

ENVIRONMENTAL ASSESSMENT

SITE NAME: Norm Dykstra

APPLICANT: Dykstra Family Limited Partnership

LOCATION: SE & SW Sec 25 T1S R4E

COUNTY: Gallatin

PROPOSED ACTION: The Dykstra Family Partnership proposes to operate a full-service, commercial gravel operation from a 35.8-acre site half way between Belgrade and Four Corners off Jackrabbit Lane. Access would be from Jackrabbit Lane by way of the old Low Grade Railroad Grade.

They would mine 1,900,000 cubic yards of material. The major pieces of equipment they propose to operate are a crusher, wash plant, concrete plant, and asphalt plant. The product would be used for general construction in the Gallatin Valley.

Reclamation would be completed to post-mine land uses of wildlife pond, pasture, and hayland by 2019. The reclamation bond is \$91,251.

A: Significant Unavoidable Impacts B: Insignificant as a result of conditioned mitigation C: Insignificant as proposed
L: Long Term Impacts S: Short Term Impacts

	POTENTIAL IMPACTS					EXPLANATION
	A	B	C	L	S	
PHYSICAL ENVIRONMENT						
1. <u>TOPOGRAPHY</u>			X	X		<p>Much of the site is flood-irrigated hay meadow in the Gallatin Valley. The Spain Ferris and Mammoth Fork ditches are to the west and Dry Creek is to the east.</p> <p>Seven acres in the southeast triangle of the site had been mined in the past and a 2.5-acre pond was left as part of the reclamation. The pond is about 15 feet deep and is dry most of the year. A stockpile had also been left.</p> <p>Access Road. It is proposed to improve the abandoned railroad grade which is about 2 feet above the surrounding land and traverses the site from southeast to northwest. The improved railroad grade would form a 4,000-foot long access road from the site to Jackrabbit Lane. MDT has issued the approach permit. Use of the railroad grade would eliminate the use of the county's East Hulbert Road and would avoid going past several homes and other landowner's property.</p> <p>Reclamation: Mining would leave a 26-acre pond for wildlife use and about 9 acres of hayland and pasture. The pond would be irregularly shaped with variable depth, side slopes, and shore materials. Bentonite or other clay would be mixed with native materials to help maintain the water level. Replaced topsoil would be extended below the high water mark.</p>
2. <u>GEOLOGY</u> ; Stability			X	X		<p>Quaternary alluvial gravels. Maximum mining depth would be up to 50 feet to provide for a fishery.</p> <p>See Section 4 - Water, for discussion of pond reclamation.</p>
3. <u>SOILS</u> ; Quality, Distribution			X		X	<p>This site has two major soil series - the Attawan clay loam and the Beaverell loam. These soils support irrigated hayland and pasture. Both are built on stream terraces with alluvium parent</p>

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											<p>material. Test pits showed that topsoil depths varied from 6 inches to 35 inches, and averaged about 18 inches. Overburden averaged 4 inches.</p> <p>Phase I topsoil would be placed in berms along East Hulbert Road and at the southeast corner of the site. This would provide mitigation against noise and also visual disturbance.</p> <p>Depending on the ultimate size of the pond(s), which could be 26 acres, there would be an excess of topsoil that could be sold or left in privacy berms. The underlying gravels are porous and allow water to percolate fairly quickly. Some of the excess soils, particularly the Attawan clay loam may be mixed with the pond floor and side materials to slow percolation and help hold water in the pond.</p> <p>Good soil salvage would result in no significant adverse impacts to soils.</p> <p>Average annual precipitation is about 13 inches.</p>
4. <u>WATER</u> ; Quality; Quantity; Distribution								X		X	<p>Dry Creek lies just to the east of the point of the triangle. The Mammoth Fork and Spain Ferris Ditches are just to the west. All of these flow to the northeast and are main irrigation water sources. The proposed permit area is above the 100-year floodplain and did not require local authorization.</p> <p>There are no wetlands on-site. A 2.5-acre pond from a previous mining operation is close to East Hulbert Road.</p> <p>The site would be dewatered and the discharge would be to the pasture lands north of the permit area.</p> <p>Water Supply and Usage: The land owner has irrigation water rights and has applied to DNRC for modifications to use them for recreation and other uses. They own 43.75 shares in the Spain-Ferris Ditch, 49 Montana miners' inches (1894) and 48.91 Montana miners' inches (1872) in the West Gallatin River that is delivered via the Spain Ferris Ditch. Forty-nine miners' inches computes to about 13,000 gallons per day. They also own 0.25 shares in the Beck-Spring-Border ditch. The Lower Middle Creek Supply Ditch Company holds the rights for an additional 224 acre-feet of water for the Dykstra farming operation.</p> <p>Operations including the crusher, concrete plant and dust control would require an estimated 8,800 gallons per 8 hour shift. The use of a pug mill would require an additional 22,500 gallons per day (gpd). Wash plants utilize a substantial amount of water but most of it can be recycled. As an example, if a wash plant were to operate 8 hours a day and pump 500 gallons per minute, it would use 240,000 gpd. About 80,000 gpd would be lost through staying in the washed product, through evaporation, and through infiltration into groundwater. About 160,000 gpd of used water would be recycled through the settling ponds.</p>

