

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name: Haffner site Proposed Implementation Date: April 1, 1996
 Proponent: Industrial Services Company of the Rockies, Inc.
 Type and Purpose of Action: The applicant proposes to mine, and transport 50,000 cubic yards of sand and gravel from a 5 acre pit located 5 miles west of the town of Missoula. The estimated start-up date is April 1, 1996 and will result in a pit no deeper than 15 feet. The pit will be reclaimed to farmland after grading the slopes to at least a 5:1, replacing all topsoil and seeding with crops.
 Location: NW¼ NW¼ Section 28, 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?	<p>[Y] The proposed mine is located on a glacial outwash plain that was last inundated by Lake Missoula 10,000 years ago. The deposit consists of stratified layers of sand, gravel and cobbles that cover the deeper bedrock. The area is rolling agricultural land in a river valley six miles north of the confluence of the Bitterroot and Clark Fork rivers.</p> <p>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.</p> <p>Up to 18 inches of fairly well drained, dark clay loam topsoil overlies the glacial sands and gravels. Local terrace slopes demonstrate reasonably good stability, and ripping after activities are complete should alleviate soil compaction. All soil material will be salvaged and stockpiled away from the affected land. Following mining, grading and ripping, the overburden (if any) and soils will be replaced, disked and seeded to crops to stabilize the soil and prevent erosion. The overburden has exhibited the ability to support vegetative growth. Microbes are expected to re-colonize the soil due to the relatively short time that soils will be in stockpiles.</p>

<p>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?</p>	<p>[N] The nearest pre-mining surface water is an irrigation canal located one mile to the southwest, and the Clark Fork River located 3 miles to the southwest which will not be impacted by mining. The site will be mined to a depth of 15 feet which is well above the local groundwater, estimated to be 80 feet below the surface.</p> <p>Groundwater is deep in the area, and the sands and gravels display only fair permeability. There are 33 water wells in section 28 that range from 110 to 630 feet in depth. Their yields range from only 10 to 50 gallons per minute, demonstrating that wells are deep and yield sluggishly for the depth.</p> <p>Special precautions will be taken to minimize possible contamination of the groundwater. All fuel and bulk lubricants will be kept out of the pit except that which is contained in mobile equipment. 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.</p>
<p>3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?</p>	<p>[Y] Air quality will be degraded and there will be an increase in particulate matter. Loaders and trucking equipment typically cause dusty conditions in disturbed soil sites. Road watering and other dust controls will be used as necessary.</p>
<p>4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be permanently altered? Are any rare plants or cover types present?</p>	<p>[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. Vegetation consists of wheat crop and some native grasses which lie on a south facing slope. Vegetation covers 70% of the ground and will be removed and planted with crops.</p>
<p>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[N] Although the area is used primarily for farming, it also supports populations of whitetail deer, rodents, song birds, coyotes, insects and various other animal species. Population numbers for these species is not known.</p> <p>Human use of the area has intensified in the past two decades with the increase in residential and commercial activity. 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.</p>

<p>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?</p>	<p>[N] The Natural Heritage Program and site evaluations have not revealed any endangered or threatened plant or animal species that would be directly affected.</p>
<p>7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?</p>	<p>[N] Although there are important cultural values in the general area, 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.</p>
<p>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?</p>	<p>[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.</p> <p>There is and has been an alteration of the viewshed as a result of residential and commercial development in the area. The site is visible by homes in the local area and to traffic along Deschamps and Pulp Mill Roads. However, reclamation will return the area to a visually acceptable landscape.</p> <p>Noise will not increase from present levels when equipment is active. 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.</p> <p>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.</p>
<p>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?</p>	<p>[N]</p>

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 and loaders will create hazards, but the operator must comply with all MSHA and OSHA regulations. The operator will employ proper precautions to avoid accidents.
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] To this date it has not been shown that similar operations have resulted in a reduction in taxable value of property and it is not anticipated that this operation would alter past assessments. The presence of an industrial site in the midst of an agricultural/rural residential area has the potential to temporarily reduce the desirability of surrounding land as a location to live a rural lifestyle, and therefore the marketability of improved and unimproved real estate may be temporarily diminished as some prospective buyers would not purchase these properties.
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed?	<p>[Y] The operation will require periodic site evaluations by DSL 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.</p> <p>Cumulative Impacts - The potential for this operation to occur at the same time as other construction going on in the area, and both hauling on Pulp Mill Road exists. Signing and flagpersons would be useful in regulating traffic patterns.</p>

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. This operation is in a CI-1, commercially zoned portion of Missoula County and many land uses abound. It could be characterized as agricultural/commercial because each of those uses exist to some degree.
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 amendment with mitigating conditions: The Plan of Operation has been written with mitigating conditions. Mitigation measures include fuel containment and water protection.

