VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Residual Effects
Fish Habitat, Water Quality	Fish habitat may be disrupted during the decommissioning of the facility; long term water quality issues.	**Issue #7 (post-closure plans for minesite):** Redfern has outlined its post-closure planning at a conceptual level in its Project Report for the environmental assessment completed in 1998. Redfern is required to complete these plans to a detailed level in support of a Reclamation Permit. **Analysis:** Full review of detailed plans yet to be developed on decommissioning and reclamation of mine site facilities, would be conducted in support of a provincial Reclamation Permit at a later stage of review. Redfern is aware of potential costs associated with these actions.	1
Habitat, Water Quality	Post-closure impacts	**Issues #8, #9 and 10 (mine site decommissioning activities):** Calculating and establishing financial security for post-closure activities and reclamation is a critical part of provincial *Mines Act* reviews in support of a Reclamation Permit. DFO would participate in the review of plans at the time of detailed reclamation planning. Where post-closure activities affect fish or fish habitat, DFO will scrutinize provincial levels of bonding and secure independent financial instruments of surety as appropriate. **Analysis:** By Redfern's acknowledgement and commitments on the list of outstanding post-closure issues within Redfern's response document, DFO understands that Redfern have considered potential costs of these actions and likely bonding requirements for them.	0
Fish Habitat	Effects from decommissioning discharge system	**Issue #11 (decommissioning effluent discharge facility):** Redfern cite's Komex's report and asserts that removing the under-river portion of its preferred exfiltration system may be more problematic from a fish habitat perspective than leaving it. Redfern suggests that if there are valid technical objections to leaving the buried pipe in place, the pipe and weights could be removed with stipulated protective procedures for installation. **Analysis:** DFO usually does not require pipes placed in rivers to be later exhumed from the bed, as this often would cause substantial short-term habitat impacts that would outweigh longer term exposure problems. Whether this expectation applies here will depend on the ultimate design of the discharge facility, which would not be finalized until a later stage of review. While DFO does not disagree with Redfern's assertion that a pipe could possibly remain upon closure, DFO will look to an updated rationale by Redfern to leave it in place or not upon receipt of final design.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Residual Effects
Fish Habitat	Effects from facilities not appropriately reclaimed	**Issue #12 (reviewer participation in provincial permitting process):** Redfern states that they understand the province would undertake review of reclamation activities through the auspices of the North West Mine Development Review Committee and that federal departments would be invited to participate in the permit applications. **Analysis:** DFO expects that the opportunities for review of detailed decommissioning / reclamation plans would be provided to all interested parties in a subsequent stage of review.	0
Fish Habitat	Infilling Tulsequah River floodplain habitat	**Issue #13 (causeways vs overland route to limestone quarry):** Redfern discusses two alternatives road routes and concludes that the original route involving the causeways is most practical as other options are not economically feasible. **Analysis:** DFO notes that an upland route would rank a higher level of preference in DFO's Policy for the Management of Fish Habitat but is confident that impacts to fish habitat associated with the causeway construction can be mitigated.	1
Water Quality	Water quality at the Canada/ U.S. border	**Issue #14 (mass balance vs "snap shot" of water quality at border):** Redfern suggests that with cleanup of the existing adit discharges through paste backfill and water quality treatment that they anticipate a positive cumulative effect of their project. An aquatic effects monitoring program is being designed in support of a Waste Management Act permit toward this approach. **Analysis**: Given the mine's location in a mountainous terrain with high precipitation, it cannot operate with a zero discharge. During mine operation and after closure, Environment Canada expects metal loadings to the Tulsequah –Taku river system will be much less than present loadings due to eliminating drainage from the old mine adits. Redfern cannot make valid predictions of future metal loadings because it is still compiling flow data for the adit drainage necessary to predict a water balance for the operating mine. Environment Canada will review this information at the time of permitting and assess its effect on predicted water quality in the Taku River at the Canada/U.S. border.	1
Fish Passage	Fish passage at stream crossings	**Issue #s 15, 17, 18, 19, 21 (stream crossings):** Redfern has clarified that they would apply Fish Stream Crossing Guidebook (Forest Practices Code, March 2002) to road crossings of all fish streams, with the assumption that all streams are fish-bearing unless demonstrated otherwise. **Analysis:** DFO anticipates that review of detailed crossing designs needed at an	0

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Residual Effects
		authorization stage of review would confirm that DFO's fish passage and habitat objectives would be met at stream crossings. This would also meet Pacific Salmon Treaty obligations in this regard.	
