



June 8, 2010

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By First-Class Mail and Electronic Mail to cyde@mt.gov

**RE: Objections and Request for Informal Conference
Savage Mine Permit Amendment Application (SMP 84002), Application 00185**

Dear Chris:

On behalf of Montana Environmental Information Center (“MEIC”) and Sierra Club, I respectfully request an informal conference pursuant to ARM 17.24.403 in connection with the application of Westmoreland Savage Corporation (“Applicant”) to amend Savage Mine Permit 84002. We will cooperate with the Department and the Applicant to determine a convenient time and location for the requested conference.

The reasons for the request are to gather more information about the hydrologic impacts of existing and proposed mine operations and to allow sufficient time to obtain review of the information by an expert hydrologist. While we appreciate the Department’s efforts to provide us with documents relevant to the pending application, we received most of the key supporting documents—including Appendix O (Probable Hydrologic Consequences) and Annual Hydrology Reports—only last week. Still, as described in the following objections, we lack information about the Savage Mine that is essential to an informed analysis of the impacts of the pending application.

The issues that MEIC and Sierra Club intend to raise at the conference are summarized below; however, MEIC and Sierra Club reserve the right to raise additional issues based on information obtained during the informal conference period.

MEIC and Sierra Club raise the following objections to the Savage Mine permit amendment application:

**I. GROUNDWATER CONTAMINATION AND POTENTIAL CONTAMINATION
IN THE MINING AREA PRECLUDE DEQ APPROVAL OF THE PERMIT
AMENDMENT APPLICATION**

Mining and waste disposal at the Savage Mine are contaminating groundwater in the mining area and likely also in adjacent areas. While inadequate monitoring conceals the extent of the problem, as described below, groundwater contamination is evident from the limited monitoring data available. Because the Savage Mine violates applicable state and federal

environmental laws, DEQ may not approve the proposed expansion. DEQ must first require the applicant to design and install a comprehensive groundwater monitoring system, identify and remediate the sources of existing contamination, and ensure that future operations will not pollute state waters.

A. The Montana Water Quality Act and Resource Conservation and Recovery Act

The Savage Mine operates in violation of the Montana Water Quality Act and the Resource Conservation and Recovery Act. The Montana Water Quality Act prohibits “pollution ... of any state waters” as well as the placement of wastes “where they will cause pollution of any state waters.” Mont. Code Ann. § 75-5-605(1)(a). “State waters” include groundwater. Id. § 75-5-103(33). Pollution is broadly defined as:

(i) contamination or other alteration of the physical, chemical, or biological properties of state waters that exceeds that permitted by Montana water quality standards ...; or

(ii) the discharge, seepage, drainage, infiltration, or flow of liquid, gaseous, solid, radioactive, or other substance into state water that will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, or welfare, to livestock, or to wild animals, birds, fish, or other wildlife.

Id. § 75-5-103(29)(a). The provisions of the Montana Water Quality Act expressly apply “to drainage or seepage ... from artificial, privately owned ponds or lagoons, if such drainage or seepage may reach other state waters in a condition which may pollute the other state waters.” Id. § 75-5-104.

The federal Resource Conservation and Recovery Act (“RCRA”) likewise applies to Savage Mine operations. RCRA forbids “open dumping” and the operation or establishment of an “open dump.” 42 U.S.C. § 6945(a). As required by statute, EPA has promulgated criteria defining solid waste management practices that constitute open dumping to ensure “no reasonable probability of adverse effects on health or the environment.” 42 U.S.C. § 6944(a); see 40 C.F.R. Parts 257 (criteria for solid waste disposal facilities). Those regulations prohibit contamination of any underground drinking water source beyond the solid waste boundary of a disposal site. 40 C.F.R. § 257.3-4(a). The definition of “underground drinking water source” includes any aquifer in which the groundwater contains less than 10,000 mg/l total dissolved solids, as is the case with groundwater underlying the Savage Mine. Id. § 257.3-4(c)(4).

Federal RCRA regulations define illegal open dumping as the disposal of solid waste that causes or contributes to the exceedance of the maximum contaminant level (“MCL”) for specified pollutants in groundwater. Id. § 257.3-4(c)(2). Among other constituents, the regulations prohibit MCL exceedances for arsenic, selenium, cadmium and other heavy metals that are typically found in coal and coal waste. 40 C.F.R. Part 257, App. I.

Under both the Montana Water Quality Act and RCRA, coal mining, processing, and waste disposal at the Savage Mine may not be permitted to pollute groundwater. As described below, Savage Mine operations currently violate these laws.

