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From: "Carter Reed" <creed01@fs.fed.us>
To: <pamgrubaughlittig@utah.gov>, <daronhaddock@utah.gov>, <daronhaddock@utah.gov>, <pamgrubaughlittig@utah.gov>
Date: 9/19/03 9:02AM
Subject: East Fork of Box Canyon Monitoring Comments

See attached comments. Didn't give us much time due to the urgency to get this done prior to winter and due to the way this was processed.

(See attached file: eastfork_box_monitoring.doc)

Carter Reed
Forest Geologist
Manti-La Sal National Forest
Supervisor's Office
599 West Price River Dr.
Price, UT 84501
435-637-2817
creed01@fs.fed.us

CC: "Aaron Howe" <ahowe@fs.fed.us>, "Rod Player" <rplayer@fs.fed.us>, "Katherine Foster" <kfoster01@fs.fed.us>, "Mesia Nyman" <mnyman@fs.fed.us>, "Thomas W Lloyd" <twlloyd@fs.fed.us>

Manti-La Sal National Forest
Comments on East Fork of Box Canyon
Subsidence and Resource Monitoring Plan
Submitted to FS on September 9, 2003

The proposed monitoring plan is not adequate as written. The objectives of monitoring are to determine if mining-induced subsidence causes any effects to water flow, stream morphology, aquatic wildlife and vegetation (especially riparian).

One of the major problems with the proposed monitoring plan, even with these revisions and additions is that there will be only one year and one season of baseline information in the 5th year of a five-year drought. Since the authorizations to mine were made by BLM and DOGM without the normal lead time, it is not possible to provide an adequate baseline prior to mining to establish existing, undisturbed conditions. For this reason we feel that any monitoring completed for mining-induced subsidence that will occur over the winter months in 2003/2004, will show only large, obvious, and immediate effects.

The mitigation plan must address methods for rehabilitation of effected riparian vegetation and aquatic habitat, not merely state appropriated waters.

The following changes are needed in the September 9, 2003 proposed monitoring plan.

Item 1, Pre-mining Survey:

- Baseline information must contain a detailed (level 1) inventory and map of riparian vegetation, mapped by area and species and accompanying low-level color infrared photography.
- Baseline information must include macroinvertebrate testing of the following parameters: Diversity Index (DAT), Standing Crop (g/m2), Number of Organisms per square meter, and Biotic Condition Index (BCI) at the ten detailed monitoring points in the channel.
- The ten (or more if necessary) monitoring points discussed must be located with stable markers on the ground and GPS coordinates. The locations must be determined based on subsidence (strain or compression), vegetation types, macroinvertebrate concentrations, and stream channel morphology to represent differing conditions in the canyon.
- The elevations, channel cross-sections, water flow, and vegetation (belt transects) and aquatic species (Macroinvertebrate parameters) at each point must be documented with fixed photo points that can be reproduced during subsequent monitoring.
- Establish the locations of perennial flow and gaining/loosing reaches of the stream channel.

- Conduct a detailed survey of the Thalwag with elevations and cross-sections at the ten (or more) monitoring points.
- Identify map and photograph all alcove sites and vegetation communities with estimates of water flow along the canyon slopes.

Item 3:

This item is very ambiguous. How will subsidence activity in the stream channel be measured and documented? Videotape evidence consistent with baseline taping, showing locations established for the monitoring points must be included.

Item 4:

Parameters to be measured and locations must be established. Monitoring must not be limited to the permanent strain areas within the angle of draw since substantial cracking can occur in the other subsided area due to transient strain caused by the advance of the longwall face.

Monitoring must continue for a minimum of 5 years beyond the date of completion of each of the two panels under the stream channel and canyon. Even though subsidence is expected to be complete within several months of mining, it may take years for the effects to aquatic ecosystems to show effects of subsidence, changes in stream morphology, and flow.

Detailed data collection of the ten monitoring stations must take place quarterly (at least three times a year following the more frequent monitoring after the completion of subsidence.

Annual low level color infrared aerial photography must be completed (same time each year) in conjunction with regular aerial photography for subsidence monitoring.

Item 5:

Methods of access for transport of bentonite, and application to cracks must be described. Access must be limited to methods that would not cause additional effects to the aquatic ecosystem. The locations of cracks filled must be located using GPS with photographs and information regarding crack dimensions, and extent. If any alluvium/colluvium that supports vegetation, or aquatic organisms are disturbed or removed in the process the disturbances and effects must be photographed and documented.

Item 7:

The weekly and annual reports must also be sent to the Forest Service.

Vegetation Mitigation Plan for Mining Under Panels 3Left, 4Left in the East Fork of Box Canyon:

See comments in previous sections. Qualified botanists and wildlife biologists must conduct the monitoring of vegetation and aquatic ecosystems.

Monitoring of Cultural Resources Sites:

Requirements are being developed in accordance with the MOU and site-specific conditions.