-PUBLIC NOTICE-
Montana Department of Environmental Quality
announces

Goose Bay Equipment – Goose Site

APPLICATION FOR GRAVEL MINING PERMIT AMENDMENT

Goose Bay Equipment of Kalispell, Montana has applied for an Amendment to their Mined Land Reclamation Permit #GBE-001 to increase their 5-acre pond to 10 acres, to reclaim this area as a pond in the post-mine landscape. The site is a 74.4-acre gravel pit and facility located approximately 3.8 miles south of Columbia Falls on Jellison Road at an approximate elevation of 2,960 feet, mean sea level (MSL) in the S½ N½ of Section 36, of Township 30 North, Range 21 West, in Flathead County. The current permit allows mining to a depth of 12.5 feet on the entire 74.4 acres, and requires the finished pit floor to remain 3 feet above the high water table for reclamation to a sub-irrigated alfalfa hayfield. The amended 10-acre area would be dug to a maximum depth of 30 feet and would be reclaimed as a pond with 5:1 slopes, contoured for use as a fishery and wildlife area. This pond would increase the volume to be mined from 1.11 to 1.33 million cubic yards of gravel. No other changes would be made to the original application, and final reclamation is planned for July 2024. The Environmental Analysis prepared for the original permit application in March 2002 contains much information that is still applicable to this amendment, and impacts of mining into the groundwater would not change the earlier discussions of mining impacts regarding issues such as dust, traffic, noise, viewshed, wildlife, etc. This EA only addresses the impacts of the proposal to deepen a 10-acre portion of the existing permitted area.

Copies of the application, maps, and other relevant documents as well as additional copies of the environmental assessment are available from the DEQ at the addresses below. The draft EA will also be available on the DEQ website at http://deq.mt.gov/ea/opencut.asp. DEQ will accept written comments on this proposal until 5:00 P.M. on Friday, November 9, 2007. Please mail or fax your comments to one of the addresses listed below. You may also e-mail your comments to rsamdahl@mt.gov.

Department of Environmental Quality
Industrial and Energy Minerals Bureau
109 Cooperative Way, Suite 105
Kalispell, MT 59901
(406) 755-8985 or fax 755-8977

Department of Environmental Quality
Industrial and Energy Minerals Bureau
1520 E. 6th Ave.
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Visit our general website at http://deq.mt.gov

DRAFT ENVIRONMENTAL ASSESSMENT

PROPONENT: Goose Bay Equipment, Inc. SITE NAME: Goose Site

LOCATION: S½ N½, Sec. 36, T30N, R21W **COUNTY:** Flathead

October 22, 2007

TYPE AND PURPOSE OF ACTION:

The applicant proposes to amend its existing permit by increasing their 5-acre pond to 10 acres, and by reclaiming this area as a pond in the post-mine landscape (Map 1). The current permit allows mining to a depth of 12.5 feet, and requires the finished pit floor to remain 3 feet above the high water table for reclamation to a sub-irrigated alfalfa hayfield. The amended area would be dug to a maximum depth of 30 feet and would be reclaimed as a pond with 5:1 slopes, contoured for use as a fishery and wildlife area. This pond would increase the volume to be mined from 1.11 to 1.33 million cubic yards of gravel. No other changes would be made to the original application, and final reclamation is planned for July 2024. The Environmental Analysis prepared for the original permit application in March 2002 contains much information that is still applicable to this amendment, and impacts of mining into the groundwater would not change the earlier discussions of mining impacts regarding issues such as dust, traffic, noise, viewshed, wildlife, etc. This EA only addresses the impacts of the proposal to deepen a 10-acre portion of the existing permitted area.

This environmental assessment (EA) is required under the **Montana Environmental Policy Act (MEPA)**. An EA functions to identify, disclose and analyze the impacts of an action, in this case operating a gravel pit on which the state must make a decision, so that an informed decision can be made. MEPA sets no environmental standards, even though it requires analysis of both the natural and human environment. This document may disclose many impacts that have no legislatively required mitigation measures or over which there is no regulatory authority. The state legislature has provided no authority in MEPA to allow DEQ or any other state agency to require conditions or impose mitigations on a proposed permitting action that are not included in the permitting authority and operating standards in the governing state law, such as the Opencut Mining Act, the Clean Air Act of Montana, or any other applicable state environmental regulatory law. Beyond that, a company may agree to voluntarily modify its proposed activities or accept permit conditions.

The state law that regulates gravel-mining operations in Montana is the **Opencut Mining Act**. This law and its approved rules place operational guidance and limitations on a project during its life, and provide for the reclamation of land subjected to opencut materials mining. This law requires that a reclamation bond, cash deposit or other financial instrument be submitted to the state to cover the complete costs of reclaiming the site to its approved, post-mining land use, if the permittee fails to reclaim the site as required by the law, the rules, and the permit.

