

# ENVIRONMENTAL ASSESSMENT

**Project Name:** Yates **Proposed Implementation Date:** November 1, 2000

**Proponent:** Stillwater Mining Company

**Type and Purpose of Action:** Stillwater Mining Company (SMC) proposes to mine and crush 70,000 yards of gravel from a 9.19-acre site in two stages. The product would be used for two road projects in the East Boulder Valley over the next 5 years. Mining would occur to a depth of 20 feet on a terrace above the East Boulder River. Approximately half of the site would be opened this fall or spring to commence crushing operations. This material would be used during the next 1½ years, after which concurrent reclamation would occur. The second stage would begin in 2 or 3 years when construction of the Hill Route Road would begin. The intersection of the haul road and the East Boulder Road would not be reclaimed because it would tie into the proposed Hill Route. The remainder of the site would be reclaimed as pasture by the Spring of 2007.

**Location:** NW of the NW of Sec 21 T3S R13E **County:** Sweetgrass

**N = Not present or No Impact will occur.**

**Y = Impacts may occur (explain under Potential Impacts).**

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
<p><b>1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:</b> Are fragile, compactible or unstable soils present? Are there unusual geologic features? Are there special reclamation considerations?</p>	<p>[ N] The site is located on a Recent alluvial/colluvial terrace above the East Boulder River. Elevational change is 30 feet from the west side along the Mason Ditch down to the northwest corner by the former Yates property.</p> <p>The topsoil averages 1 foot deep, and overlays from 1 to 6 feet of clayey to sandy clay subsoil or overburden. Gravels range from 2 feet below ground surface to more than 18 feet. A moist to wet silt horizon was contacted below the gravels. The silt averaged 12 feet below the surface along the eastern bench, and ranged from 16 to 20 feet in test pits on the western boundary. This silt layer was moist and continuous under the site and acts to inhibit the downward flow of water.</p> <p>The topsoil would be picked up and stockpiled separately, as would the subsoils and overburden. Some of the overburden would be used as binder in the road mix. At reclamation oversized materials would be buried; then overburden, subsoil and topsoil would be laid back in that order. Because of the staged operation and concurrent reclamation no more than 60 percent of the site would be disturbed at any time.</p> <p>The southern portion of the haul road would remain to connect the East Boulder Road to the Hill Route, a planned new road. If the Hill Route is not constructed the entire haul road would be reclaimed.</p> <p>Annual precipitation is about 20 inches and is well distributed throughout the year. The site gets good snow cover most years.</p> <p>This site should reclaim very nicely.</p>
<p><b>2. WATER QUALITY, QUANTITY AND DISTRIBUTION:</b> Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?</p>	<p>[ N] The East Boulder River runs from south to north between 200 and 500 feet east of the gravel site and about 30 feet in elevation below it. The East Boulder Road separates the two. The Mason Ditch traverses the hillside about 30 feet above the site and 225 to 525 feet to the west. The Mason Ditch provides irrigation water to the terrace and other lands downstream.</p> <p>The site would be designed to drain internally during operations. Final reclamation contours would slope to the north, possibly with a shallow depression for short-term retention. This would protect the East Boulder River from runoff.</p> <p>The water level of the Yates well, 200 feet to the north of the site, was measured in July, 2000 at an elevation of 5362 feet, which is about 20 feet below the elevation of</p>