Fish Habitat	Post-closure failure of culverts causing infilling of streams	**Issue #16 (removal of all culverts):** Redfern has clarified that their proposed access road will be deactivated and that they intend to remove all culverts and bridges. **Analysis:** DFO anticipates that a Fisheries Act authorization would include Redfern's above-stated intentions to remove all bridges and culverts and arrangements could be made with or without Ministry of Forests for bonding those actions that would apply to Redfern or to whoever assumes responsibilities for the road at the end of mine life.	0
Fish Life History	Construction during sensitive fish life history periods	**Issue #20 (adoption of timing windows):** While Redfern's response did not commit to adopt agencies' instream work windows outright, Redfern did indicate that all crossings were amenable to clearspan bridges being launched from one side. Bridge erection plans would be developed as part of final design. **Analysis:** DFO would impose the agencies' instream work windows at crossings of fish streams, including upstream reaches of fish streams, and review the bridge erection plans in support of a *Fisheries Act* authorization. Redfern's commitments to them would be required.	0
Fish Habitat	Impacts at upgraded bridge crossings north of Atlin	**Issue #22 (highway bridge upgrades north of Atlin):** Redfern committed to following DFO's standards and policies at any upgraded stream crossings on the public highway system north of Atlin, and referred to a planning report prepared by the Yukon Territorial Government that assessed options how to accommodate proposed mine traffic. That report refers to three options for accommodating proposed mine traffic: a) no upgrades and current load restrictions would be applied; b) Redfern pays for upgrades; c) YTG pays for upgrades. **Analysis:** Redfern may be responsible to pay for needed upgrades to the public highway north of Atlin to accommodate mine traffic pending future negotiations with Yukon Territorial Government and with stream crossing designs to be proposed at a later stage of review. At that time DFO would be referred for review designs for any highway changes involving stream crossings. DFO also would expect that final design would meet current stream crossing guideline standards that would not result in significant effects. DFO's review would be included in any subsequent environmental assessment conducted by Yukon Territorial Government.	0

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Residual Effects
Fish Habitat	Sediment release from access road	**Issue #s 23, 24 (impacts from sediment release from road):** Redfern clarified various mitigation measures to be reflected in final road design, a Sediment Control Plan and Aquatic Effects Monitoring Plan to be developed as part of a Fish and Fish Habitat Mitigation and Compensation Plan in support of a Fisheries Act authorization. **Analysis:** DFO acknowledges Redfern's intention to use best management practices, monitoring and adaptive management to minimize unavoidable sediment release, particularly at localized sites alongside clearwater channels along Nakonake River utilized for bull trout holding.	1
Fish Habitat	Catastrophic failure of the road infilling fish habitat	**Issue #25 (catastrophic failures of the road):** Redfern clarifies mitigation and planning considerations that would be applied in final road design and monitoring to avoid road failure and asserts that terrain hazards would be avoided. **Analysis:** Analysis of impacts from potential road failures will be conducted during a review of the final road design and all appropriate precautions will be included.	1
Fish Habitat	Sediment release	**Issue #26 (enforcement of mitigation plans):** Redfern clarifies monitoring and reporting activities that they propose to apply during mine life together with proactive design and construction to augment agency enforcement of Canada's laws against sediment release. **Analysis:** DFO notes the results-based approach to resource management recently adopted by the provincial government and reliance on self-regulation by industry would be in keeping with Redfern's proposal.	1
Fish Habitat	Sediment release	**Issue # 27 (road design and gravel supplies):** Redfern has identified various quarry sources to construct a relatively stable all-season haul road. **Analysis**: DFO notes that Redfern focused their response on capability of roads to withstand loadings. DFO understands that appropriate drainage through subsurface and surface design and road crowning also would be required to reduce risks of sediment release under proposed use particularly during inclement weather and spring thaw. DFO would look to final road designs to verify whether appropriate principles to this end would be applied, regardless of gravel haul distances.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Residual Effects
Fish Habitat	Road failures infilling fish habitat	**Issue #28 (road failure in unstable areas):** Redfern explains the steps that would be followed in the Special Use Permitting process to minimize road failures through road design. **Analysis:** DFO is satisfied that appropriate road construction techniques exist to cross the degree of unstable terrain encountered along the proposed route, and would look to final road designs to verify whether appropriate steps and principles to this end are applied.	1