The permit decision cannot be based upon the popularity of the project, but upon whether or not the proponent has met the requirements of the Opencut Mining Act, pursuant rules, and other laws pertaining to its proposed actions.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE AND EXAMPLE/GUIDANCE QUESTIONS	**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?	The proposed mine is located in fairly flat terrain formed by an old river terrace above the Flathead River. The deposit consists of water-worked glacial debris overlying deeper valley bedrock. The site is currently used as an alfalfa hay field. Soil, which is 12 inches thick in the general area, would be salvaged and stockpiled away from the pit, road and facility area. Following mining, grading and ripping, the soils would be replaced, disked and seeded to grass around the pond and probably farmed for grain in the larger areas. There are no fragile, compactable or unstable soils present, no unusual geologic features and no special reclamation considerations.
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?	The general area overlays a fast-moving and high quality aquifer. A relatively high (within 13 feet of the surface) water table exists in the area of the proposed gravel pit. The water table is recharged mainly by the Flathead River. The closest major waterway is the Flathead River, which is 3,500 feet east of the proposed site. There is also an intermittent creek 500 feet northeast of the northeast corner of the proposed permit area; it is currently dry. Schellinger Construction is operating a sand & gravel pit digging a pond with an asphalt plant and a wash plant adjacent to this property to the south and LaSalle Sand & Gravel is excavating a pond on its permitted operation approximately 3,000 feet south of this site. Regional data suggest the ground water flow direction is variable but generally south-southeast depending on the time of year. There are numerous wells in the surrounding area. However, there are only eight within 1,000 feet of the proposed permit area. The eight closest wells in Section 36 average 65 feet in depth and have an average static water level of 14 feet. Most wells in the section are identified as for domestic use with a few for industrial, stockwater, and irrigation. This information was obtained from the Montana Bureau of Mines and Geology, Ground-Water Information Center web site for Section 36 (2007). The seasonal high water table is estimated to be at an average depth in the mine area of 13 feet. The estimated depth of mining would be 30 feet, 17 feet below the high water table. There is an approved bulk fuel storage area at the site that is a potential source of ground water contamination. Equipment on site such as the

	crusher and wash plant, and mobile equipment such as dozers and excavators would be fueled by portable fuel truck. However, the operation is located on top of the Evergreen Aquifer, which is a shallow, potable water-bearing zone of gravel that varies in this area from 20 to 30 feet thick, and is in hydrologic communication with the Flathead River. The DEQ has required a monitoring and spill detection plan to be implemented as part of the amendment application to watch for any changes in water quality and temperature. There is no site-specific ground water data for the proposed site regarding water quality or gradient. There is fuel storage approved for the site, but the fuel is contained within a lined, earthen berm to prevent accidental discharge into the ground water. The Evergreen aquifer has a transmissivity rate of 687,000 gpd/ft with a specific yield of 0.1. The potential rate of movement of a spill into this aquifer is in the order of 5 feet per day and flows from north to south across the permit area (Applied Water 2007). An array of three observation wells is proposed to evaluate background and disturbance ground water conditions, and a sampling plan is proposed for periodic testing to detect any contamination or changes that could affect this aquifer. One well would be located upgradient of the pond, one downgradient of the pond and a third would be located directly downgradient from the fuel storage containment berm and wash plant. Testing would be conducted for volatile organics, static water level, field parameters including water temperature, specific conductivity, pH and baseline conditions such as dissolved metals, nutrients and other inorganics each quarter during the first year. Then, data on static water level, field parameters and volatile organic compounds would be collected semi-annually thereafter and submitted to the DEQ. The plan includes a specific procedure for response to any known spill or contaminant detected during sampling. The DEQ and the Flathead County Health Department would be contacted as required by other applicable laws for spills, but also within 24 hours of a detection episode or at any time a spill is witnessed or free product is discovered in any sampling procedure. Emergency procedures for a known spill include immediate containment of the source product and rapid contact of appropriate authorities and potential affected individuals living nearby. Appropriate clean-up and increased further monitoring would be done and documented. As mining would be in generally flat terrain, there is little possibility of storm water runoff finding its way to state waters. Since the pond planned exceeds 5 acres, a Stormwater Discharge Permit would be required. The wash plant could operate up to 12 hours per day, Monday through Friday with isolated times when they may operate 18 hours per day including Saturdays for up to 15 days at a time. Water for the wash plant and for any dust control would be obtained from an existing irrigation water well located on the property. This well is capable of providing 1,000 gallons per minute (gpm). A throttling valve would be used to control the flow to the wash plant at approximately 600 gpm. Goose Bay has stated it has a change in water right use from the Department of Natural Resources and Conservation that allows water to