B. Extremely High Arsenic Levels Are Evident In Groundwater

Despite the applicant's assurances that groundwater quality in the permit area is high, monitoring data reveals dangerously high levels of arsenic in several monitoring wells. Arsenic is extremely toxic to wildlife and causes multiple forms of cancer in humans. Arsenic has been found to cause cancer of the liver, kidney, lung, and bladder, and an increased incidence of skin cancer in populations consuming drinking water high in inorganic arsenic.

In an outrageous understatement, the applicant noted in annual reports that "[a]rsenic continues to be a concern" in the mining area. See 2009 Annual Hydrology Report, Cover letter; 2008 Annual Hydrology Report, Cover letter. In at least one monitoring well within the Savage Mine permit area (well number 291), the applicant's own data shows arsenic levels more than 20 times higher than the federal maximum contaminant level. This contamination is a clear violation of the Montana Water Quality Act and RCRA. Notwithstanding consistently high levels of arsenic in several monitoring wells in the permit area, the permit application fails to even mention the contamination or its violation of state and federal environmental laws.¹

The application's omission of any discussion of arsenic contamination falls far short of the legal requirement that an application document measures sufficient to meet water quality performance standards, which include federal and state effluent standards and effluent limitations. See ARM 17.24.314(1), 17.24.633(4). Indeed, the application fails even to attach basic hydrologic information, such as maps displaying groundwater flow direction or background water quality data, that could allow DEQ or the public to determine or attempt to determine the source of the contamination.

Before DEQ may approve any application to expand operations at the Savage Mine, DEQ must require the applicant to identify and mitigate the source of the arsenic contamination in groundwater, and to demonstrate that mining and waste disposal may be conducted at the Savage Mine in a manner that maintains high quality ground and surface water.

C. Coal Processing Waste Stored at the Savage Mine is Likely Polluting Groundwater

Coal waste stored at Savage Mine from Lewis and Clark Station and the Holly Sugar Beet processing plant has significant potential to cause or contribute to groundwater pollution in and around the mining area. See App. at 156-57. The applicant reported that, each year until

¹ The applicant's annual hydrologic reports show high levels of arsenic in well numbers 106, 289, 290, and 291. Arsenic in well numbers 290 and 291 violate Montana's water quality standard and the federal maximum contaminant level for drinking water of .01 mg/L.

2005, it received approximately 1,200 tons of coal processing waste that has significant acid-forming potential. App. at 156-57. Coal waste consists of highly toxic compounds, including arsenic, cadmium, chromium, lead, mercury, selenium, and thallium. These substances can cause cancer, nervous system damage, and organ failure.

Coal processing waste is stored at the Savage Mine in an unlined pit. The only “special handling technique” for the waste is to place it above the groundwater spoil aquifer and below the plant rooting zone.² However, without adequate lining of the waste pit, placement of the waste above the groundwater aquifer is insufficient to prevent groundwater contamination. EPA’s April, 2010 Human and Ecological Risk Assessment of Coal Combustion Wastes concluded that only composite liners—high-density polyethylene (HDPE) membranes combined with either geosynthetic or natural clays—effectively reduce risks from all constituents to below risk criteria.³

Notwithstanding the significant potential for groundwater contamination due to leaching from the unlined storage pit, the applicant has not installed a groundwater monitoring system capable of detecting the contamination.⁴ Nor has the applicant taken any steps to prevent ongoing groundwater contamination by installing liners. DEQ must require these actions prior to approving any expansion of mine operations.

II. THE APPLICATION DOES NOT PROVIDE A “PLAN FOR PROTECTION OF THE HYDROLOGIC BALANCE”

The Savage Mine application is incomplete because it fails to comply with the requirement to provide “a detailed description ... of the measures to be taken during and after the proposed mining activities to minimize disturbance of the hydrologic balance on and off the mine plan area and to prevent material damage to the hydrologic balance outside the permit area.” ARM 17.24.314(1) (emphasis added). The application must describe measures to protect:

² Montana Dep’t of State Lands, Reclamation Division, Written Findings for Savage Mine Amendment/Revision Package, at 4 (Oct. 1991).

³ See U.S. Env’tl. Prot. Agency, Draft Human and Ecological Risk Assessment of Coal Combustion Wastes, at ES-4 (April 2010), available at <http://www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480ae585b>.

⁴ The applicant has also failed to address problems with existing monitoring wells. In October 2008, MVTL Laboratories documented obstructions that prevented testing in wells 261 and 263. Well 284 was dry. See 2008 Annual Hydrology Report. Likewise, in 2009, obstructions in monitoring wells 261 and 263 precluded sampling and well number 284 was dry. See 2009 Annual Hydrology Report. The obstructions in wells 261 and 263 should be immediately removed and monitoring resumed at these locations.