Fish Habitat	Sediment release	**Issue #29 (winter access road construction):** Redfern explains their proposed approach for construction of temporary winter access roads, with detailed plans for review forthcoming at a later stage of review. **Analysis:** DFO notes that difficulties would be encountered to exclude snow from winter road prisms, particularly in the high relief area approaching Sloko River, but would look to review final construction designs and approaches to address remaining issues.	1

Table 2 – Environmental Effects Related to the proposed Tulsequah Chief Mine, Minesite and Access Road on Terrestrial Valued Ecosystem Components (VECs) (Degree: 0-None, 1-Low, 2-Intermediate, 3-High, 4 -Uncertain)

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Grizzly Bear	Baseline information – vulnerability of population	**Issue #46 (ability of grizzly bear populations to absorb additional mortalities):** Redfern responded that as part of the project's adaptive management strategy, Redfern will be implementing environmental protection measures, waste management procedures, employee policies, and traffic management plans designed to significantly reduce the probability for project-related bear mortalities. **Analysis:** The vulnerability of grizzly bear populations within BC is recognized. They have been listed under COSEWIC since May 2002 as a species of special concern, are currently listed under Canada's Species at Risk Act under Schedule 3, and candidate for addition to Schedule 1 pending public consultation in 2004. The Adaptive Management Plan has provided mitigation measures to address concerns regarding grizzly bears with the project and DFO is satisfied that the Province is addressing the issue.	Not applicable (n.a.)
Grizzly Bear	Destruction of "problem" bears at the minesite; bear mortalities through defence of life and property by mine workers and collisions; habitat avoidance	**Issue #s 45 – 55 (baseline info, habitat and population effects on grizzly bear):** Redfern responded to issues raised concerning problem bears, defense of life and property issues, collisions, and habitat avoidance, drawing on its adaptive management plan to minimize and mitigate residual effects observed on the grizzly bear populations near the minesite and along its proposed access road. **Analysis:** Redfern's measures have received support of B.C. Ministry of Water, Land and Air Protection. DFO is satisfied that this matter is being addressed by the provincial government.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Grizzly Bear	Habitat degradation, habitat avoidance, bear mortalities from collisions and encounters, reduced caribou calves prey availability.	**Issue #57 (failure of access management strategies increasing grizzly bear harvest and conflicts);** Redfern responded that based on the rights of Redfern under the Mining Right of Way Act, the current conditions of the SUP, and the management initiatives proposed by Redfern, there is simply no justification for assuming that access management strategies will fail, and that grizzly bear harvest will increase as a result of the project. Currently, no other known developments that would use the Redfern road are proposed for the area. If such an activity was proposed, the proponent would be required to assess the environmental implications of their activities under provincial regulatory processes, and would likely be subjected to their own restrictions and conditions under their Special Use Permit to minimize conflicts with grizzly bears. **Analysis**: BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. DFO understands that the responsible parties have considered the risks and costs of these failures. DFO is satisfied that this matter is being addressed by the provincial government.	1
Grizzly Bear	Habitat degradation, habitat avoidance, bear mortalities from collisions and encounters, reduced caribou calves prey availability.	**Issues # 50-52; 56, 58-66:** Redfern's responses and adaptive management plan discuss mitigation measures to minimize identified risks to grizzly bear. **Analysis:** DFO understands that many of the outstanding issues raised subsequent to the 1998 EA have been included by Redfern in the development of its adaptive management plan and realignments of portions of its proposed access road. Redfern's measures have received the support of the B.C. Ministry of Water, Land and Air Protection. The parties responsible for welfare of these grizzly bear populations are aware of the potential risks and costs that they face to meet those responsibilities during the life of the proposed mine. DFO is satisfied that this matter is being addressed by the provincial government.	1
Caribou	Baseline Information	**Issue #67 (adequacy of info on population dynamics):** Redfern responded that the baseline information collected on caribou for the project area represents perhaps the most comprehensive data set ever collected for a project of this nature. Redfern is confident that, with the use of this baseline information, an effective adaptive management approach for minimizing conflicts with caribou will be realized. **Analysis:** The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Caribou	Baseline Information	**Issue #68 (ability of East Atlin herd to absorb impacts):** Redfern responded that as part of the project's adaptive management strategy, Redfern will be implementing environmental protection measures, employee policies, and traffic management plans designed to greatly reduce and ideally eliminate the probability for project-related caribou mortalities. **Analysis:** The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	n.a.
