CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name: Hanson Site **Proposed Implementation Date:** 9/1/96
Proponent: Mickelson Rock Products, LLC
Type and Purpose of Action: The applicant proposes to mine, crush, stockpile and transport 100,000 cubic yards of sand and gravel from a 10.3 acre pit located 4 miles northwest of the town of Missoula. The pit has been in operation since 8/94 without a permit and will result in a pit no deeper than 30 feet. The pit will be reclaimed to grassland after grading the slopes to at least a 3:1, replacing all topsoil and re-seeding.
Location: NW¼ SE¼ Sec. 27, T14N, R20W **County:** Missoula

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**
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are fragile, compactible or unstable soils present? Are there unusual geologic features? Are there special reclamation considerations?	[Y] The proposed mine is located in a glacial outwash plain that was last inundated by Lake Missoula 10,000 years ago. The deposit consists of stratified layers of alluvium and glacial outwash sand, gravel and cobbles that cover the deeper bedrock. The land is rolling foothills which lies above the confluence of the Bitterroot and Clark Fork rivers. The tract is gravelly and is fairly well drained. The Bitterroot and Clark Fork Rivers occupy the broad, flat Missoula Valley which was caused by a down-dropped fault block between the rocks of the Bitterroot and Coeur D'alene Mountains to the west and the Sapphire Range to the east. The 70 to 90 million year old Cretaceous granitic rocks of the Bitterroot Mountains and the 800 million to 1.2 billion year old Precambrian rock of the Missoula group Belt Series argillites and quartzites of the Sapphire Mountain Range were sculpted into their present profiles by alpine glaciers. The billion year old Precambrian rock of the Belt Series sandstone and limestone rocks surround the deposit in towering walls sculpted by alpine glaciers. Up to eight inches of fairly well drained, fine silty loam topsoil which overlies the glacial sands and gravels. Local terrace slopes demonstrate reasonable stability, and ripping after activities are complete should alleviate soil compaction. All soil material will be salvaged and stockpiled away from the affected land. Topsoil has been saved and replaced in areas where previous mining has occurred. Following mining, grading and ripping, the soils will be replaced, disked and seeded to stabilize the soil and prevent erosion. Microbes are expected to re-colonize the soils.

2. WATER QUALITY, QUANTITY AND DISTRIBUTION: 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?	[N] The nearest pre-mining surface water is Butler Creek located one mile to the east which will not be impacted directly by mining. The site will be mined to a depth of 30 feet which will be considerably above the groundwater in the area. Precautions will be taken to minimize possible contamination of the groundwater. All fuel and bulk lubricants will be kept within a lined, earthen-bermed fueling location. Any accidental spills or leaks from equipment will be excavated and disposed of. No waste or trash will be disposed of at the site. With these precautions, the quality and quantity of the groundwater should not be adversely impacted.
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?	[Y] Air quality will be degraded and there will be an increase in particulate matter. Crushers, screens and trucking equipment typically cause dusty conditions in disturbed soil sites. Crushers, screens and trucking equipment typically cause dusty conditions in disturbed soil sites. Applicable federal regulations for air quality which are implemented by the state are the Standards of Performance for New Stationary Sources, 40 CFR Part 60, Subpart OOO (Nonmetallic Mineral Processing Plants). Subpart OOO sets an opacity limitation on fugitive dust emissions from the gravel crushing and handling operations.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be permanently altered? Are any rare plants or cover types present?	[Y] There are no known rare or sensitive plants in the area. No mining will be done within 100 feet of any live stream, riparian or isolated wetland habitat areas. Native vegetation consists of fescue, sage and knapweed which lie on a southwest facing slope. Vegetation covers 90% of the ground and will be removed and planted with species compatible with the proposed reclaimed use. Some native seed will remain viable in the salvaged topsoil and will re-generate. There is a moderate infestation of spotted knapweed, a legally defined noxious weed.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	[N] Although the area is used primarily for grazing, it is also supports populations of deer, mountain lion, rodents, song birds, coyotes, insects and various other animal species. Population numbers for these species is not known. The proposed mine is not expected to significantly degrade wildlife populations. The Natural Heritage Program literature search and site evaluations have not revealed any other endangered or threatened plant or animal species on site that would be significantly impacted. Seed head gall flies have been introduced to the tract to provide biological control of noxious weeds.
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	[N] The Natural Heritage Program and site evaluations have not revealed any endangered or threatened plant or animal species that would be directly affected. Bald eagles are known to range all along the Clark Fork River Valley, but no nesting sites are known on or near the proposed permit area. No adverse effects are anticipated on the eagles as a result of this proposed action.

