

DEPARTMENT OF STATE LANDS



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ENVIRONMENTAL
QUALITY COUNCIL

September 25, 1992

Dear Reader:

Enclosed is a copy of the Final Environmental Assessment (FEA) prepared by the Department of State Lands. This FEA is for W. R. Grace's proposal to route Rainy Creek over the tailing instead of diverting around the tailing impoundment.

This FEA adopts the draft and provides responses to written and verbal comments received by the agencies on the draft Environmental Assessment (DEA). It is necessary to keep and use your DEA copy with this FEA in order to have a complete package.

Thank you for your time and effort in working with the issues through the environmental analysis process.

Sincerely,

Bob Winegar

Robert C. Winegar
Program Supervisor
Hard Rock Bureau
Reclamation Division

/etc

Enclosure

FINAL ENVIRONMENTAL ASSESSMENT

for

W. R. Grace
Vermiculite Mine Closure Plan
near Libby, MT

OPERATING PERMIT 00010

PREPARED BY:

DEPARTMENT OF STATE LANDS
HARD ROCK BUREAU
HELENA, MONTANA

PURSUANT TO THE NATIONAL AND
MONTANA ENVIRONMENTAL POLICY ACTS

September 25, 1992

**Responses to public and agency comments on the Draft Environmental Assessment
for closure of the vermiculite mine near Libby, Montana**

This Final Environmental Assessment adopts the Draft Environmental Assessment (DEA) completed August 19, 1992, for W. R. Grace & Company, Operating Permit 00010.

The following comments were received during a public meeting held September 3, 1992, in Libby, Montana. The comments also include those received by phone or written comments sent to Department of State Lands. Comments were received from Lincoln County officials, Department of Health and Environmental Sciences, W. R. Grace & Company, Kootenai National Forest, Department of Natural Resources and Conservation, Department of Fish, Wildlife and Parks, and letters and phone calls from concerned public in the Libby area.

1. **COMMENT:** Fish from Rainy Creek smell like diesel or kerosene. The source is obviously the tailing impoundment. Several reagents (chemicals) were dumped in the impoundment along with the tailing. What can be accomplished to mitigate this problem?

RESPONSE: The DSL has contacted the Water Quality Bureau and asked them to evaluate the proposed water quality monitoring program at the W. R. Grace site to detect effects of reagent use such as diesel. Diesel exists in the impoundment water and Total Hydrocarbon is currently monitored in area waters.

2. **COMMENT:** Samples and analysis must be made to address levels of asbestiform minerals on and along the public road along Rainy Creek. Control measures must be implemented to insure minimal health risk exposure from vehicle use along the road.

RESPONSE: Lincoln County Commissioners are monitoring the road asbestos exposure levels with W. R. Grace in 1992. Based on the results of the monitoring program, DSL will take appropriate action on the section of Rainy Creek road in the permit area. Please see the Environmental Assessment page 13, 40, and 60.

3. **COMMENT:** Treated timbers, asphalt shingles, and diesel tanks have been buried in the tailing material. Is this a hazard and does it constitute a violation of the burying of hazardous waste?

RESPONSE: Disposal activity requires compliance with applicable laws in effect at the time of the disposal. However, mining is excluded because permitting already is in place for mining activities including disposal of solid wastes on site. The original permit, approved January 31, 1972, allowed for solid waste disposal on site, "...in such a manner to prevent water

pollution or cause any deleterious affect upon the revegetation efforts. All applicable county, state and federal laws are being complied with." At this time there was very little regulation of waste dumping. In these early years almost anything could be dumped as long as it complied with the permit statement above.

Current waste disposal regulations (16.14.503 and 504 ARM) require Group II waste to be deposited in a Class I or II site. Group II wastes are inert solids and decomposable waste but not hazardous wastes. Group III wastes are only inert solids. The waste disposal site at W. R. Grace compares to a Class III site. The Department has determined that iron and steel wastes and treated timbers from the mine and mill can also be deposited in that site. The site is situated where the potential for water pollution is minimized. If any effects to the water are recognized and can be associated with the solid waste disposal, the language in the original permit would allow for enforcement which may mean excavation of the site to remove the problem material.

At present the Department has no indication that water quality problems have developed as a result of the waste disposal site. W. R. Grace has tested the asphalt shingles and other plant materials for asbestos, any materials < 1% asbestos can be buried at the disposal site, any materials > 1% must be disposed of at a Class II site. This has been complied with. Empty tanks and barrels have also been buried at the site and determined not to constitute a threat to water quality.

4. COMMENT: Who is responsible for the mine property, including mine, roads and impoundment after closure?

RESPONSE: W. R. Grace is the responsible party as owner of the property. DSL will be involved until the mining company has received bond release for successful reclamation of all surface disturbances. This includes the section of Rainy Creek road that is in the permit boundary. The Water Quality Bureau will be involved until the mining company's water quality monitoring indicates that water quality has met applicable standards. The Dam Safety Section of the Department of Natural Resources and Conservation will require W. R. Grace and any subsequent landowners to carry an operating permit because the impoundment and its associated flood routing structures are considered high hazard. See EA pages 9-11.

5. COMMENT: What are the stability and safety factor of the dam?

RESPONSE: Stability analysis of the dam was conducted under static (no earthquake forces) as well as seismic conditions. Factors of safety (FS) ranged from 1.30 for the seismic analysis to 2.28 for static conditions. These values are well within the parameters used by the US Army Corps of

Engineers and the MT Department of Natural Resources for their dam analyses, where a safety factor cut-off for static analysis is 1.5 for full pool (1.2 for rapid drawdown), and 1.0 for a seismic analysis. (Note: Factor of safety < 1.0 means failure is imminent. A factor of safety > 1.0 means failure is unlikely under the conditions analyzed.)

