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To: <daronhaddock@utah.gov>
Date: 4/1/04 9:38AM
Subject: 2003 Midterm Clean Copy

Daron,

Per our telephone conversation this morning, attached is the clean copy of page 3.7-53 addressing the midterm finding. I reformatted the page from Wordperfect to Word, so the page won't look the same as in the Plan.

Thanks,
Johnny

Exhibit 20
Chapter 3, Section 3.7
Crandall Canyon

January 2004

The proposed alternative sediment control measures can be classified into three categories: mechanical treatment, surface protection measures, and filtering structures. Mechanical treatment increases surface roughness thereby reducing overland flow velocity, which minimizes the sediment transport capacity. Detaining some of the would-be runoff also improves soil moisture for plant germination and plant growth. Surface protection measures include mulching, mulch binders and seeding. These measures are the most effective controls since they minimize the amount of soil detached by raindrop impact, and thus limit soil loss at the source. Surface protection measures also increase the surface roughness and increase water infiltration into the ground. Filtering structures inhibit runoff and sediment transport capacity by reducing flow velocity. They also physically trap sediment in the filter openings while allowing water to pass through.

Generally, the areas where the ASCM's will be implemented consist of the topsoil stockpile No. 1 (adjacent to the gate in Price Canyon off Highway 6), topsoil stockpile No. 2, reclamation channel, and the facilities area. These features are identified on Exhibits 3.7-7B, 3.7-7C and 3.7-7F.

Mechanical treatment will be performed following the topsoil spreading and mulching of the site area by gouging the soil to a depth of 12" to 18" using the bucket of a track-mounted backhoe. Gouging will loosen the soil, allow root penetration, increase surface roughness, and increase moisture storage. This will allow for quicker vegetation establishment, which will reduce erosion. The depressions from the gouging trap sediment dislodged by raindrop impact and overland flow. They also shorten the exposed reaches over which runoff will flow, thereby reducing the sediment carrying capacity of the runoff.

In regard to surface protection measures, the incorporation of the mulch into the surface roughening will ensure that the major portion of mulch is anchored on site. The mulch itself can significantly reduce the amount of sediment yield from an area (Simons, Li & Associates, 1983, p. 4.30). The mulch also helps retain moisture to allow for seed germination. Based on a rainfall intensity factor, for the 10-year, 6-hour storm event, of 0.61 inches per hour, the minimum mulch application rate is 0.9 tons per acre to prevent mulch removal by rainfall (Simon et al., 1983, Figure 4.14). For added protection during the mulching prior to roughening, mulch will be applied at the rate of 2 tons per acre.