

ENVIRONMENTAL ASSESSMENT

Project Name: Valley West

Proposed Implementation Date: Fall 1996

Proponent: A.M. Welles

Type and Purpose of Action: A.M. Welles proposes to mine, crush, and transport 80,000 cu.yds of sand and gravel to be used in conjunction with the reconstruction of Oak Street. Welles would salvage soils, dewater the site using dewatering wells, mine gravel, recontour, creating a 4.5 acre pond up to 25 feet deep that would be utilized for fish habitat and recreation. The slopes above the highwater line and the 2.5 acres of hardstand areas, crusher site, and mineral stockpile locations will be topsoiled and seeded.

Location: NW¹/₄, Sec. 9, T2N, R5E **County:** Gallatin

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>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>	<p>[Y] The proposed site lies on a relatively level portion of the Bozeman Alluvial Fan. This area, in general, is valley fill consisting of silt, sand, and gravel; includes some terrace deposits and glacial drift of Pleistocene age in some areas; locally includes hot springs tufa; the older part of the alluvium, where present is probably of Pliocene age.</p> <p>Soils are classified as Lamoose silt loam and Meadowcreek loam. The Lamoose soil has 18-27% clay and the A & B horizons are generally 27 inches deep. The Meadowcreek soil has 18-25% clay and the A & B horizons are generally 25 inches deep. The A & B horizons of both soils would be salvaged prior to mining and replaced on the pond shorelines, crusher site, hardstand areas, and mineral stockpile sites following recontouring. The operation has a short life span and microbes would recolonize the disturbed soils.</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?

[Y] Test holes dug in 1995, indicates that the groundwater level in this area varies from 2 feet below the ground in the northern part of the site to 5 feet below the ground in the southern part. Transmissivity is generally accepted to be a maximum of 37,000 gpd/ft in this area and water quality is very good. The applicant is using a series of eight dewatering wells drilled to a depth of 30 feet. The wells are located along the south and east boundaries of the proposed gravel pit. Each well pump is capable of pumping 300 gallons per minute (g.p.m.), but the projected pumping rate is closer to a maximum of 175 g.p.m. per well. The wells are connected by a series of 4 inch plastic pipes with two series of 3 wells and one series of two wells with outlets going into Aajker Creek. The current flow of Aajker Creek is 16.24 cubic feet per second (cfs). The additional flow from pumping is approximately 3.23 cfs for a total of 19.47 cfs. A typical cross section of Aajker Creek was measured approximately 800 feet south of Durston Road. The creek can flow approximately 35 cfs before overflowing its banks.

Hydrologic modeling was conducted on the site to model the impacts that dewatering would have on the area. (The site will be dewatered from September 13, 1996 to approximately November 30, 1996) Using a worse case scenario of pumping the site for 90 days at the rate of 300 g.p.m. per well and using a hydraulic conductivity of 200 feet per day the cone of depression would result in a 4-foot drawdown of the aquifer approximately 1,800 feet from the site. The model overestimates drawdown for long periods of time since it assumes the pumping rate remains constant even after dewatering occurs around the pumped wells. Accordingly, actual drawdown at long pumping times will be less than estimated because the dewatering pumping abstraction rate will decrease as the area is dewatered. The model assumes the dewatering well distribution currently extant with eight dewatering wells. The estimated extent of the cone of depression shows the only water well to be impacted is located to the northwest of the site on Richard Nollmeyer's property. According to the landowner, Dr. Nollmeyer, the well is 20 feet deep. After 90 days pumping the water level in the well would be lowered 8.879 feet in the worse case scenario. The applicant has committed to either deepening the existing well or drilling a new well for Dr. Nollmeyer if the existing well goes dry. The subirrigated pastures and hayfields located to the east and north would be impacted by the dewatering. Dewatering the site in the fall when the vegetation is dormant would lessen substantially the impact to the subirrigated land. By next spring the groundwater elevation would be reestablished to the level prior to the initiation of pumping. Therefore there should be very little if any impact to agricultural activities. Dewatering the site did not require a discharge permit from the Montana Department of