	be used for industrial purposes. The sediment ponds in each area would be unlined to allow the clean water to re-enter the groundwater and leave the silt and sands in the pond. Although the application does not specify the fate of the silt and sand that collects in the ponds, it could be sold as a product or used to backfill the highwalls before reclamation. Precautions would be taken to minimize possible contamination of surface water and groundwater. Any accidental spills or leaks from equipment would be excavated and properly disposed of. <u>Cumulative Impacts:</u> The area between Columbia Falls and Whitefish continues to grow. New residences in new subdivisions and commercial structures are being built. Several new gravel pits are being proposed and existing gravel operations are proposing expansions to provide the gravel, cement and asphalt needed for construction of new developments and roads. The new residences and structures would place increasing pressure on area ground water aquifers to provide potable water. The increase in sand and gravel operations also places demands on ground water and increases the possibility of impacting the quality and quantity of ground and surface waters in this area. This operation would intercept groundwater in order to create a pond, and would have no discharge into flowing surface water. The Flathead River, and to a lesser extent the Whitefish River, are the main sources of recharge to the aquifer. Special precautions would be taken to minimize possible contamination of the groundwater. Fuel storage would be contained within a plastic-lined, earthen berm to prevent spillage from entering the groundwater. Portable equipment with fuel tanks such as loaders and trucks would be in various places within the facility. Any accidental spills or leaks from equipment would be excavated and disposed of. No waste or trash would be disposed of at the site. With these precautions, the quality and quantity of the groundwater should not be adversely impacted. Five gravel mining operations, including the existing Goose Bay operation, occupy a permitted or proposed permitted area of slightly more than 320 acres within Sections 36 and 2. Approximately 31 acres of post-mining pond area are currently approved among these five operations. An additional 55 acres of post-mining pond area have been requested under pending amendment applications. Final total pond area among these five operations could increase by at least another 150 acres by the time mining is complete, under the expected long-term plans of these operations. Potential cumulative impacts from post-mine ponds for existing permits and pending amendment applications (approximately 86 acres) are discussed below. *Water levels:* Given the high yield of the shallow Kalispell aquifer, water level or flow rate is not likely to be significantly affected by the post-mine ponds. Increasing pond surface area will increase evaporation but should not measurably affect aquifer water levels. Domestic well supply in the vicinity of the ponds should not be diminished. *Flow patterns:* Depending upon the gradient of the water table, a large

	pond would be more likely to influence local flow patterns than small ponds. Expansion of pond areas may need to take into account potential influences on local flow patterns. However, the pit ponds will not significantly influence general flow direction. *Heating:* Increased pond surface area may affect ground water temperature due to heating in the pond from exposure to sun and ambient air temperatures. High transmissivity of the Kalispell aquifer, moderate ambient air temperatures in the Kalispell Valley, depth of the ponds and mixing with down gradient ground water make significant heating of the aquifer or river unlikely. Studies indicate that pit ponds have minimal impacts on ground water temperatures and that these minor effects are dissipated within tens to hundreds of meters of the pit (Ostrander et al, 1998). Monitoring for potential thermal changes downgradient of the pit ponds as they develop could help in estimating cumulative impacts in the Kalispell aquifer and Flathead River. *Aquatic life:* Removal of gravel also removes fauna interstitial to floodplain gravels. Study shows that distribution and abundance of these interstitial animals is determined by habitat variables within the aquifer (Ward et al, 1994). Studies regarding changes in faunal distribution patterns, abundance and changes in habitat caused by open pit mining and potential effects to Flathead River biota have not been undertaken and therefore, the cumulative impacts are difficult to predict. Given the size of the Kalispell aquifer (approximately 26,000 acres) and the wide distribution of interstitial fauna within the aquifer, removal of 86 (or even 150) acres of the aquifer would be expected to affect only a small portion of the population. More data would need to be gathered to more precisely address this impact. *Water quality:* The greatest potential for contamination during mining is associated with the use of petroleum products such as fuels and lubricants. Measures are taken at each mine site to prevent likely introduction of petroleum products to ground water (See discussion above in this section). Upon completion of mining, land surrounding post-mining ponds will be soiled and seeded to stabilize areas adjacent to the pond and decrease the likelihood of soil-borne surface contaminants (e.g. nutrients) washing into the pond. Post-mining ponds are anticipated to be in low-intensity agricultural and residential settings and add recreational opportunities to local residents. Although the presence of natural or constructed ponds may increase the vulnerability of shallow groundwater to surface contamination, the setting of these ponds should decrease the likelihood of significant surface contamination from land uses.
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?	Air quality would not be further degraded, and there would not be an increase in particulate matter as a result of this amendment to mine into the groundwater. <u>Cumulative Impacts:</u> Dust and odors from sand and gravel operations contribute somewhat to a decline in overall air quality, especially during the hot, dry summer months when these businesses are most active. An increase in the number or size of these operations could further contribute to the decline in air quality. However, the general increase in residential and business use in the area has contributed to this decline as well. A substantial increase in small car and light truck traffic on private driveways and unpaved roads has caused a substantial

