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June 9, 1988

TO: John Whitehead, Permit Supervisor

FROM: Tom Munson, Reclamation Hydrologist *TM*

RE: Stipulation 817.43-(1)-(TM), Field Verification of Culvert Outlet Protection, Cyprus-Plateau Mining Company, Starpoint Mine, ACT/007/006, Folder #2, Carbon County, Utah

Synopsis of Proposal

A field verification of 46 culvert outlets was carried out by the Division Hydrologist, Tom Munson, and Plateau's Environmental Coordinator, Ben Grimes on June 7, 1988. The results and recommendations of this field verification are contained in this memo. The culverts proposed to be monitored or variances to erosion control requested are spelled out in a February 5, 1988 letter to Ben Grimes from John Whitehead.

Analysis

All 43 culverts were considered stable in regards to erosion at the inlet or outlet, if the operator implements the following measures at the following culverts.

Culvert #

- | | | |
|-----|-----|---|
| (1) | 5A | Replace conveyor belting at outlet with a length of culvert. |
| (2) | 10D | Clean sediment build up at culvert outlet. |
| (3) | 14 | Watch outlet to determine if protection is necessary. Currently it is not a problem. |
| (4) | 67A | Watch area where culvert discharges and implement protection if erosion becomes evident adjacent to concrete ditch. |

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| (5) | 4A | Replace plugged culvert and move down slope. |
| (6) | 17B | Rock outlet and maintain. |
| (7) | 34A | Clean outlet. |
| (8) | 48A | Install new culvert. |
| (9) | 60A | Maintain conveyor belt at outlet. |
| (10) | 61A | Install culvert extension and replace conveyor belting. |
| (11) | 62A | Slope too steep for erosion protection. Watch to determine if erosion from leaking culvert gets worse. Implement erosion fabric under culvert if problem gets worse. |

Recommendation

Conditional approval with the following conditions:

- (1) The operator will revise the appropriate tables to reflect the outcome of this field verification visit.
- (2) The operator will commit to implement the measures outlined above in 1988 construction season.

TM/as
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