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											<p>The applicant met on June 7, 2006 with the Department of Natural Resources and Conservation (DNRC) personnel to discuss changes in water uses. Any of the above water could be used with a change of water right. For example, a change in the Middle Creek Ditch water right would cover all operational and post-mine water uses.</p> <p>If a change in water use is not available before operations begin, water for the proposed operation could be obtained from a new well that would be drilled into the aquifer. The water would not need sampling before it was used but an amendment to the permit would need to be approved by the DEQ. Once this source is approved, water would be pumped from at a rate up to 35 gallons per minute, a rate that does not require the proponent to obtain a water right on the well. Water would be stored in one or more large tanks. The operator would then go through the process of obtaining a water right to allow pumping above the 35 gallons per minute to meet all its needs. To the extent that more water than 35 gallons per minute would be needed prior to obtaining the necessary water rights, Dykstra would import good-quality water from outside sources.</p> <p>Impacts: Impact to water quality from this operation would be minimal. Dewatering would place clean groundwater on fields to the north and east. Stormwater would remain on site. Water from the wash plant settling ponds, if not used, would infiltrate into the ground or evaporate.</p> <p>The post-mine water balance would not be much greater than presently used for farming. The amount of water lost through evapotranspiration of an alfalfa field (about 23 inches per year) is within a few inches of the evaporation from a pond surface (about 25 inches per year). These estimates are from DNRC and Western Regional Climate Center information.</p> <p>It is unknown how much pond temperatures would increase during the summer months. Pond water is warmed by higher seasonal temperatures in the spring and summer. Ponds have different thermal layers and there is usually not much vertical mixing. The proposed post-mine pond would be up to 50' in depth. Groundwater flow of 50 degree water (as measured at Zoot Enterprises over the last 4 years) through the highly transmissive gravels is expected to be relatively high. Studies of the effect of heating in gravel pit ponds (Ostrander and others, 1998; Harden Environmental, 1995) have shown that ponds typically have minimal impact on the heating of down gradient groundwater and that the small thermal gains (<1 degree C) measured in pit ponds are dissipated in groundwater within hundreds of meters down gradient of the pond.</p> <p>Stormwater would be kept on site. The reclamation plan generally calls for pond slopes varying from 3 feet horizontal to 1 vertical (3h:1v) to 5h:1v. This would provide stable pond</p>

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											banks. The facility area and the rest of the site would be reclaimed almost flat. No offsite erosion would occur.
5. <u>AIR</u> ; Quality								X		X	The crusher and asphalt plants would have air quality permits. Fugitive dust would be controlled with the use of water trucks. Air quality reduction would be minimal.
6. <u>UNIQUE, ENDANGERED, FRAGILE, or LIMITED</u> environmental resources											<p>The Natural Heritage Program identified two vascular plants near the site. Slender Wedgegrass was located in the far southeast corner of the section in 1898 or 1905. That part of the section is not within the requested permit boundary. It is a wetland species. Since no wetlands would be disturbed with this project, and it has not been sighted in 100 years, it is unlikely that this grass would be impacted.</p> <p>Dwarf Purple Monkeyflower might have been sighted in 1894 in the far southeast corner of section 26. This plant requires a very dry habitat that does not occur on site.</p>
BIOLOGICAL ENVIRONMENT											
1. <u>TERRESTRIAL, AVIAN, and AQUATIC</u> ; species and habitats								X	X	X	<p>The site has been farmed for 100 years. Most of it is irrigated hayland.</p> <p>The reclaimed wildlife ponds would provide open, calm water for waterfowl with riparian and wetland vegetation along the shorelines. The post reclamation pond would provide an expanded habitat for wildlife, including ducks, geese, herons and other shore birds, osprey and eagles, amphibians, pond-dwelling mammals, and many other species that prefer calm water.</p> <p>Mining would have a minimal detrimental impact because of the small area that would be disturbed and the lack of native habitat.</p>
2. <u>VEGETATION</u> ; quantity, quality, species								X	X	X	<p>The site was used for hayland. Vegetation includes mainly introduced species. Dry Creek and the irrigation ditches provide riparian habitat including cottonwoods, willows, and red-osier dogwood. There are no wetlands within the permit area.</p> <p>Noxious weeds including knapweed, whitetop, hounds' tongue, cocklebur, and poison hemlock are on site near field edges.</p> <p>Revegetation of facility area disturbance would increase and diversify wildlife habitat. Areas not within the wildlife pond environs would be reclaimed back to DEQ-recommended dry land species. No special wetland or riparian species would be planted around the pond. Cottonwoods, dogwoods, cattails, and other like species would be expected to naturally invade the pond perimeter from the nearby ditch and creek riparian areas. This vegetation would enhance the wildlife use around</p>