	amount of particulates to enter the air in the general area. Historic use of the agricultural land in the area by plows, discs, seed drills, swathers, combines, bailers, etc. has always contributed to the dusty conditions in the area during summer months. As there is a shift in land use in some areas from agriculture to mining, there may be a slight increase in the potential for dust during mine operations, but the potential is expected to return to more normal (premining) levels after the sites are reclaimed.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be permanently altered? Are any rare plants or cover types present?	There are no known rare or sensitive plants in the site area. Vegetation consists of grain and pasture grasses, and covers 80% of the ground. It would be removed and planted with grass species or grain compatible with the proposed reclaimed use. There are no rare plants or cover types present.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	Although the area is used primarily for grain and hay production, it also supports populations of deer, elk, bears, rodents, song birds, coyotes, foxes, raptors, insects and various other animal species. The proposed mine is expected to displace some invertebrates that occupy the aquifer, and will reduce their habitat within the larger Evergreen Aquifer by a small percentage. Population numbers for these species are not known.
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?	Site evaluations and DEQ staff analyses have not revealed any unique, endangered or threatened plant or animal species that would be directly affected to a significant degree. Loss of some biomass that contributes to the food web for the bull trout in the Flathead River is anticipated, but at less than 0.04% of the total aquifer, the proposed 10 acres of pond is not considered to be significant.
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	Although there are cultural values in the general area, much of this site has been previously disturbed by modern man by logging and farming, thus destroying the integrity of resources that may have existed. The operator is committed to give appropriate protection to any values or artifacts discovered in the affected area in his existing permit. If significant resources are found, the operation would be routed around the site of discovery for a reasonable time until salvage could be conducted. The State Historic Preservation Office would 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?	The site is visible by homes and roads in the local area, but excavation into the water table would not decrease aesthetics beyond that which is already permitted. Hours of operation for the site are generally 7:00 am to 7:00 pm, Monday through Friday with some short extensions to 6:00 AM to 10:00 PM, Monday through Saturday. No change in hours of operation is proposed at this time.
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?	There are no unusual demands on land, water, air or energy anticipated as a result of this amendment.
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other studies, plans or projects on this tract?	There is concern in this area by Glacier Park International Airport about the activities of waterfowl and what possible risks creating attractive, open water bodies by gravel mining operations might have on aircraft flight around the runways. There have been no local studies that have investigated this situation. However, DEQ searched for and examined information available elsewhere on this issue, as well as evaluating habitat factors near the Glacier Airport, resulting in the following assessment. <u>Overview</u> Aircraft collisions with wildlife (wildlife strikes) are recognized in the aviation community to be a substantial hazard. For the 14-year period

	of 1990 through 2003, there were 52,493 wildlife strikes reported nationally, of which 97.4 percent involved birds (Cleary et al. 2004). Wildlife strike costs amount to approximately 456,000 hours of aircraft downtime and $194.5 million. According to Federal Aviation Administration (FAA) reports, only 20 percent of all bird strikes are reported annually. Due to the nature of aircraft operation (i.e. flight) most occurrences of wildlife strike take place between avian species (birds) and aircraft. Bird strike reports increased annually over the 14-year period to plateau at approximately 6,000 incidences per year after 2000 (Cleary et al. 2004), with about 6,100 incidences reported for 2004 (Bird Strike Committee-USA). The increase in reports can be attributed to several factors, including increased bird populations, increases in flight transportation, development of quieter plane engines, and increased awareness and reporting by the aviation community. The plateau can be attributed to a decrease in flight activity following September 2001, and more aggressive wildlife management and mitigation at airports due to increased awareness of wildlife strikes. Records of wildlife strikes are submitted to the FAA using FAA Form 5200-7 or via their website http://wildlife-mitigation.tc.faa.gov. The strike records are categorized in degree of damage to aircraft from none to destroyed. Many reports are submitted without assessment of the aircraft damages. However, of the reports with assessment value, it is evident that damages can be significant. There were 51,145 bird strike reports in the 14-year period and 42,822 reported the extent of damage. Of these 42,822 reports, 84 percent indicated no damage; 9 percent indicated minor damage; 4 percent indicated substantial damage; 3 percent reported an uncertain level of damage; and less than one percent indicate the aircraft was destroyed. The reports indicated that 103 bird strikes resulted in 124 human injuries and 6 strikes resulted in 8 human fatalities. Only 1,637 reports indicated the direct cost of damages, which totaled approximately $169 million and averaged $103,265 per incident (Cleary et al. 2004). <u>Attractants</u> FAA Advisory Circular (FAA AC) 150/5200-33A (Federal Aviation Administration 2004) addresses land uses that attract wildlife and create hazards to airports and air-traffic operations. Land use features around an airport are significant factors regarding the wildlife strike hazard. Features such as waste management and water management facilities (i.e., landfills and sewage treatment operations), wetlands, dredge spoil containment areas (i.e., disposal site for dredged materials), agricultural activities, golf courses, and landscaping are the major categories in the FAA AC. Synergistic effects can be created when a new land use is developed close to an airport. Creating a pond on one side of an airport while food sources exist on the other side falls under the category of a synergistic effect. The pond itself may only attract a few animals; however, if it becomes a nesting or dabbling (e.g. bathing, resting) ground to access the food source, this creates a concentration of birds with a flyway across the airport. <u>Munich Airport Assessment</u>