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:

Mine Safety and Health Administration for safety permit; Montana Department of Labor & Industry, Bureau of Safety for safety permit; Missoula County Office of Community Development for a zoning permit.

25. Magnitude and Significance of Potential Impacts: Impacts are unlikely to be significant because the resulting reclaimed area will be put back into farming. The cumulative effect of the gravel operation in the same area as other construction is minor. Impacts are unlikely to be significant on the general environment because of the size and location 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 Checklist Prepared By: Rod Sandahl Reclamation Specialist
Name Title

Approved By: _____
Name Title

Signature Date

Opencut

Revised, 2/25/92

Montana Bureau of Mines and Geology
 Water Well Log Data
 HAFFNER SITE, 14N 20W 28 BB

05/03/1996

Location: 14N 20W 28
 Site Name: CUSTOM ENTERPRISES
 Depth: 110.0
 Yield: 10.0
 Static Water Level: 78.00
 Pumping Water Level: 93.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1976

Location: 14N 20W 28
 Site Name: JONES EQUIPMENT
 Depth: 240.0
 Yield: 25.0
 Static Water Level: 165.00
 Pumping Water Level: 176.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1984

Location: 14N 20W 28
 Site Name: JACOBS JAY
 Depth: 151.0
 Yield: 15.0
 Static Water Level: 113.00
 Pumping Water Level: 140.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1974

Location: 14N 20W 28
 Site Name: HIGHTOWER & WALLACE
 Depth: 178.0
 Yield: 15.0
 Static Water Level: 130.00
 Pumping Water Level: 175.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1978

Location: 14N 20W 28
 Site Name: MCCUE BOB
 Depth: 500.0
 Yield: 30.0
 Static Water Level: 0.00

Pumping Water Level: 0.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1979

Location: 14N 20W 28
 Site Name: HWC CONSTRUCTION
 Depth: 140.0
 Yield: 20.0
 Static Water Level: 95.00
 Pumping Water Level: 107.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1980

Location: 14N 20W 28
 Site Name: SCHWAN'S SALES ENT.
 Depth: 170.0
 Yield: 10.0
 Static Water Level: 80.00
 Pumping Water Level: 93.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1983

Location: 14N 20W 28
 Site Name: CARAS GEORGE
 Depth: 203.0
 Yield: 25.0
 Static Water Level: 147.00
 Pumping Water Level: 190.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
-1.50	200.00	6.00	

Year drilled: 1991

Location: 14N 20W 28
 Site Name: SCHMAUTZ BERNICE
 Depth: 140.0
 Yield: 12.0
 Static Water Level: 80.00
 Pumping Water Level: 90.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1978

Location: 14N 20W 28

Site Name: GALLAGHER MARVIN
 Depth: 120.0
 Yield: 15.0
 Static Water Level: 85.00
 Pumping Water Level: 95.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1977

Location: 14N 20W 28
 Site Name: BIDLAKE STEVE
 Depth: 154.0
 Yield: 15.0
 Static Water Level: 85.00
 Pumping Water Level: 96.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1987

Location: 14N 20W 28
 Site Name: RATHBUN LARRY D.
 Depth: 190.0
 Yield: 30.0
 Static Water Level: 127.00
 Pumping Water Level: 148.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1985

Location: 14N 20W 28
 Site Name: P & C FABRICATION
 Depth: 180.0
 Yield: 25.0
 Static Water Level: 107.00
 Pumping Water Level: 118.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1983

Location: 14N 20W 28 A
 Site Name: AUNE PETER O.
 Depth: 275.0
 Yield: 25.0
 Static Water Level: 170.00
 Pumping Water Level: 0.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	3.00	

Year drilled: 1941

Location: 14N 20W 28 A
 Site Name: AUNE PETER O.
 Depth: 286.0
 Yield: 25.0
 Static Water Level: 155.00
 Pumping Water Level: 276.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1971

Location: 14N 20W 28 A
 Site Name: AUNE PETER O.
 Depth: 227.0
 Yield: 14.0
 Static Water Level: 0.00
 Pumping Water Level: 75.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1969