Caribou	Baseline Information	**Issue #69 (importance of ecological role of caribou):** Redfern states that through the collective protection measures of Redfern and WLAP, the project is not expected to adversely affect the status or stability of the regional caribou population, or the ecological role that caribou play in the region. **Analysis:** The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	n.a.
Caribou	Predation rates, partion of winter range, habitat avoidance	**Issue #70 (predation rates, winter habitat fragmentation, habitat loss):** The potential for the road and associated traffic disturbance to fragment wintering habitat has been addressed in the adaptive management plan. Redfern has agreed that construction activity restrictions and operational traffic management may be required within the O'Donnel River crossing area (Km 95-Km 110) from approximately January 15 to March 15. Management strategies will be dictated by the nature of caribou distribution and habitat use in the vicinity of the road corridor at the time. With such measures, Redfern believes that displacement and habitat fragmentation can be managed to acceptable levels. **Analysis:** Redfern and the BC government have developed a management plan for the Atlin Caribou herd. The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1
Caribou	Increased mortality and decreased survival rates	**Issue #71 (increased mortality and decreased survival rates of East Atlin herd):** Redfern's response states with the proposed adaptive management strategies in place, it is unlikely that the project will result in measurable changes to mortality or survival rates in the Atlin herd. **Analysis:** Redfern and the BC government have developed a management plan for the Atlin Caribou Herd. The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Caribou	Mortality from collisions with mine transport	**Issue #72 (collisions from mine transport):** Redfern notes management concerns in areas where caribou seasonally congregate (O'Donnel River and lower Wilson Creek). In order to minimize the risk for collisions, Redfern proposes strictly enforced speed limits to 50 km/hr. Redfern also describes a mandatory caribou sighting reporting procedure and has agreed to construction activity and operational traffic management in the critical area from 15 January to 15 March as dictated by caribou distribution and habitat use in the vicinity of the road at that time. Further mitigation measures include roadsite reclamation strategy to reduce the attractiveness of the road shoulders and breaks in snow banks at regular intervals to facilitate egress of caribou from the road. Traffic on public roads would comply with road regulations and speed limits. Redfern also offered to participate in provincial or territorial initiatives to reduce risk to caribou from road traffic. **Analysis:** Redfern and the BC government have developed an adaptive management plan for the Atlin Caribou Herd. The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1
Caribou	Caribou mortalities from facilitated predation, and collisions, habitat partitioning and habitat loss	**Issue #73 (past and existing activities reducing the East Atlin herd to a vulnerable state).** Redfern refers to employee policies, activity restrictions and management guidelines within its adaptive management plan to protect caribou. A key objective of the plan is to ensure that the incremental contributions of the project to cumulative pressures on the Atlin herd do not change the current status or stability of the herd. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1
Caribou	Caribou mortalities from facilitated predation, and collisions, habitat partitioning and habitat loss	**Issue #74 (impacts from induced legitimate uses and induced activities):** Redfern's response is in three parts: 1) Under the Mining Right of Way Act, Redfern will have the ability to apply (and enforce) the same SUP and internal company policies and restrictions to authorized, non-mine users of the road as those applied to employees and contractors. Therefore, speed limits, traffic flow restrictions (i.e., convoys) and other traffic management initiatives to reduce conflicts with caribou will be placed on non-mine users of the road. Users refusing to comply with such SUP or internal company restrictions can be refused road use privileges.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Caribou Con't	Caribou mortalities from facilitated predation, and collisions, habitat partitioning and habitat loss	Redfern's Response part 2) Currently, no other known developments that would use the Redfern road are proposed for the area. Redfern's Response part 3) If such an activity was proposed, the proponent would be required to assess the environmental implications of their activities under provincial (and, possibly, federal) regulatory processes, and would likely be subjected to their own restrictions and conditions under their Special Use Permit to minimize conflicts with caribou. **Analysis**: **Analysis**: BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	
Caribou	Caribou mortalities from facilitated predation, and collisions, habitat partitioning and habitat loss	**Issue # 75 (failure of access management);** Redfern expects their proposed access management strategies to succeed, based on rights granted under the Mining Right of Way Act, conditions under the SUP and management initiatives. Redfern notes that the great majority of the caribou range that would be encountered by their proposed road already supports a network of roads and trails that are used year-round, hence their proposal would not represent a significant new access potential into these areas. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1