	The Munich Airport (Germany) was developed in an area with gravel mining below the water table as is the case adjacent to Glacier Park International. Bird strikes were considered higher in zones directly in the takeoff and approach paths of planes in a study developed around the Munich Airport (Morgenroth). A buffer of 2,000 meters was established in these flight zones. Within this buffer, gravel mining with ponds of restricted size during operations was allowed, but no postmining ponds were allowed. Additionally, the surface area of the ponds was limited in zones in all other directions of the runways. After implementation, the Munich Airport noticed decreases in bird strike during the period of 1992-2000. <u>Goose Bay and Other Operations</u> Five adjacent gravel mining operations occupy a permitted area of slightly more than 320 acres within Sections 36 and 2. These operations are located across Highway 2 from Glacier Park International Airport (Map 2). Approximately 31 acres of post-mining pond area are currently approved among these five operations. An additional 55 acres of post-mining pond area have been requested under pending amendment applications. Using a 10,000-foot radius, as suggested in the FAA AC, around Glacier Park International as a target buffer zone of interest, the surface water ponds and channels were identified around Glacier Park International Airport. Ponds were digitized on the 2004 aerial photograph (Map 2), and streams were queried from the USGS NHD Geodatabase. Approximately 6.2 acres of non-mine related ponds, 16.1 acres of gravel mine-ponds, and 45 miles of stream and river channels are identifiable on the photo (Map 2). The approved post-mining ponds will increase the current extent of such ponds when the 31 acres are completed. If the additional 5 acres (for a total of 10) of proposed pond at Goose Bay were approved, along with more requests likely, the ponded area could increase substantially. Thirty one acres of gravel mine ponds are planned for fish habitat; Goose Bay's proposed pond area would add ten acres to that count. Most of the areas around the ponds are slated for some type of agriculture -- either grain, hay, or pasture. The airport is situated between two rivers that appear to contain much more desirable waterfowl habitat than will be created by gravel mining. Over 4 miles of the Whitefish River run within 10,000 feet of the west side of the runway. With an average width of approximately 70 feet, it creates at least 34 acres of natural waterfowl habitat. The Flathead River adds a substantial acreage of natural habitat slightly east of the 10,000 foot zone, with 17.5 acres of river area within the 10,000 foot zone. Additionally, inside the 10,000 foot zone the Gooderich Bayou adds approximately 11 acres of natural waterfowl habitat. These three water bodies contain 62.5 acres of natural habitat. Also, there is potential additional habitat in the form of unnamed streams within 10,000 feet of the airport. Assuming the unnamed streams are an average of 5 feet wide and have water in them for a substantial part of the year, approximately 23 acres of stream channel area occur in this zone. If the same unnamed streams are assumed to be 10 feet wide, 45.5 acres of stream channel area are within the 10,000

	foot radius. These drainage channel lengths are derived using stream reach lines from the USGS NHD Geodatabase, and when draped on the photo they appear to be slightly straighter than the actual channels. Thus the acreage estimates above are considered conservative. <u>Conclusions</u> Glacier Park International Airport is situated adjacent to five existing gravel mining operations with a gravel resource located below the water table and attractive to the mine industry due to local demand. There is a sixth operation on Map 2 that is not considered in this report. Some of the operators have requested establishment of ponds as part of their final reclamation. The other operators may consider ponds or small lakes as final reclamation in the future. The permitted ponds will almost double the extent of ponded area within the FAA-suggested, 10,000-foot-buffer zone. One important consideration in constructing a water body around an airport is its orientation to the runway. The German study found that not constructing ponds directly in the take-off and approach paths of planes helped decrease the incidence of bird strikes. Other factors contributing to bird strikes to consider are food sources and their proximity to water bodies around a runway. All of the gravel operations are slightly out of the direct path of take-off and approach of the aircraft runways, except for portions of the Paveco permit area, which is situated such that its southern extent is in the flight path of the small aircraft runway and within the FAA-suggested, 5,000-foot buffer for this kind of runway. All of these signs point to limiting the extent of ponds developed in these mining operations if the factors of native waterfowl habitat and food sources are not considered. There is the potential of at least 86 acres or more of postmining ponds. However, the two rivers and the streams within 10,000 feet of the airport create an estimated 85-100 acres of real or potential native habitat in all directions from the airport. Additionally, considering food sources, the dominant land use within this 10,000-foot zone is agriculture, another attractant for birds. The distribution of both native and artificially created waterfowl habitat and food sources around the airport indicates a complex mosaic of real and potential habitat that does not provide a clear picture of risk to aircraft of waterfowl behavior. Due to the possibility that any new water bodies could potentially attract birds, the creation of new ponds cannot be ignored. Limiting the amount of exposed water is the safest alternative. However, the ponds will likely not be the most attractive habitat, and during mining, unattractive. Completion of mining for these permits will occur in the time period from 2015 to 2022. In the next 10 – 20 years, land uses within this area may change due to the expected continuation of high growth and development in the valley, and the ponds may be more or less desirable, depending on the nature of such land use changes. Therefore it is recommended at this time that areas closest to the flight paths be limited in pond development and a program be set up to monitor waterfowl activity around the airport and the mines, as well as changes in the level of bird strikes.

