

TECHNICAL FIELD VISIT

Utah Coal Regulatory Program

September 3, 2009

TO: Internal File

THRU: Daron Haddock, Permit Supervisor *RDH*

FROM: James D. Smith, Environmental Scientist III *JS 09/03/09*

RE: Technical Field Visit, OSM Hydrology Team, Skyline Mine, C/007/0005

Other Attendees: Debbie Dale, Eric Perry - OSM (Mr. Perry's son accompanied the group as a guest); Tim Walter - Texas Regulatory Program; Kathy Ogle - Wyoming DEQ; Mark Bunnell, Austin Belcher, Greg Galecki, Dale Hamilton - Skyline Mine

Date & Time: 02 September, 2009 - 10:00 a.m. to 2:30 p.m.

PURPOSE: The OSM Hydrology Team was visiting the mine hoping to gain insight on applicability of TIPS supported software application to hydrology issues.

OBSERVATIONS: The visit started in one of the mine's conference rooms, where Mr. Galecki led a discussion of the hydrology of the Skyline Mine. The finite difference model that was done for the mine's consultant was discussed, including the complexity and uncertainty involved. Ms. Dale asked if the Division had used GW Vistas and ModFlow to model the area; my response was that the Division lacked the time and expertise to take on such a complex modeling project. The group discussed Electric Lake and the interaction of the mine dewatering with the groundwater system and lake; this included the geology and hydrology of the area, the dye-tracer study, isotopic data for the surface water and groundwater, and mass balance determinations for the reservoir.

The group went to Burnout Canyon to observe effects of subsidence in this perennial drainage. This included the area along the access road where there was up to 20 feet of subsidence with no evident effects on the surface. At the top of the Burnout drainage, one subsidence crack is evident above where a fire barrier was left in the mine: in addition to the visible crack in the earth's surface, the tension has split the trunk of a large aspen. Continuing

down the canyon, the team crossed areas where subsidence had lowered the surface up to 14 feet. The team was very interested in the pond that was created by the subsiding surface (which the USFS has allowed to remain, even though it is not a natural feature). A few fallen trees and cracks were evident as the team progressed down canyon, but altogether there were few visible effects from subsidence.

Near the bottom of the canyon, the team stopped at piezometers W79-35-1A and 1B, where Gregg showed charts of the water levels from pre-mining, through undermining and subsidence, and post mining. The water level in the shallow well (1B, completed in the Blackhawk) has shown a small but steady decline since monitoring began in 1982, but with no evident effect from the period when Burnout Canyon was being subsided. The deeper well (1A, completed in the Star Point Sandstone) dropped almost 400 feet during the Burnout Canyon subsidence and has only partially recovered: water is still being pumped from the Star Point fracture system through JC-1 and from the mine workings into Eccles Creek by way of the mine portals, so it can be speculated that further recovery will occur when all dewatering ends.

RECOMMENDATIONS/CONCLUSIONS:

The OSM TIPS team made no recommendations at the time of this visit. The purpose of the visit was to evaluate possible applicability of TIPS supported software to hydrology issues, so recommendations may be forthcoming. The visit seems to have met the team's expectations and purposes.

cc: All Attendees
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