Caribou	Caribou mortalities from facilitated predation, and collisions, habitat partitioning and habitat loss	**Issue #76 (extension of road usage beyond proposed life of mine exacerbating impacts on caribou)** Redfern responded that under the conditions of the SUP, Redfern is required to decommission the road at the end of the mine's life, and there is no indication that the road life will be extended for any reason. Redfern believes also that effective decommissioning procedures can render the road impassable. While the removal of culverts and bridges are obvious impediments to conventional motorized access, the severe scarification and re-sloping of the road bed in steep side slope areas can make the road impassable to all off-road ATVs even in winter. Redfern is committed to these more aggressive techniques and will finalize their design in the final "Decommissioning Plan" to be completed immediately post-construction, under the terms of the S.U.P. **Analysis:** The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Caribou con't.	Caribou mortalities from facilitated predation, and collisions, habitat partitioning and habitat loss	**Issue #77 (effectiveness of enforcement of hunting and road access restrictions)** Redfern responded that WLAP has re-instated a full time Conservation Officer position at Atlin, and is prepared, with Redfern's financial assistance, to possibly increase manpower on a seasonal basis if road and hunting-related issues become evident. In addition, all mine traffic will be radio equipped and personnel will be required to report unauthorized traffic to Redfern security. Security personnel will be dispatched immediately to intercept unauthorized traffic. With such measures in place, Redfern believes that the enforcement of road and hunting regulations will be effective. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. In addition, the Province of BC is responsible for enforcement of hunting regulations and is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1
Caribou	Caribou mortalities from facilitated predation, and collisions, habitat partitioning and habitat loss	**Issue #78 (effective implementation of adaptive management plans under government funding trends)** Redfern responded that while WLAP has played and will continue to play a role in the adaptive management plan, the majority of the on-going development, maintenance, reporting, and evaluation tasks associated with the plan will be the responsibility of the Environmental Advisory Committee and Redfern, and will be largely funded by Redfern. Therefore, the success of the plan will not be solely dependent on provincial funding. **Analysis**: BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The Province of BC is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	1
Caribou .	Caribou mortalities from facilitated predation, and collisions, habitat partitioning and habitat loss	**Issue #79 (cumulative effects together with those of project on caribou population)** Redfern responded that WLAP currently manages local caribou harvests through a bull only Limited Entry Harvest (LEH). WLAP annually reviews population information, harvest and future harvest strategies for game species in the area. WLAP will work with the proponent to monitor the effectiveness of Redfern's access management initiatives, and will consider adjusting the harvest strategy for ungulates and grizzly bears to compensate for project related losses. WLAP will consider the rights of other resource users in the area, including resident hunters, guide outfitters, and the Taku River Tlingit First Nation in any decision to alter harvest strategies. The preliminary adaptive management plan developed by Redfern and WLAP contains a number of employee policies, activity restrictions and management guidelines focused directly at the protection of caribou. A key objective of the plan is to ensure that the project's incremental contributions to cumulative pressures on the Atlin herd do not change the current status or stability of the herd.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
		Analysis: The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of the caribou herd. DFO and EC are satisfied that this matter is being addressed by the provincial government.	
Moose	Baseline information	**Issues #80 (adequacy of baseline info to trigger adaptive management strategies)** Redfern's response is divided into three parts, the first being that the baseline information collected on moose for the project area represents perhaps the most comprehensive data set ever collected for a project of this nature. Seasonal habitat suitability mapping is based on provincially accepted Terrestrial Ecosystem Mapping standards._The collective information has been used in the development of an adaptive management plan designed to reduce potential conflicts between moose and the project. **Analysis**: The high level support of Redfern's adaptive management plan by BC Ministry of Water Land and Air Protection (Macatee to Macgillivray, 4 May 2004) indicate that responsible parties have considered and find that the potential risks associated with inadequate baseline data acceptable under the circumstances. DFO is satisfied that this matter is being addressed by the provincial government.	n.a.
