 155.45 |
| 1221 | Brady silt loam, 2 to 8% slopes | 28.16 |
| 1222 | Brady silt loam, 2 to 8% slopes | 417.34 |
| 4310 | Sandy Chiswick loam, 2 to 8% slopes | 44.91 |
| 4315 | Yankee loam, 2 to 8% slopes | 5.91 |
| 4320 | Yankee loam, 2 to 8% slopes | 52.20 |
| 4325 | Dependent Colburn loam, 2 to 8% slopes | 126.78 |
| 7610 | Dependent Colburn loam, 2 to 8% slopes | 81.08 |
| 7615 | Dissected Land | 2.94 |
| Total Area F | | 4668.2 |

Soil Removal and Salvage

► Soil Removal

- ◆ Prior to surface disturbance by the mining operation, and after removal of vegetation that would interfere with soil removal and use, soil suitable for reclamation use would be removed.
 - Double-lift soil handling method:
 - Separate handling of approximately 1 foot of surface soil and approximately 1 foot of subsurface soil
 - Tree soils salvaged in a single lift method in depths up to two feet
- ◆ Undisturbed soils would be protected from contamination and degradation.
- ◆ Soil removal would not be done for minor disturbances, such as power poles, signs, fences, or where operations will not destroy vegetation and cause erosion.

► Soil Salvage and Stockpiling

- ◆ Salvaged material would be redistributed on areas graded to approximate postmining topography.
- ◆ If regraded areas were not immediately available for redistribution, topsoil, subsoil, and tree soil would be stockpiled in separate approved locations.

► Soil Placement

- ◆ During and after redistribution, the applicant must:
 - Prevent spoil and soil compaction
 - Protect against soil erosion, contamination, and degradation
 - Minimize the deterioration of the biological properties of the soil
- ◆ Soil depths will vary for different vegetation communities to achieve greater plant diversity
- ◆ Soil replacement will be done on the contour whenever possible. Some exceptions are:
 - Where equipment operator safety is jeopardized;
 - On pond embankments, road ditches and incised drainages; and
 - On linear features too narrow to accommodate the equipment turning radius.
- ◆ Equipment used:
 - Dozers for redistribution of soil material
 - Front-end loaders and haulage equipment (bottom and/or end dump) to haul soil from stockpiles
 - Blades or dozers to spread soil to the approved depth
- ◆ To reduce compaction from rubber-tired equipment, the number of passes over the regraded/resoiled surface would be limited to the extent possible.
- ◆ Redistributed soil would be reconditioned by subsoiling; soil reconditioning would be done on the contour.