	<p>the East Boulder River. The Amadon well lies directly across the East Boulder River from the site at about 5400 feet in elevation. These wells are developed in the present river gravels. Driller's notes are not available for these wells. Both wells are below the silt layer that acts as an aquitard at the gravel site, and would not be affected by this project.</p> <p>When the test pits were dug in May, 2000, no groundwater was intercepted. On June 7, after the Mason Ditch was turned on, pits TP2 and TP6 had water 10 feet below ground surface. By the end of June this water had dissipated. If the water in TP2 and TP6 were indicative of the general groundwater elevation on the bench, then more, or all, of the pits should have been wet at all three times.</p> <p>The source of the groundwater in this restricted area was probably the Mason Ditch. SMC would be able to control ditch seepage by timing the operations before or after turning in water, by ditch maintenance, by lining a portion of the ditch, or by containing the water in a sump within the pit. Because the Mason Ditch has been running for some time and water has not reappeared, its occurrence is assumed to be anomalous.</p> <p>There is no indication that off site impacts to groundwater would occur. Neither the Yates nor Amadon wells would be affected.</p>
<p><b>3. AIR QUALITY:</b> Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?</p>	<p>[ Y ] No designated Class I airshed exists in the area. The Absaroka-Beartooth Wilderness area located several miles to the south is a Class II airshed. The Air and Waste Management Bureau of the MtDEQ regulate dust from the site, road construction and the crusher. A water truck would be available for dust control on-site and for road construction. The crusher is equipped with sprayer nozzles to suppress emissions from its operations.</p>
<p><b>4. VEGETATION COVER, QUANTITY AND QUALITY:</b> Will vegetative communities be permanently altered? Are any rare plants or cover types present?</p>	<p>[ N ] The site is presently used as irrigated pasture and hay land. It has 100 percent coverage consisting mainly of timothy, orchard grass, brome, and clover. The dryland fringe area on the east and north is vegetated with wheatgrasses, fescues, forbes and sagebrush.</p> <p>No noxious weeds were seen on site; the county-approved weed control plan would control or eliminate any weeds that should invade the site.</p> <p>No rare species or cover types were found during a field inspection, and none were reported in an NRIS search.</p> <p>Good reclamation would be achieved with the proposed seed mix, rate and methods of application.</p>
<p><b>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:</b> Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[ N ] Deer, coyotes, small mammals, raptors and other wildlife utilize this area regularly. Because of its proximity to the national forest elk and other forest species traverse the site.</p> <p>Mining and reclamation of this site would have negligible impact on wildlife because of the short term disturbance and small acreage. However, a small portion of the haul road would remain where the Hill Route would intersect the East Boulder Road. Because of the long term usage and the amount of traffic that is projected for this route, wildlife would probably modify their pre-road habits. Deer and other "regulars" would still use the northern two-thirds of the site, but the transients, such as elk, would probably divert their routes to the west above the Mason Ditch.</p>
<p><b>6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:</b> Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?</p>	<p>[ N ] No wetlands are present on the site. No species of special concern are present.</p> <p>The Montana Natural Heritage Program has no listings for the site but does list two species in the area. A statewide listing for the lynx was reported during a literature search, but neither this site nor the Hill Route, contain suitable habitat for this species. Suitable habitat is considered mature or old-growth forest with a well-developed understory.</p> <p>The other species which the Forest Service ranks as Sensitive, is the Yellowstone Cutthroat Trout whose habitat includes the East Boulder River. This project would not impact the East Boulder River so no impact would occur to the trout.</p>

<p><b>7. HISTORICAL AND ARCHAEOLOGICAL SITES:</b> Are any historical, archaeological or paleontological resources present?</p>	<p>[ N ] During a Class III inventory that included both a literature search and a field survey, an obsidian flake was found. No other evidence was discovered to indicate that any surface or subsurface cultural resources exist on site. If some resource were discovered, the State Historical Preservation Office would be notified immediately, and operations would be shifted to another area for a reasonable time period to allow for assessment of the new find.</p>
<p><b>8. AESTHETICS:</b> Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?</p>	<p>[ N ] The site is located on a bench generally 30 feet above the East Boulder Road and is not visible from that road, except at the south end of the site. Vegetated berms would be used to create a sight and sound barrier for this traffic. Although effective in reducing impacts, these berms must be placed to allow for sufficient line of sight at the intersection so that a traffic hazard is not created.</p> <p>The pit would be set back 12 feet from the east edge of the bench. The crusher and stockpiles would be set in the bottom of the pit. By using the set back and recessed facilities, impacts to the residents across the river should be greatly reduced, although they would not be eliminated.</p> <p>SMC has also committed to operating this pit between the hours of 7:00 am to 5:30 PM Monday through Friday. The crusher would be further restricted to operating between 9:00 am to 5:30 PM, Monday through Friday, for 90 days or less during the construction season. On rare occasions these hours may be extended in an emergency situation. The local landowner and DEQ would be notified of this situation.</p> <p>The Hill Route bypasses about 7 miles of the East Boulder Road. Its construction would greatly reduce the impacts of noise, light and other annoyances created by the present mine traffic on the East Boulder Road.</p>
<p><b>9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:</b> Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?</p>	<p>[ N ] Product from Phase I would be used primarily for upgrading 7 miles of the East Boulder Road, but also for topdressing Forest Service road FS 205.</p> <p>Product from Phase II of this project would be used for construction of the Hill Route road, if or when that project is submitted to and approved by the Forest Service and the Environmental Management Bureau of DEQ.</p> <p>The timing of the full development of this project and its ultimate reclamation could be dependent on the Hill Route Project.</p>
<p><b>10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:</b> Are there other studies, plans or projects on this tract?</p>	<p>[ N ]</p>