Moose	Mortality through collisions	**Issue #81 (moose mortalities through collisions)** Redfern responded that they acknowledge the potential for vehicle collisions with moose, particularly in winter when moose can congregate on more restricted winter ranges. Areas that have been identified of concern from the baseline data include the lower Spruce Creek Valley, the O'Donnel River and Dixie Lakes area and the mid Nakonake River valley. To minimize the risk for collisions, the following measures will be implemented: • The maximum speed limits on the Redfern road will be set at 50 km/hr and strictly enforced. • Through a mandatory moose sighting reporting procedure to be followed by all project employees and contractors, moose activity along the road will be communicated to the Environmental Supervisor and passed on to all other project traffic. • Redfern, with technical advice from WLAP, will be developing a roadside reclamation strategy to reduce the attractiveness of the road shoulders to moose and other wildlife. • Breaks in snow banks will be installed at regular intervals to facilitate the egress of moose from the road during encounters with vehicles. With such measures, Redfern believes that road collisions within the project area can be reduced	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
		to minimal levels. **Analysis**: Redfern's adaptive management plan is acceptable to the BC Ministry of Water Land and Air Protection. DFO is satisfied that this matter is being addressed by the provincial government.	
Moose	Increased moose predation	**Issue #82 (moose predation by wolves from winter access)** Redfern's response is that within the project area, moose are known to winter in low elevation, forest habitats in the lower Spruce Creek Valley, and the O'Donnel River and Dixie Lakes area and the road will penetrate these areas. However, these ranges already support numerous roads and trails, and are heavily used by snowmobilers throughout the winter. Therefore, the road does not represent significant new access potential for wolves into the area, and will likely be less attractive to wolves because of mine traffic than other less traveled but packed trails and roads. The road does represent new access potential into the Nakonake River valley. While a collared moose was present in this valley on a year-round basis, the heavy snows in this valley limit its use as a winter range by moose. Consequently, it is unlikely that the road will result in any measurable changes to predation rates in the area. **Analysis**: Redfern's adaptive management plan is acceptable to the BC Ministry of Water Land and Air Protection. DFO is satisfied that this matter is being addressed by the provincial government.	1
Moose	Disruption of predator/prey relationships causing demise of wintering groups of moose	**Issue #83 (moose predator/prey relationship):** Redfern's response was as in #82. **Analysis:** Redfern's adaptive management plan is acceptable to the BC Ministry of Water Land and Air Protection. DFO is satisfied that this matter is being addressed by the provincial government.	1
Moose	Disruption of travel to calving areas	**Issue #84 (moose travel through Big Canyon to calving areas):** Redfern responded that the Big Canyon pass supports high quality habitat for moose in summer, and moderately high quality habitat in spring and fall. Consequently, moose undoubtedly use the pass for much of the year, although no collared animals were located in this area. Redfern continued that it is believed that the road would present minimum, if any, obstruction to animal movements through this pass. As discussed, the pass is several km wide with no terrain constraints to funnel wildlife movements other than the narrow creek canyon itself. The road parallels, rather than crosses the centerline of the pass, falling on the southern side of the pass. This leaves the northern side of the pass free from any direct or indirect disturbance from the road. **Analysis:** Redfern's adaptive management plan is acceptable to the BC Ministry of Water Land	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
		and Air Protection. DFO is satisfied that this matter is being addressed by the provincial government.	