(a) the quality of surface and ground water systems, within both the proposed mine plan and adjacent areas, from the adverse effects of the proposed strip or underground mine operations;

(b) the rights of present users of surface and ground water; and

(c) the quantity of surface and ground water within both the proposed mine plan area and adjacent areas from adverse effects of the proposed mining activities, or to provide alternative sources of water in accordance with ARM 17.24.304 (5) and (6) , and 17.24.648, where the protection of quantity cannot be ensured.

Id.

Rather than providing a “detailed description” of protective measures, the application contains inaccurate and conclusory statements that are insufficient to form the basis for a permit amendment.

A. The Application Does Not Describe Measures to Protect the Quality of Surface and Ground Water

In response to the legal requirement that an application describe measures to protect surface and ground water quality, ARM 17.24.314(1)(a), the application asserts that “[c]oal has been mined at the Savage Mine since 1958 without material damage to the hydrologic balance of the Breezy Flat area and mining will continue in the future without adverse hydrologic impacts.” App. at 119; see also App. at D-4.

First, this unsupported statement is insufficient to constitute a “plan for protection of the hydrologic balance.” ARM 17.24.314. The applicant must demonstrate on the basis of robust monitoring and modeling that mining operations do not and will not affect ground and surface water quality.

Second, with respect to ground water quality, the applicant’s assurances that the hydrologic balance is not adversely impacted by mining operations is demonstrably false. As described above, the applicant’s own monitoring data reveal significant arsenic contamination of groundwater in the mining area. See supra; see also 2008 and 2009 Annual Hydrology Reports. The applicant also acknowledges that groundwater in the coal spoils is more acidic than pre-mining water quality, with pH values ranging from 6.3-7.0 in the spoils, as opposed to pH values of 6.4-7.7 in the coal aquifer. App. at D-4. Further, the applicant states that water in the coal spoils post-mining “will be approximately two to three times as mineralized as before mining.” App. at 123. A comprehensive groundwater monitoring network is required to understand the extent of current groundwater contamination and to detect future contamination due to mining and waste storage and disposal in the mining area. Because the application does not include measures to remediate existing ground water contamination and prevent future contamination, it cannot provide the basis for the proposed expansion of operations at the Savage Mine.

Third, with respect to surface water quality, the applicant has failed to demonstrate compliance with applicable performance standards. See ARM 17.24.633. Montana law requires that “[a]ll surface drainage from the disturbed area, including disturbed areas that have been graded, seeded, or planted, must be treated by the BTCA [Best Technology Currently Available] before leaving the permit area. Additional BTCA practices may be required after commencement of the operation if conditions arise that were not anticipated at the time of the permit application.” ARM 17.24.633(1). Measures to control surface water pollution from the Savage Mine currently include a series of sediment ponds. However, surface water quality monitoring is insufficient to demonstrate the effectiveness of these measures. Further, no new measures are described in the application to protect surface water quality from sediment run-off from the amendment area. The applicant must demonstrate that existing and proposed measures represent BTCA for the Savage Mine before DEQ may approve the proposed permit amendment.

B. The Application Does Not Describe Measures to Protect the Quantity of Surface and Ground Water

The application likewise disregards the requirement to provide a “detailed description ... of the measures to be taken” during and after mining to protect “the quantity of surface and ground water” within the mining area and adjacent areas. ARM 17.24.314(1)(c). While the application states that the water levels in most of the private wells in the region are insulated from possible mining, it does not describe mining impacts to surface and ground water quantities and measures to maintain pre-mining water levels. See App. at 119-120.

In fact, available information indicates significant present and projected disturbance to surface and ground water levels due to mining. The application states that “[d]uring mining[,] the total surface water run-off from the permit area will be reduced as flows are detained in sediment ponds and lost to infiltration or evaporation and used for haulroad watering.” App. at 123. In addition, [b]oth total and peak run-off volumes will be reduced in the post-mining phase versus pre-mining by as much as 37% for the 10yr/2hr event.” Id. Rather than describing protective measures, as required by ARM 17.24.314(1)(c), the application seeks to minimize the issue by comparing the surface water flow in the mining area to the volume of water in the Yellowstone River. See App. at 123. However, the law does not contain a “drop-in-the-bucket” exception to legal requirements.

With respect to ground water, the applicant states in Appendix D that water levels in the coal spoils are likely suppressed due to upgradient pumping. App. at D-3. The application further states that “the spoils will probably not constitute a dependable groundwater supply in the post-mining setting.” Id.