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	**POTENTIAL IMPACTS AND MITIGATION MEASURES**
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	Heavy equipment and facilities including crushers, trucks and loaders will create hazards, but the operator must comply with all MSHA and OSHA regulations. The operator must employ proper precautions to avoid accidents. Excessive and prolonged noise and light could increase stress for nearby residents and induce difficulty sleeping, but ongoing operations are not planned for nighttimes past 10:00 PM. This proposed operation should not significantly affect human health.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	The acreage listed in the Type and Purpose of Action would be taken out of agricultural use and put into industrial/commercial use. Upon completion of mining, the land would be reclaimed to a pond and grain field.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	Existing employees would mainly be utilized for this operation. There is low potential that this project would create a significant number of new jobs.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	Additional taxes may be generated for the county and state in the form of income to the applicant and fuel and highway taxes paid by hauling equipment.
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc) be needed?	The operation would 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?	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?	No wilderness or recreational areas are nearby or accessed through this tract.
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	The project would not add to the population or require additional housing.
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	This amendment would not affect social structures or mores. The area has generally undergone increasing commercial and homesite development in the recent past. The area along Jellison Road has seen several large gravel pit operations go in during the past 10 years as well as a trailer subdivision. The traditional land use has been agricultural, but the area is also underlain by a high quality deposit of sand and gravel. It is predictable that development of the resource would occur.
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	This area is gradually shifting from agricultural to commercial and residential.
21. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	

Alternatives Considered:

A. <u>Denial</u>: The pit would not be permitted and the owner of the gravel resource would be denied full utilization of his property at this time. However, another application could be submitted to revise the existing plan, or an application could be submitted for another site.

B. <u>Approval of the application with mitigating conditions</u>: The Plan of Operation has been written with mitigating conditions including hours of operation, water protection, soil salvage and full reclamation. Also, the

following mitigations are proposed as conditions of approval to be attached to the permit for this site.

In association with Glacier Park International Airport, other operators in the vicinity, and DEQ, Goose Bay must participate in the development and implementation of a waterfowl monitoring/hazard mitigation plan.

Public Involvement, Agencies, Groups, or Individuals contacted:

Flathead County Planning for zoning, US Fish & Wildlife Service, Montana Fish, Wildlife & Parks, Glacier Park International Airport, Federal Aviation Administration. The DRAFT Environmental Assessment will be distributed to the public via notice in the Daily Interlake newspaper for comments. DEQ will accept written responses, e-mail and postal delivery for the entire comment period.

Other Governmental Agencies with Jurisdiction, List of Permits Needed:

No other new permits are needed for this amendment.

Magnitude and Significance of Potential Impacts:

Impacts are unlikely to be significant on the general environment because of the scope and location of the project, the lack of significant or threatened wildlife or habitat, and because of the mitigation measures placed in the Plan of Operation and proposed to be attached to the permit as conditions of approval.

Regulatory Impact on Private Property:

The analysis conducted in response to the Private Property Assessment Act (PPAA) indicates no impact is expected on the use of private property. 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. See attachment for PPAA checklist assessment.

References cited:

Applied Water Consulting LLC. 2007. Groundwater Quality Monitoring and Contaminant Detection Response Plan for Goose Bay Gravel Pit. AWC Project No. 249-07. Prepared for Goose Bay Equipment, Opencut Permit #GBE-001.

Bird Strike Committee-USA. Significant Bird and other Wildlife Strikes. Http//www.birdstrike.org/commlink/signif.htm

Cleary, E. C., R. A. Dolbeer and S. E. Wright. 2004. Wildlife Strikes to Civil Aircraft in the United States 1990-2003: Prepared for Federal Aviation Administration, National Strike Database, Serial Report Number 10.

Federal Aviation Administration. July 24, 2004. Advisory Circular 150/5200-33A; Hazardous Wildlife Attractants on or Near Airports.

Morgenroth, C. Recommendations for the Official Approval of Gravel Excavations Below Groundwater Level with a View to Bird Strike Prevention. Prepared for German Bird Strike Committee.

Noble, R.A. and J.A. Stanford. 1986. Ground-water Resources and Water Quality of Unconfined Aquifers in the Kalispell Valley, Montana. Montana Bureau of Mines and Geology, Open File Report 177.

Ostrander, M.D., P.J. Martin, B. Blackport and M. Picotti. 1998. Impact of Aggregate Extraction Activities on Cold Water Discharge. Groundwater in a Watershed Context. Canadian Water Resources Association.

Raisch, R.W. and R.K. Jeffry. 1988. PM-10 Chemical Mass Balance Study for Kalispell, Montana. Air Quality Bureau, Department of Health and Environmental Sciences, Helena, Montana.

Stanford, J.A., J.V. Ward and B.K. Ellis. 1994. Ecology of the Alluvial Aquifers of the Flathead River, Montana. In: Gilbert J., Danielopol, D.L. & Stanford, J.A. (Eds.): Groundwater Ecology: 367-390. Academic Press, Inc., San Diego, California.