7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	[N] Although there are important cultural values in the general area, much of this site has been previously disturbed by modern man, thus destroying the integrity of resources that may have existed. A surface reconnaissance did not discover any cultural, historical or archeological resources. The operator will give appropriate protection to any values or artifacts discovered in the affected area. If significant resources are found, the operation will be routed around the site of discovery for a reasonable time until salvage can be conducted. The State Historical Preservation Office will be promptly notified.
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	[Y] The site is located in a scenic, but not unique area. There will be a temporary deterioration of aesthetics while the operation is under way. However, reclamation will return the area to a visually acceptable landscape. There is and has been an alteration of the viewshed as a result of this existing and other historical sand and gravel mines. The site is visible by homes in the local area and to traffic along Interstate 90. Floodlights from dark period operations increase visibility and awareness of the operation. Noise levels are generally within the range of 60 to 90 decibels measured on-site, decreasing with distance. As a comparison, sound levels for ordinary activities such as close conversation at 60 decibels and music from a radio at 70 decibels are considered to be moderate. Levels above 90 decibels are severe, and prolonged exposure can lead to hearing loss. Because the crusher and other noise generating equipment would be located in the bottom of the excavation which is back into the hillside, effects from noise and light would be reduced. There is also noise from truck traffic hauling to various projects. These impacts are intermittent and of relatively short duration. There is a temporary deterioration of aesthetics while the operation is under way. Traffic along the Interstate will be able to see the haul road.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?	[N]
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other studies, plans or projects on this tract?	[N]

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	**[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES**
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[Y] Heavy equipment and facilities including trucks, loaders and crushers will create hazards, but the operator must comply with all MSHA and OSHA regulations. The operator will employ proper precautions to avoid accidents. The approval of this permit would slightly increase the rate and volumes of traffic along Butler Creek Road. The operator currently complies with all MSHA

	and OSHA regulations regarding heavy equipment and facilities including crushers, trucks and loaders.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[Y] The acreage listed in the Type and purpose of Action will be taken out of agricultural/grazing and put into industrial/commercial use. Upon completion of mining, the land will be returned to its previous use.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	[N]
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	[N]
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed?	[Y] The operation will require periodic site evaluations by DEQ staff until such time as the site is successfully reclaimed to the required post-mining use. However, these evaluations are usually performed in conjunction with other area operations.
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[Y] City/County zoning clearance has been obtained.
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[N]
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N]
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N]
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]
21. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N]

22. Alternatives Considered:

1. Denial: Pit would not be permitted and impacts would not occur at this location. The owner of the gravel resource would be denied full utilization of his property at this time.
2. Approval of the permit with mitigating conditions: The Plan of Operation has been written with mitigating conditions. Mitigation measures include water protection and fuel containment.

23. Public Involvement, Agencies, Groups or Individuals contacted:
State Historic Preservation Office, Montana Heritage Program, County Weed Control District, County Commissioners for zoning.

24. Other Governmental Agencies with Jurisdiction, List of Permits Needed:
Montana Department of Environmental Quality for Air Quality Permit; Mine Safety and Health Administration for safety permit; Montana Department of Labor & Industry, Bureau of Safety for safety permit; Air Quality Division for crusher permit.

25. Magnitude and Significance of Potential Impacts: Impacts are unlikely to be significant on the general environment because of the size and location of the project. There are no residential areas affected and there are no unique wildlife or habitats nearby.

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 [X] No Further Analysis

EA Checklist Prepared By:	Rod Samdahl **Name**	Reclamation Specialist **Title**
Approved By:	_____ **Name**	_____ **Title**
	_____ **Signature**	_____ **Date**

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