Location: 14N 20W 28 A
 Site Name: GODDARD T. & ERCK L.
 Depth: 247.0
 Yield: 55.0
 Static Water Level: 176.00
 Pumping Water Level: 185.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1979

Location: 14N 20W 28 ACCB
 Site Name: BROWN KAY
 Depth: 180.0
 Yield: 15.0
 Static Water Level: 135.00
 Pumping Water Level: 140.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1979

Location: 14N 20W 28 BA
 Site Name: BITTERROOT INTERNATIONAL SYSTEMS
 Depth: 280.0
 Yield: 25.0
 Static Water Level: 177.00
 Pumping Water Level: 0.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
-2.00	280.00	6.00	

Year drilled: 1993

Location: 14N 20W 28 BA
 Site Name: BITTERROOT INTERNATIONAL
 Depth: 315.0
 Yield: 50.0
 Static Water Level: 185.00
 Pumping Water Level: 0.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	-2.00	315.00	6.00	

Year drilled: 1995

Location: 14N 20W 28 BB
 Site Name: EDWARDS HOWARD
 Depth: 220.0
 Yield: 15.0
 Static Water Level: 160.00
 Pumping Water Level: 0.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	-2.00	220.00	6.00	

Year drilled: 1993

Location: 14N 20W 28 C
 Site Name: JENSEN DAN
 Depth: 200.0
 Yield: 15.0
 Static Water Level: 89.00
 Pumping Water Level: 101.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	0.00	0.00	6.00	

Year drilled: 1987

Location: 14N 20W 28 CD
 Site Name: RASMUSSEN STAN
 Depth: 77.0
 Yield: 18.0
 Static Water Level: 59.00
 Pumping Water Level: 75.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	0.00	0.00	6.00	

Year drilled: 1976

Location: 14N 20W 28 D
 Site Name: REAL LOG HOMES
 Depth: 372.0
 Yield: 40.0
 Static Water Level: 102.00
 Pumping Water Level: 300.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type

0.00 0.00 6.00

Year drilled: 1975

Location: 14N 20W 28 DA
 Site Name: BROWN DICK
 Depth: 130.0
 Yield: 12.0
 Static Water Level: 84.00
 Pumping Water Level: 124.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1974

Location: 14N 20W 28 DA
 Site Name: CULLINAN TERRY
 Depth: 240.0
 Yield: 15.0
 Static Water Level: 96.00
 Pumping Water Level: 0.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
-2.00	240.00	6.00	

Year drilled: 1994

Location: 14N 20W 28 DAB
 Site Name: THORTON LUMBER
 Depth: 140.0
 Yield: 15.0
 Static Water Level: 80.00
 Pumping Water Level: 128.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1974

Location: 14N 20W 28 DAB
 Site Name: BARKLEY BEN
 Depth: 150.0
 Yield: 25.0
 Static Water Level: 85.00
 Pumping Water Level: 140.0

Casing: Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
0.00	0.00	6.00	

Year drilled: 1974

Location: 14N 20W 28 DADC
 Site Name: SCAFFER'S MOBIL SERV
 Depth: 96.0
 Yield: 8.0
 Static Water Level: 80.00
 Pumping Water Level: 84.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	0.00	0.00	6.00	

Year drilled: 1967

Location: 14N 20W 28 DBAD
 Site Name: WILLISON GENE
 Depth: 170.0
 Yield: 20.0
 Static Water Level: 110.00
 Pumping Water Level: 125.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	0.00	0.00	6.00	

Year drilled: 1976

Location: 14N 20W 28 DC
 Site Name: RASMUSSEN STAN
 Depth: 157.0
 Yield: 150.0
 Static Water Level: 72.00
 Pumping Water Level: 78.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	0.00	0.00	6.00	

Year drilled: 1981

Location: 14N 20W 28 DDBB
 Site Name: R-LITE CONCRETE PROD
 Depth: 632.0
 Yield: 18.0
 Static Water Level: 0.00
 Pumping Water Level: 216.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	0.00	0.00	6.00	

Year drilled: 1966

Location: 14N 20W 28 DDCD
 Site Name: RASMUSSEN ROGER
 Depth: 116.0
 Yield: 30.0
 Static Water Level: 68.00
 Pumping Water Level: 115.0

Casing:	Top (ft.)	Bottom (ft.)	Diameter (in.)	Type
	0.00	0.00	6.00	

Year drilled: 1977