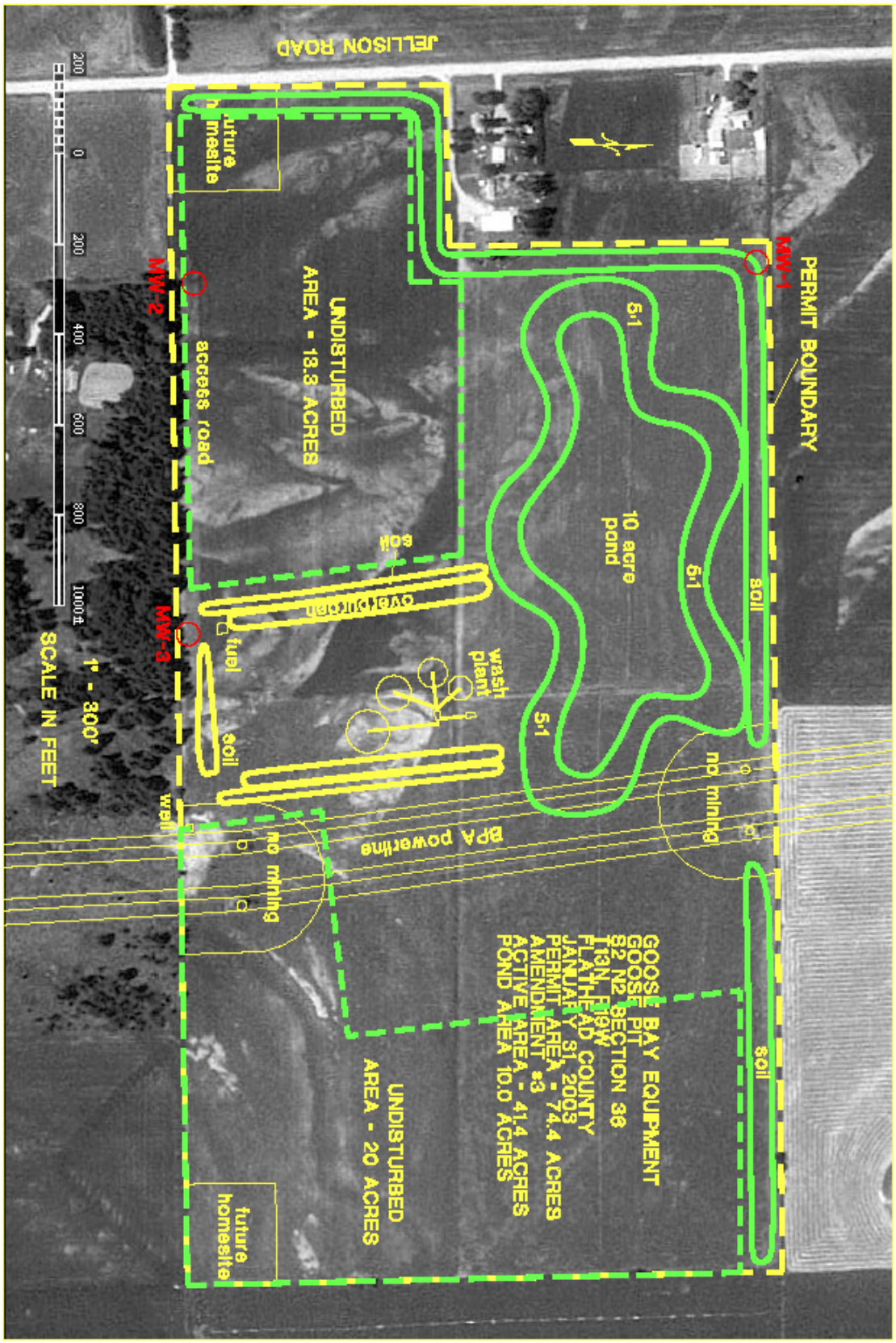
Ward, J.V., J.A. Stanford and N.J. Voelz. 1994. Spatial Distribution Patterns of Crustacea in the Floodplain Aquifer of an Alluvial River. Hydrobiologia, 287: 11-17.

