

## 10.0 SEDIMENT AND DUST CONTROL

Sediment transported by surface water (stormwater) and sediment transported by air (dust) will be managed and controlled during the operational phase of the facility. Dust control will be necessary during the operational period to minimize fugitive dust releases. Sediment control structures will be employed during both the operational and closure phases of the Project. Sediment transport and controls as related to surface water management are more fully discussed in the *Site Water Management Plan* (Tetra Tech, June 2007).

### 10.1 Stormwater Controls

#### 10.1.1 Pre-Mining Construction and Post-Closure Demolition Stormwater Controls

Temporary erosion and sediment controls will be installed to reduce sediment loading in stormwater during the pre-mining construction of the ancillary facilities and pre-stripping of the waste rock and tailings storage areas. Similarly, best management practices will be used during construction of the access roads to limit the erosion potential off cut/fill slopes. Access roads include the primary access from State Highway 83 to the plant site and various internal access roads from the plant site to the water storage tanks, the heap leach facility, and PWTs pond. A secondary access road from Santa Rita Road to the plant site is also included as part of the Project. In addition, haul roads will run from the open pit to the heap leach, dry tailings, and waste rock storage facilities. Temporary best management practices will be installed to control erosion and sediment during demolition activities and until vegetation can be established.

#### 10.1.2 Sediment Ponds

Sediment control facilities will be installed to reduce the total suspended solids (TSS) loads to the minimum practical level for the 10-year, 24-hour storm event. Sediment ponds will be located and sized based on topography, available space, and the anticipated sediment generating capacity of the contributing basin. These unlined ponds will typically be sized to be no more than 6 to 8 feet deep to minimize settling time. Embankments will be designed to be non-jurisdictional and constructed out of large, porous waste rock. The ponds will be temporary structures that will collect stormwater flows, settle velocities so that the heavier wash load falls out, and allow water to slowly seep out through the rockfill. As facilities progress, sediment dams may be abandoned and other sediment dams constructed downstream. Both the upstream and downstream faces of the sediment pond embankments will be armored. Large storm events will be allowed to overtop the length of the dam crest.

### 10.2 Dust Control

Operational and engineering dust controls during the operational phase will consist of:

- Perimeter buttress constructed of waste rock material. Buttress construction will advance ahead of the tailings stacks and will ensure that long stretches of tailings are not exposed to windy conditions.
- Conveyor stacking through a tripper arrangement on mobile conveyors. This stacking arrangement creates an irregular shape to the top surface of the placed tailings - breaking up air flow patterns.
- Coarser tailings grind. Grind sizing will be such that 80% of the material will pass the 150 mesh (0.0041 inches) rather than the more conventional tailings sizing of 80% passing

250 to 325 mesh (0.0025 to 0.0017 inches). This larger grain size will help reduce the amount of material available to generate dust.

- Dust control technologies throughout the milling circuit. Technologies such as water sprayers will be used at appropriate locations within the milling process to minimize dust generation.

Physical dust control measures during the operational phase are currently being investigated. Possibilities include:

- Application of a binder material such as EnviroTac;
- Application of a chemical for the agglomeration of fines to the conveyor system; and
- Application of water to suppress dust.

At closure, capping material will be placed over the tailings, eliminating the possibility of dust generation.