Moose	Metals uptake	**Issue #85 (metals uptake from vegetation below tailings impoundment):** Redfern explained the low likelihood of metals seeping from the tailings pond, and that the proposed monitoring program would expand to include vegetation if metals are detected in groundwater. **Analysis:** This issue has been addressed.	0
Moose	Moose mortalities through collisions, predation, habitat avoidance	**Issue #86 (combined effects of project and hunting on local moose populations):** Redfern responded that WLAP currently manages local moose harvests through a bull only harvest and will continue to monitor harvest levels through Hunter Sample program. WLAP will be closely monitoring the effectiveness of Redfern's management initiatives and will be participating in the on-going evaluation of Redfern's adaptive management plan. Should unavoidable mortalities to moose occur, WLAP and Redfern will evaluate the apparent causes of project-related mortalities, reexamine access and traffic management strategies, and adjust these management strategies as required to reduce further mortalities. The preliminary adaptive management plan developed by Redfern and WLAP contains a number of employee policies, activity restrictions and management guidelines focused directly at the protection of moose. A key objective of the plan is to ensure that the project's incremental contributions to cumulative pressures on moose do not change the current status or stability of the population. **Analysis:** BC Ministry of Water Land and Air Protection supports Redfern's adaptive management plan. DFO is satisfied that this matter is being addressed by the provincial government.	1
Moose	Moose mortalities through collisions, predation, habitat avoidance	**Issue #87 (increased access for hunting):** Redfern responded that based on the rights of Redfern under the Mining Right of Way Act, the current conditions of the SUP, and the management initiatives proposed in the adaptive management plan, Redfern believes that the proposed access management strategies will be effective at controlling unauthorized travel and recreational activities along sections of the road that represent new access potential. Therefore, no measurable increase in access potential and associated hunting in the area is anticipated. **Analysis:** The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of moose. DFO is satisfied that this matter is being addressed by the provincial government.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Moose	Moose mortalities through collisions, predation, habitat avoidance	**Issue #88 (enforcement of hunting and access regulations):** Redfern responded that WLAP has re-instated a full time Conservation Officer position at Atlin, and is prepared, with Redfern's financial assistance, to possibly increase manpower on a seasonal basis if road and hunting-related issues become evident. In addition, all mine traffic will be radio equipped and personnel will be required to report unauthorized traffic to Redfern security. Security personnel and/or appropriate enforcement agencies will be dispatched immediately to intercept unauthorized traffic. With such measures in place, Redfern believes that the enforcement of road and hunting regulations will be effective. **Analysis:** The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of moose and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Mountain Goat	Baseline Information	**Issues #89 (adequacy of baseline info to support adaptive management plan):** Redfern responded that the baseline information collected on mountain goat for the project area represents perhaps the most comprehensive data set ever collected for a project of this nature. Seasonal habitat suitability mapping is based on provincially accepted Terrestrial Ecosystem Mapping standards. This collective information has been used in the development of a preliminary adaptive management plan designed to reduce potential conflicts between goats and the project. **Analysis:** Redfern's adaptive management plan is acceptable to the BC Ministry of Water Land and Air Protection. DFO is satisfied that this matter is being addressed by the provincial government.	n.a.
Mountain Goat	Increased predation	**Issue #90 (abandonment of escape terrain causing increased vulnerability to predation):** Redfern explained that the proposed road route would not intersect any kidding areas, being found at higher elevations. **Analysis:** Issue is addressed.	0
Mountain Goat	Mortalities from avalanche control	**Issue # 91 (avalanche control causing mortalities):** Redfern responded that as part of the adaptive management strategy, aerial surveys (presence/absence) for goats will precede all avalanche control measures from Kp 10 to Kp 20 (Shazah Pass) and from Kp 40 to Kp 55 (Nakonake Valley). Based on the survey results and any additional observational information provided by the Environmental Supervisors, avalanche control measures will be postponed until goats are more than 1 km from any avalanche chute of interest. The current avalanche control plan relies primarily on road closure and use management during periods of high risk, rather than active	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
		controls. **Analysis:** Redfern's adaptive management plan is acceptable to the BC Ministry of Water Land and Air Protection. DFO is satisfied that this matter is being addressed by the provincial government.	
