

Sediment retention structures will be constructed prior to mining related disturbance in the overlying watershed. These structures are designed to have adequate sediment storage, to effectively treat the 10-year, 24-hour storm for settleable solids, and to safely pass the 25-year, 24-hour storm event through the discharge structures. Sediment control reservoirs will be operated to maintain their effective design capacity. Sediment will be cleaned out at approximately 60 percent of the three-year sediment storage level. The sediment level in ponds will be visually approximated during the quarterly pond inspections, as water level conditions permit with support from a staff gage placed at the base of the pond on the inlet side. Gradations will be marked on the staff gage and the maximum storage level will be marked on the riser pipe, to allow sightings during dry conditions. Cleaning will be done during dry periods of year, typically between fall and mid-winter or in early summer when the pond sediments have had an opportunity to dry out. Cleanings from all ponds and other sediment controls is stacked on the flat area above Fill 8 that is near the road to Pond 5. This area being relatively flat give the material the best opportunity to dry out. This storage area will be graded and seeded, once no more sediment cleaning is anticipated and vegetation on the mine site has begun to look successful. Vegetation success is expected in the area due to the material being composed of topsoil and the area being flat.

The ponds are designed to prevent diminution to downstream water users. Each structures has been designed under the supervision of a professional engineer. Ponds are shown on **Map 2.05.3-2** and design documentation is presented in **Exhibit 15**.

All impoundments are designed to have embankments approximately 10 ft high and storage capacity less than 20 acre feet. In those locations where the topography is too steep, storage capacity is achieved by excavation. Excavated impoundments are incised no deeper than 5 ft below the bottom of the embankment, and the volume in the lower 5 ft is used for sediment storage and dead pool. **Exhibit 15-14** illustrates typical design parameters for both totally impounded and excavated ponds. By using excavated impoundments, LCC anticipates that MSHA and State Engineer's approvals will not be required. Excavated material will be used for embankment construction and placed in the mine backfill or in the excess spoil fill areas. Topsoil will be stockpiled near the pond sites within the pond runoff area.

Small area exemption (SAE) designs are included in **Exhibit 15**. These provide documentation that the effluent draining from small disturbances at auxiliary facilities or adjacent to topsoil piles outside the major disturbance areas will meet effluent limitations following the use of one or several sediment control measures. These include but are not restricted to the use of rock, mulch, straw bale dikes, silt fencing, rock check dams, and vegetative filters.

A small (approximately one acre) service area has been constructed to the north of the Jeff Canyon Haul Road, as shown on **Figure 2.05.3-14b**. This area is used for placement of portable fuel tanks, ANFO prill bins, a cap house, and miscellaneous equipment. The site was leveled and graded to drain to a bermed drainage collection area on the south east side, where storm water is treated with a silt fence or gravel drain before discharge. SEDCAD calculations (**Exhibit 15**) estimate the runoff from a 10-year, 24-hour, storm event will be approximately 0.2 acre-ft, which can be effectively treated with a 100-ft silt fence.

The mine office SAE is located in an area previously disturbed by ranching and oil and gas operations. Effluent limits will be met by applying gravel to traffic areas and constructing a

containment berm along the north edge of the site. This berm will include a gravel drain structure at its lowest elevation.

Runoff from the loadout and stockpile area is routed to a small sedimentation pond at the northeast corner of the area. Runoff from the surrounding area will be diverted in a ditch on the south side of the loadout from discharge east into Lorencito Canyon. An SAE for the small spillage clean-up area on the north side of the tracks and on the west end of the south side of the tracks will be controlled with straw bales and/or silt fencing.

Sediment control reservoirs will be constructed prior to disturbance of the overlying watershed, and will be retained through the achievement of the Phase II bond release. Ditches will be reclaimed when they are no longer needed to divert water. Most ponds will be proposed for permanent retention on the condition they meet the requirements of Rule 4.05.9(1) following reclamation.

(5) Topsoil

Topsoil and usable subsoil (A and B horizons) will be removed using tracked dozers and excavators. Topsoil and subsoil will be removed from areas to be affected by the surface mines following removal of vegetative cover but prior to any other surface disturbances such as drilling, blasting, or overburden stripping. Salvage areas for the surface mine are shown on **Map 2.05.3-3c**.

LCC will remove topsoil prior to operational disturbances except when slope angles restrict these activities. Additionally, areas with negligible amounts of topsoil will not receive topsoil removal.

LCC proposes several approaches for the removal of shrubby vegetation from the head-of-hollow fill areas, and for its subsequent use. Shrub removal in the fill areas will be achieved with clearing or burning. Presently, LCC proposes to accomplish vegetation clearing by chaining or dozing activities. Rotoclearing may be a possibility; however, implementation of this method depends both upon the acquisition of a Madge Rotoclear, and upon its feasibility in rocky and/or steep areas. Burning is retained as an option for vegetation removal due to its function on slopes which are too steep for other management practices.

Upon removal, LCC proposes to use the resulting organic material in sediment control practices as well as an organic mulch. Sediment control practices will include the establishment of brush check dams and brush windrows to reduce slope lengths. This additionally will provide shelter areas for wildlife such as small rodents. Alternatively, organic material removed from the surface mine may also be chipped and used as a surface mulch.

Volumes of available soil have been calculated using the average thickness of salvageable soil for each soil type as noted in section 2.04.9. As shown in **Table 2.05.3-2**, a total of more than 1.5 million cubic yards of topsoil and subsoil have been identified for removal from the surface mines, roads, loadout facility, and ponds. Soils will be salvaged for slopes up to 50 percent as identified on **Map 2.05.3-3e**. The proposed amount to be removed and stockpiled excludes one soil type (Louviers-Rombo-Travessilla Complex) due to its elevated rock content. Furthermore, additional soil may be opportunistically salvaged as possible.

2.05-33a