<p align="center"><b>IMPACTS ON THE HUMAN POPULATION</b></p>	
<p align="center"><b>RESOURCE</b></p>	<p align="center"><b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b></p>
<p><b>11. HUMAN HEALTH AND SAFETY:</b> Will this project add to health and safety risks in the area?</p>	<p>[ N ] During the times when SMC is hauling out of the pit, truck traffic on the East Boulder Road and Forest Service road FS 205 could create a minor increase in the safety risk. Upgrading the East Boulder Road would tend to reduce traffic hazards. Construction of the Hill Route for mine traffic would greatly reduce the safety risk for local residents.</p> <p>The air quality standards that must be met during the life of a gravel pit operation are set at a level that protects human health.</p>
<p><b>12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:</b> Will the project add to or alter these activities?</p>	<p>[ N ] The site would be taken out of hay land production for the life of the project.</p>
<p><b>13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:</b> Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[ N ] This is a new operation and would create some new temporary employment opportunities.</p>

<b>14. LOCAL AND STATE TAX BASE AND TAX REVENUES:</b> Will the project create or eliminate tax revenue?	[ N ] This project is not of sufficient size to affect the tax base. The temporary jobs created would minimally increase payroll and income taxes.
<b>15. DEMAND FOR GOVERNMENT SERVICES:</b> Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed?	[ N ] Truck traffic generated by this project would impact local residents during construction activity and could be annoying to the public, but it would not be dangerous or overburden the county's infrastructure. Rebuilding the East Boulder Road and FS 205 is required of SMC in its operating permit to mitigate costs to local government due to road deterioration from increased traffic load.
<b>16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:</b> Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[ N ] SMC is operating its platinum-palladium mine under an operating permit approved by the Forest Service and the Mt DEQ. No local zoning regulations are in effect in this area. National forest lands are managed under the approved US Forest Service management plan.
<b>17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:</b> Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[ N ] The recreational potential of this site is low because it is private ground. Impacts are not anticipated. Recreation in adjacent forest lands and along the East Boulder River would not be impacted.
<b>18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:</b> Will the project add to the population and require additional housing?	[ N ] Although the housing market is tight in Big Timber and Sweetgrass County, only temporary jobs would be created by this project. No additional housing demand would be generated.
<b>19. SOCIAL STRUCTURES AND MORES:</b> Is some disruption of native or traditional lifestyles or communities possible?	[ N ]
<b>20. CULTURAL UNIQUENESS AND DIVERSITY:</b> Will the action cause a shift in some unique quality of the area?	[ N ]
<b>21. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:</b>	[ N ]

**22. Alternatives Considered:**

Alternative I: Alternate location of the site. Another pit location could be farther from the proposed use sites of the product, and thus would increase transportation costs and risks unnecessarily from this alternative.

Alternative II: Denial. This alternative would result in denying the use of a resource to the landowner.

**23. Public Involvement, Agencies, Groups or Individuals contacted:** Montana Natural Heritage Program, State Historic Preservation Office, Sweetgrass County Weed Control District,

**24. Other Governmental Agencies with Jurisdiction, List of Permits Needed:** Mine Safety & Health Administration for safety permit; Montana Department of Labor & Industry, Bureau of Safety for safety permit; MtDEQ Air and Waste Management Bureau for air quality permits,

**25. Magnitude and Significance of Potential Impacts:** Impacts are unlikely to be significant on the general environment because of the small area of disturbance and the short duration of the project.

**26. Regulatory Impact on Private Property:** The analysis conducted in response to the Private Property Assessment Act indicates no impact.

**Recommendation for Further Environmental Analysis:**

EIS                       More Detailed EA                       No Further Analysis

EA Prepared By: Jo Stephen                      Title: Reclamation Specialist

Approved By: Jerry Burke                      Title: Opencut Mining Program Supervisor, IEMB

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Signature

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Date