In light of these apparent ongoing and post-mining impacts to surface and ground water quantity, the application must describe measures to protect water levels in the mining and adjacent areas. ARM 17.24.314(1)(c). The application’s omission of these essential measures renders it insufficient to support the proposed expansion of the Savage Mine.

III. THE RECLAMATION PLAN IS INADEQUATE

The Savage Mine reclamation plan does not pass legal muster. Montana law requires that a reclamation plan include “a description of postmining drainage basin reclamation that ensures protection of the hydrologic balance, achievement of postmining land use performance standards, and prevention of material damage to the hydrologic balance in adjacent areas.” ARM 17.24.313(1)(e). The reclamation plan fails entirely to provide these assurances.

The application includes a chart that compares pre-mining and post-mining (i.e., post-reclamation) characteristics, including drainage density, for each drainage basin within the mining area. See App. at 94; see ARM 17.24.313(1)(e)(i) (requirement to compare pre- and post-mining drainage basin characteristics). That chart identifies significant discrepancies between pre-mining conditions and the conditions that the applicant proposes to create through reclamation. However, the application provides no explanation of why the pre-mining topography and drainage basin characteristics may not be restored through reclamation. Without a demonstration that restoration of the area’s original topography is unachievable and/or that the proposed reclamation is sufficient to restore pre-mining drainage basin characteristics, the reclamation plan is insufficient. See ARM 17.24.313(1)(e), 17.24.634(1).

The reclamation plan must also contain “a discussion of how, within drainage basins, the plan meets each performance standard in ARM 17.24.634.” ARM 17.24.313(1)(e)(ii)(A). Performance standards require that reclaimed drainage basins be constructed to:

- (a) comply with the postmining topography map required by ARM 17.24.313(1) (d) (iv) and approved by the department;
- (b) approximate original contour;
- (c) an appropriate geomorphic habit or characteristic pattern consistent with 82-4-231 (10) (k) , MCA;
- (d) allow the drainage channel to remain in dynamic equilibrium with the drainage basin system without the use of artificial structural controls unless approved by the department;
- (e) provide separation of flow between adjacent drainages and safely pass the runoff from a six-hour precipitation event with a 100-year recurrence interval, or larger event as specified by the department;
- (f) provide for the long-term relative stability of the landscape. The term "relative" refers to a condition comparable to an unmined landscape with similar climate, topography, vegetation and land use;
- (g) provide an average channel gradient that exhibits a concave longitudinal profile;

(h) establish or restore a diversity of habitats that are consistent with the approved postmining land use, and restore, enhance where practicable, or maintain natural riparian vegetation as necessary to comply with ARM subchapter 7; and

(i) exhibit dimensions and characteristics that will blend with the undisturbed drainage system above and below the area to be reclaimed and that will accommodate the approved revegetation and postmining land use requirements.

ARM 17.24.634(1). Instead of the required “discussion of how” these performance standards will be met, the application simply states that they “will” be met. See App. at 94, 179-80. Unsupported assertions that reclamation will be adequate are insufficient to satisfy regulatory requirements designed to ensure that mining will not inalterably destroy the hydrologic function of the mining area.

In fact, the reclamation plan does not appear designed to restore pre-mining hydrologic characteristics. The reclamation plan proposes to replace pre-mining springs, seeps, and depressions that were present in the area with the “wetland feature in the bottom of the Middle Impoundment area” and sediment ponds left from mining operations. App. at 107. However, all of the sediment ponds described in the application (North Pond Nos. 1-3, the Tipple Pond, South Pond Nos. 1-4) are designed to be temporary and are slated for removal once mining operations are complete. See App. at 134-38. The applicant may not have it both ways; it must either establish a reclamation plan to replace pre-mining water features, or if the applicant wishes to retain sediment ponds for this purpose, it must comply with regulatory requirements for permanent impoundments. Further, the reclamation plan must analyze and disclose the hydrological and ecological effectiveness of replacing natural water features with the Middle Impoundment and sediment ponds.

The reclamation plan also fails to identify a geologic replacement for the coal aquifer that is capable of similar hydrologic function. Instead, the application simply states that “[i]n the areas to be mined the lignite aquifer will be removed and replaced by a saturated zone at the base of the spoils.” App. at 123. Absent a demonstration that the “saturated zone” will restore the area’s pre-mining hydrologic function, the applicant’s proposal is inadequate.