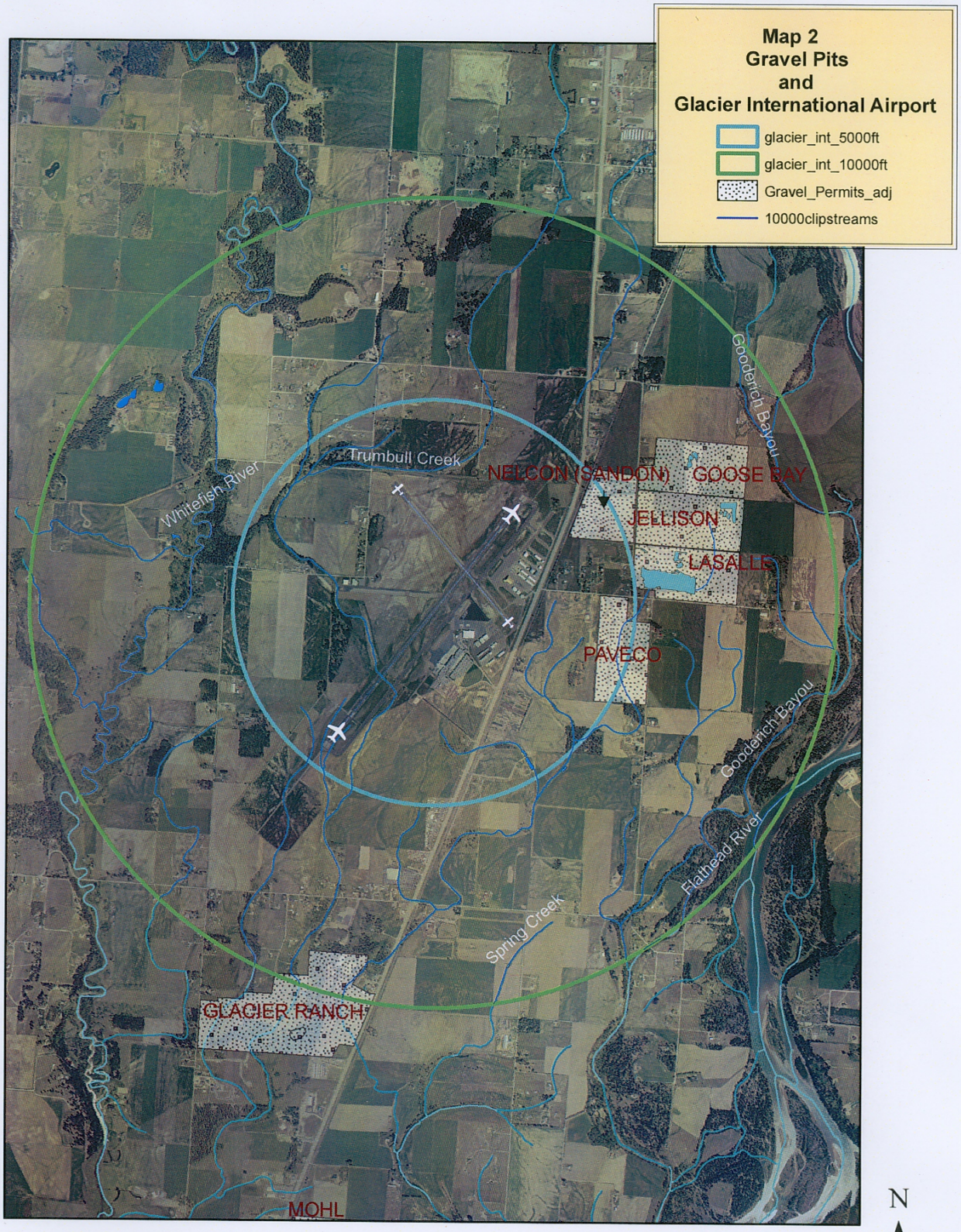
RECOMMENDATION FOR FURTHER ENVIRONMENTAL ANALYSIS:

☐ EIS ☐ MORE DETAILED EA ☒ NO FURTHER ANALYSIS

EA Prepared By:	Rod Samdahl, Environmental Specialist
Review and/or Contributions by:	Peter Mahrt, Opencut Mining Program Supervisor Angela McDannel, Environmental Specialist (Groundwater Hydrology) Julian Calabrese, Environmental Specialist (Soils) Neil Harrington, Chief, Industrial and Energy Minerals Bureau

MAP 1


PERMIT BOUNDARY
MW-1
soil
5:1
10 acre pond
5:1
5:1
no mining
soil
GOOSE BAY EQUIPMENT
GOOSE PIT
S2 N2 SECTION 36
T3N R9W
FLATHEAD COUNTY
JANUARY 31 2003
PERMIT AREA - 74.4 ACRES
AMENDMENT #3
ACTIVE AREA - 41.4 ACRES
POND AREA 10.0 ACRES
UNDISTURBED
AREA - 20 ACRES
future homesite
wash plant
BPA powerline
no mining
soil
fuel
overburden
soil
UNDISTURBED
AREA - 13.3 ACRES
access road
MW-2
MW-3
well
future homesite
JELLISON ROAD
200
0
200
400
600
800
1000ft
1" - 300'
SCALE IN FEET



By: Julian Calabrese 3/7/06

N

PRIVATE PROPERTY ASSESSMENT ACT (PPAA) CHECKLIST

PROPERTY DESCRIPTION: S½ N½, Sec. 36, T30N, R21W; Flathead County

COMPANY NAME: Goose Bay Equipment, Goose Site

DOES THE PROPOSED AGENCY ACTION HAVE TAKINGS IMPLICATIONS UNDER THE PPAA?

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deprive the owner of all economically viable uses of the property?
	X	4. Does the action deny a fundamental attribute of ownership?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? (If answer is NO, skip questions 5a and 5b and continue with question 6.)
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property?
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? (If the answer is NO, skip questions 7a-7c)
		7a. Is the impact of government action direct, peculiar, and significant?
		7b. Has the government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?
		7c. Has the government action diminished property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?

Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b.

If taking or damaging implications exist, the agency must comply with § 5 of the Private Property Assessment Act, to include the preparation of a taking or damaging impact assessment. Normally, the preparation of an impact assessment will require consultation with agency legal staff.