6. COMMENT: A larger Probable Maximum Flood (PMF) may occur from a rain-on-snow event rather than a thunderstorm event as used in the DEA.

RESPONSE: At DSL's request, W. R. Grace conducted an assessment of the flood resulting from a rain-on-snow event. The PMF resulting from a 72-hour rain-on-snow event in January preceded by a 3-day prestorm period of snowmelt produced a peak discharge of 3,704 cfs. The PMF used in the DEA was 11,676 cfs. The impoundment was found to safely pass the discharge from a 0.53 PMF rain-on-snow event through the 4 x 8 foot box culvert. The proposed emergency spillway would provide additional flood routing capacity.

7. COMMENT: Page 10 indicates W. R. Grace has applied to the Dam Safety Section for a hazard determination and classification. W. R. Grace turned in the form but not the \$125 application fee. W. R. Grace does not have to complete this application but must turn in their Emergency Action Plan.

RESPONSE: W.R. Grace must have a current and updated Emergency Action Plan on file with the Dam Safety Section of the MT Department of Natural Resources and Conservation as a condition of their dam operating permit. Because the dam qualifies for a high hazard classification, the application and fee are unnecessary.

8. COMMENT: Page 20 indicates a 9% grade for the outlet channel instead of the 4% stated.

RESPONSE: The 4% is the grade of the channel between the drop structures. Overall grade is 9%.

9. COMMENT: Page 21 paragraph 2 does not state what erosion protection would be added to the emergency spillway.

RESPONSE: The third paragraph states that the spillway would be "...armored with a minimum of 36 inches of well-graded rock rip-rap."

10. COMMENT: Page 28 states, "Dams in a series are not considered to be good engineering practice." What is the basis for this statement?

RESPONSE: The basis for the statement is grounded in professional observation. The successful performance of a system of multiple engineered

structures depends on the inter-action of the parts. The parts in themselves introduce more elements that may require repair, maintenance, and ultimately more cost. The proposed design minimizes upstream structures which reduce monitoring, costs and dependency on upstream dams.

11. COMMENT: Page 32 states, "An earthquake...would undoubtedly result in structural damage to the impoundment." "Would undoubtedly" should be changed to "could". Hebgen Lake dam had a large fault displacement directly under it along with several overtoppings from the 1959 earthquake event. The dam suffered very little damage.

RESPONSE: The DSL recognizes that the word choice between "undoubtedly would" and "could" does change the intent of the sentence. The comment is so noted. The context of the paragraph in which this sentence appears however, is meant to inform the reader that the seismic response of the dam has implications for the Dam Safety Section of the DNRC (and not for DSL) as they will have oversight for repair and maintenance in the event of a structurally damaging earthquake.

12. COMMENT: Page 32, same paragraph states, "The issue of seismicity and its effects on the closure plan have been dismissed by DSL..." The issue of seismicity was carried forward and not dismissed.

RESPONSE: The comment is correct. Page 44 - Flood Routing Alternatives and Environmental Consequences, discusses stability and seismicity. Page 32 should conclude that the issue of seismicity is resolved because stability can be demonstrated, not that it is dismissed.

13. COMMENT: Page 37, second paragraph, states "...storage capacity of 2120 acre-feet at the spillway crest." and page 36, third paragraph states "...871 acre-feet measured at the crest of the existing spillway." Please resolve the apparent conflict.

RESPONSE: The Foster 1981 report was for capacity of the entire facility for tailing and water. The W. R. Grace 1992 report of 871 acre feet is for water storage (flood waters) on top of the tailing.

14. COMMENT: Page 40, Section A, 1, a, should read, "The Lincoln County Board of County Commissioners is conducting the monitoring for W. R. Grace. The DHES Solid and Hazardous Waste Bureau will consider the results of the air monitoring in determining whether additional dust abatement procedures will be required in the future."

RESPONSE: DSL reported in error that the DHES Solid and Hazardous Waste Bureau was monitoring with the Lincoln County Commissioners.

15. COMMENT: Wetlands should be considered as an alternative in the impoundment closure plan.

RESPONSE: W. R. Grace has proposed a wetland as part of the reclamation plan. The wetland will provide wildlife use for moose as well as waterfowl. DSL and DSS are concerned about keeping the wetland back from the embankment as far as possible because of the high hazard status. The wetland will encompass 20 acres. See page 18 of the EA.

16. COMMENT: Public access for hunting and elk vulnerability should be addressed in the closure plan.

RESPONSE: The issue of public access and elk vulnerability on private patented mine claims are not part of the DSL's responsibility under the Metal Mine Reclamation Act. W. R. Grace has shown a desire to respond to public concerns about wildlife. The DSL suggests that the Department of Fish, Wildlife and Parks consult with W. R. Grace and set up a cooperative elk and deer management plan for the mine area. DSL can modify the seed mix and reclamation requirements to address needs identified in the cooperative plan for wildlife.

17. COMMENT: Erosion of the inlet channel, sedimentation from a high flow event, and Fleetwood Creek sedimentation and seepage should be addressed.

RESPONSE: Rainy Creek and Fleetwood Creek enter the impoundment area as high energy streams. The impoundment surface gradient will be less than 1% and the gradient of the inlet channel will be less than 0.5%. Erosion and sedimentation will be minimal as the impoundment surface is a depositional environment as long as the outlet structure and emergency spillway remain intact. DSL believes that W. R. Grace's plans for erosion and sediment control during construction, and DSS oversight in the maintenance and operating plan for the impoundment after construction is completed, will ensure problems with tailing erosion and sedimentation will be minimal.