<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] There will be an increase in airborne particulates while the soil is being salvaged, the gravel being crushed and hauled, and soil replaced. However soils will be moist during stripping, so increases will be minimal. The applicant has secured an Air Quality Permit from the Montana Dept. of Environmental Quality. The proponent must comply with the provisions of the Air Quality Permit (re: opacity from the crusher and fugitive emissions from haul roads, work area and all stockpiles). The gravel will be wet when it is mined and this will help meet air quality standards. There is no asphalt plant involved with the operation. The Bozeman City-County Planning Office has issued a temporary use permit which will commit the proponent to apply a dust inhibitor (mag chloride) and grade Durston Road during the hauling operation and after hauling from the site is completed, as required by the Gallatin County Road Superintendent.</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] Existing vegetation will be removed with the soil. Some roots may remain viable in the soil stockpile and regenerate upon replacement. The applicant will seed all affected land to species compatible with the post mine land use. The site has been planted with tame species and no rare or threatened plants are present. The proponent is required to obtain a weed management plan from the Gallatin County Weed Management Board and to implement the plan.</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] The location of the proposed operation precludes the significant use of wildlife, although it would be expected to receive transient use by various avian species and some rodents.</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 Montana Natural Heritage Program has not identified any threatened or endangered plant or animal species present on this site, but has identified three species (two plant species and one insect) as being in the immediate area. The site was inspected for the present of any threatened and endangered species and none of the plant species were present on the site. The insect, a stonefly, could be present in Aajker Creek, but since the creek will not be impacted by the proposed operation, except for additional clean well water being discharged into it from the dewatering operation, the stonefly, if present, should not be impacted. It was also noted that the site has been cultivated in the past and introduced grass and legumes populate the site. There are wetlands identified as present in the immediate area, but these wetlands will not be impacted by the proposed operation.</p>

<p>7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?</p>	<p>[N] A field reconnaissance survey and a literature search were done and neither revealed the presence of any archaeological nor historic values.</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] During the mining phase, the site will be visually impacted, however, following reclamation, a well designed, natural looking pond, suitable for fish habitat will be in place.</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>
<p>10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other studies, plans or projects on this tract?</p>	<p>[Y] The site is currently under review to be subdivided.</p>

IMPACTS ON THE HUMAN POPULATION

RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
<p>11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?</p>	<p>[Y] The use of heavy mining and hauling equipment will increase the risk of accidents. However, the applicant must comply with OSHA and MSHA regulations and it is expected that safety considerations will be given the utmost attention. The proponent will have to abide by all traffic laws. The haul trucks and other equipment will access Durston Road and travel east approximately 2.5 miles to access N 19th Avenue. The site of the highway project is approximately 1 mile north on N 19th Ave. on Oak Street. The Bozeman City-County Planning Office has restricted the hours of hauling from 8:45 a.m. to 4:45 p.m. Monday through Saturday to reduce traffic during peak traffic hours and to avoid conflict with the time when children are being dropped off at the nearby school. The hours of operation for the pit would be limited to be from 7:00 a.m. to 7:00 p.m. Monday through Saturday. The proponent will also be required to control dust on the haul and access roads and repair any damage to Durstan Road. The proponent must leave Durston Road in original or better condition than it is prior to the beginning of the proposed scheduled mining operation and is required to post a performance bond of \$20,000.00 with the Gallatin County Road Office to ensure compliance with the above conditions pertaining to Durston Road. Signing will also be erected on Durston Road warning motorists of the hauling activities. No load limit restrictions have been placed by the county on the public roads. There will be additional noise generated by backup alarms on the equipment, crusher, and hauling. The topsoil stockpiles will be strategically placed in the directions of residences to mitigate, as much as feasible, noise generated by the proposed operation. Also, the crusher will be located within the confines of the pit. As previously stated the hours of operation are restricted to be from 7:00 a.m. to 7:00 p.m. Monday through Saturday. Crushing operations will be tentatively completed by November 30, 1996. No hauling will be allowed on Durston Road during the spring season unless authorized by the Gallatin County Road Superintendent.</p>
<p>12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?</p>	<p>[Y] 4.5 acres will be removed from agricultural use (grazing) where the pond will be created. The pond will be used for fishery habitat and recreation. The remaining 2.5 acres will be seeded with grasses and may eventually be subdivided for home sites.</p>

<p>13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[N]</p>
<p>14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?</p>	<p>[N]</p>
<p>15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed?</p>	<p>[N] The site will require periodic site evaluations by DEQ staff, however they would generally be conducted in conjunction with other regional sites.</p>
<p>16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?</p>	<p>[N] Bozeman City-County Zoning Clearance has been obtained. A special temporary use permit has been granted to the proponent.</p>
<p>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?</p>	<p>[N]</p>
<p>18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?</p>	<p>[N]</p>
<p>19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?</p>	<p>[N]</p>
<p>20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?</p>	<p>[N]</p>
<p>21. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:</p>	<p>[N]</p>

22. Alternatives Considered: Denial. The owner of the gravel resource would be denied full utilization of his property at this time. due such.

23. Public Involvement, Agencies, Groups or Individuals contacted: Montana Natural Heritage Program, Montana Dept. of Transportation, Gallatin Co. Weed Board and Road Department, and Bozeman City-County