Finally, the reclamation plan does not identify any steps to replace groundwater altered or contaminated by mining operations. As describe above, groundwater is acidified and contaminated with arsenic (and likely other constituents) due to current mining and waste storage. Even after the proposed reclamation is complete, the applicant estimates that “[w]ater in the spoils,” i.e., the “saturated zone” that will replace the coal aquifer, “will be approximately two to three times as mineralized as before mining with a TDS ranging from about 1500 to 3000 mg/l.” App. at 123. Reclamation requires restoration to pre-mining hydrologic conditions. Accordingly, groundwater must be pumped and treated or replaced with groundwater that approximates or exceeds pre-mining water quality.

The permit amendment may not be approved until the applicant develops and DEQ approves a reclamation plan that satisfies regulatory requirements. Further, DEQ must require

the applicant to post a reclamation bond sufficient to cover the costs of these intensive restoration activities.⁵

IV. THE APPLICATION FAILS TO DEMONSTRATE THAT MINING WILL NOT OCCUR IN OR ADJACENT TO AN ALLUVIAL VALLEY FLOOR

Montana law is clear that the applicant bears the burden of “demonstrat[ing] ... based on available data, or field studies submitted by the applicant, or a combination thereof, the presence or absence of an alluvial valley floor.” ARM 17.24.325(1). The demonstration must be based on “sufficiently detailed geologic, hydrologic, land use, soils, and vegetation data and data analyses to demonstrate the presence or absence of an alluvial valley floor in the area.” Id.

The application omits the required analysis. Instead, the application includes a grand total of one sentence devoted to the topic: “As has been stated in previous permit applications with the concurrence of the Department, no operations at the Savage Mine will be conducted in, adjacent to, or under an alluvial valley floor.” App. at 148. The applicant’s previous “state[ments],” even with DEQ’s concurrence, do not meet the applicant’s regulatory burden. Further, DEQ’s concurrence with the applicant’s determination that no alluvial valley floor exists in or adjacent to the current permit area does not satisfy the applicant’s burden with respect to the areas that the applicant proposes to add with the pending permit amendment application.

The applicant must provide the requisite analysis to demonstrate the presence or absence of an alluvial valley floor in or adjacent to the permit area, including the amendment area, before any permit amendment may be approved.

V. DEQ MUST PREPARE AN EIS TO ANALYZE THE IMPACTS OF THE SAVAGE MINE

DEQ must prepare an environmental impact statement (“EIS”) to analyze impacts of the Savage Mine expansion. MEPA requires “the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking that may have an impact on the human environment.” Mont. Code Ann. § 75-1-201(1)(b)(i)(A) (emphasis added). To that end, the state must prepare an EIS for any “major action[] of state government significantly affecting the quality of the human environment.” Id. § 75-1-201(1)(b)(iv). The EIS must describe “(A) the environmental impact of the proposed action; (B) any adverse environmental effects that cannot be avoided if the proposal is implemented; [and] (C) alternatives to the proposed action.” Id. An EIS is required for the proposed Savage Mine permit amendment because, as evidenced by the significant, unmitigated impacts of current mining and waste storage operations, the expansion may have significant environmental impacts.

In the past, DEQ has relied on environmental analysis (“EA”) documents, rather than EISs for proposed mine expansions. The last EA performed for a Savage Mine permit

⁵ The applicant’s current bond does not include any allocation for restoration of hydrologic features. See App. at 72-85. DEQ must require the applicant to provide bonding sufficient to cover post-mining hydrologic restoration, which could be a significant expense.

amendment—in June 1991—included 4 pages describing the environmental impacts of the proposed amendment and a single paragraph discussing potential groundwater quality and quantity impacts. The EA assumed no significant groundwater impacts would occur because “[t]he present operation has had minor effects on nearby groundwater in the Pust lignite aquifer.”⁶ The inaccuracy of this statement highlights the need for an EIS to more thoroughly analyze the impacts of mining and measures that might be taken to mitigate or avoid those impacts.

Should DEQ prepare an EA, rather than an EIS, MEIC and Sierra Club request that a draft EA be circulated for public comment prior to DEQ’s acceptability determination on the permit amendment application.

VI. CONCLUSION

For the reasons described above, MEIC and Sierra Club respectfully urge DEQ to deny the Savage Mine permit amendment until the applicant demonstrates full compliance with state and federal laws. We look forward to hearing from the Department to schedule an informal conference to address these issues in the near future.

Sincerely yours,



Jenny Harbine

⁶ Mont. Dep’t of State Lands, Environmental Assessment on the Proposed Amendment to the Mining and Reclamation Plan for Knife River Coal Mining Company, Savage Mine, at 10 (June 1991).