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						<p>the pond.</p> <p>Mining would have beneficial impacts because of the control of noxious weeds, change to a mix of dryland, irrigated field, and pond, and retention of nearby riparian areas.</p>	
3. <u>AGRICULTURE</u> ; grazing, crops Production			X	X		<p>Mining would result in long term reduction of hay production on about 26 acres of land at final reclamation. The pond and wetland areas would improve wildlife habitat with emphasis on waterfowl, shorebirds, and fishery.</p> <p>Alfalfa hayland in this area produces about 2½ tons per acre per year. At about \$80 per ton this would permanently reduce agricultural income by \$5200 per year.</p>	
HUMAN ENVIRONMENT							
1. <u>SOCIAL</u> ; structures and mores			X		X		
2. <u>CULTURAL</u> uniqueness/diversity			X		X		
3. <u>POPULATION</u> ; quantity/diversity			X		X	<p>The site would be in a portion of Gallatin County a few miles from Belgrade that is beginning to be heavily developed. Major residential subdivisions are within a few miles of this site.</p>	
4. <u>HOUSING</u> ; quantity/distribution			X		X		
5. <u>HUMAN HEALTH & SAFETY</u>			X		X	<p>With control of air emissions, mining would not affect any residences.</p>	
6. <u>COMMUNITY & PERSONAL INCOME</u>			X		X		
7. <u>EMPLOYMENT</u> ; quantity, distribution			X		X	<p>Local construction projects for which this material would be used would result in permanent employment in the area in the construction industry.</p>	
8. <u>TAX BASE</u> ; state/local tax			X		X		
9. <u>GOVERNMENT SERVICES</u> ;			X		X		
10. <u>INDUSTRIAL, COMMERCIAL</u> and <u>AGRICULTURAL</u> activities			X		X		
11. <u>HISTORICAL</u> and <u>ARCHAEOLOGICAL</u>			X		X	<p>A walkover of the area did not reveal any artifacts or signs of occupation. The site has been disturbed by farming and the low grade railroad. If during operations cultural resources were to be discovered, activities would be halted and temporarily moved to another area until SHPO was contacted and the importance of the site was determined.</p>	
12. <u>AESTHETICS</u>			X		X	<p>There are a few nearby neighbors. The soil stockpiles would be set along the county road to create a buffer from them. Mining would move away from those homes. The facilities area would be set back a quarter mile from the road. The</p>	

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						nearest resident lives a few hundred yards from the access road on Jackrabbit Lane. He had no adverse comments on its location.	
13. <u>ENVIRONMENTAL PLANS</u> and <u>GOALS</u> ; local and regional			X		X		
14. <u>DEMANDS</u> on <u>ENVIRONMENTAL RESOURCES</u> of land, water, air and energy			X		X		
15. <u>TRANSPORTATION</u> ; networks and traffic flows			X		X	This mine would produce 1,900,000 cubic yards of material over 12 years of operations or about 160,000 yards per year. When that amount is divided by 265 working days per year and 20-yard capacity trucks, it would result, on average, in about 60 truck trips daily. This traffic would get into the site directly from Jackrabbit Lane via the access road built on the old railroad grade.	

REGULATORY IMPACT ON PRIVATE PROPERTY: The analysis done in response to the Private Property Assessment Act indicates no impact. The Department does not plan to deny the application or impose conditions that would restrict the use of private property so as to constitute a taking.

PUBLIC INVOLVEMENT: Natural Heritage Program and State Historic Preservation Office were notified. Resident Notification forms with a letter explaining the operation and reclamation plans were sent to all local residents or landowners. Tens notices and letters were sent out. Only one form was returned. The person who returned the notification was contacted by phone and she had no concerns or questions but wanted a copy of this EA.

OTHER GROUPS OR AGENCIES CONTACTED OR WHICH MAY HAVE OVERLAPPING JURISDICTION: Air Resources Management Bureau, MT Mining Safety and Health, MT Fish Wildlife and Parks, MT Department of Natural Resources and Conservation, Gallatin County Commissioners, Gallatin County Weed Board,

ALTERNATIVES CONSIDERED: 1. Denial
2. Approval with Stipulations for Water Monitoring. Within 90 days of approval of the permit, the operator would submit for DEQ approval a water monitoring plan that would include periodical groundwater levels and water quality testing.

RECOMMENDATIONS CONCERNING PREPARATION OF AN EIS: Unnecessary, No Significant Impacts

APPROVED BY: _____ DATE: _____

Prepared by Jo Stephen, November 2006