Mountain Goat	Mortalities from avalanche control, habitat displacement, collisions	**Issue #92 (access control measures over the long term):** Redfern responded: Based on the rights of Redfern under the Mining Right of Way Act, the current conditions of the SUP, and the management initiatives proposed by Redfern, Redfern believes that it will have effective access control measures and unauthorized access will be minimized if not prevented. Therefore there is no justification for assuming that access management strategies will fail. **Analysis:** The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provinciai Government is responsible for the management of mountain goat and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Mountain Goat	Mortalities from avalanche control, habitat displacement, collisions	**Issue #93 (enforcement of hunting and access regulations):** Redfern responds that WLAP has re-instated a full time Conservation Officer position at Atlin, and is prepared, with Redfern's financial assistance, to possibly increase manpower on a seasonal basis if the road and hunting-related issues become evident. In addition, all mine traffic will be radio equipped and personnel will be required to report unauthorized traffic to Redfern security. Security personnel will be dispatched immediately to intercept unauthorized traffic. With such measures in place, Redfern believes that the enforcement of road and hunting regulations will be effective. **Analysis:** The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of mountain goat and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Mountain Goat	Mortalities from avalanche control, habitat displacement, collisions	**Issue #94 (collective direct effects, existing hunting and induced hunting on populations):** Redfern responds that at present the goat population in the southern portion of the road experiences low hunting pressure. Research has shown that uncontrolled, new road access into goat range has the potential to increase goat-hunting pressure. Consequently, Redfern will have a manned gate that restricts public access to the southern portion of the road and will also have a no hunting, no firearms policy for all project personnel and contractors. Any unauthorized use of the road or hunting activity observed by project personnel along the road corridor will be reported to Redfern security and will be dealt with immediately. Redfern is committed to the effective implementation of these measures, and WLAP will closely monitor their effectiveness. Should goat mortalities from hunting be identified along the road corridor, WLAP and Redfern will evaluate the location and circumstances associated with the event, re-examine access and traffic management strategies, and adjust these management strategies as required to reduce further mortalities. Redfern continues to note that the preliminary adaptive management plan developed by Redfern and WLAP contains a number of employee policies, activity restrictions and management guidelines focused directly at the protection of goats. **Analysis:** The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of mountain goats and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Thinhorn Sheep	Baseline information, habitat displacement	**New issue (sheep):** TRTFN advises that thinhorn sheep have recently been seen and hunted in the road corridor area, and that there are nearby populations. **Analysis:** DFO is satisfied that this matter is being addressed by the provincial government.	1

Table 3 – Effects of the proposed Tulsequah Chief Mine, Minesite and Access Road on Air Quality, Environmental Changes on Health and Safety, Physical and Cultural Heritage, Use of Lands and Resources, and Historic Archaeological, Paleontological or Archictectural Objects (Degree: 0-None, 1-Low, 2-Intermediate, 3-High, 4 -Uncertain) (also see Table 5 on effects of changes to the environment on other Valued Social Components)

VECs/ VSCs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Air Quality	Emissions from ore transport	**Issue #95 (greenhouse gas emissions):** Redfern responded that after detailed and careful review of all possible or even potentially possible transportation options, Redfern has proposed the present access road option. Barging option in the Taku River was reviewed but because of shallow waters in the Taku River, the barging option was techno-economically unfeasible and therefore not pursued. Redfern re-states that after considerable study of all possible and potentially possible routes, that on the basis of work done, the proposed access road is the best possible option. **Analysis:** The assessment of alternative modes and routes of ore transport was largely conducted by Redfern at an overview level of analysis. The project review committee agreed that Redfern could proceed into the review with their proposed route and mode for assessment as other possible options had costs that Redfern was not prepared to afford and/or were anticipated to have environmental or technical difficulties. The project review committee did not identify air emissions as an issue. DFO understands that air emissions are not a concern under the proposed circumstances.	0
Health and Socio-Economic Conditions		**Issue # 96 (safety mitigation measures along haul route):** Redfern's response referred to previous safety and spill contingency planning developed for the initial environmental assessment concluded in 1998. **Analysis:** The initial environmental assessment completed in 1998 outlined concerns identified by Department of Indian Affairs and Northern Development (DIAND) concerning safety of communities along the proposed haul route, particularly in the Yukon. DIAND also listed some measures that could be applied to mitigate the risk of accidents. DFO understands that Redfern would have to meet public safety standards set by provincial and territorial agencies.	1
Health and Socio-Economic	Navigation	**Issue #97 (final bridge designs):** Redfern's final bridge designs will be referred to Transport Canada and DFO.	0

VECs/ VSCs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Conditions		**Analysis:** Transport Canada, based on discussions with the Proponent, has determined that with the implementation of mitigation measures, the crossings over the Sloko River and Upper Nakonake River will not result in a substantial interference to navigation nor have a significant negative effect on the environment within the vicinity of the bridge crossings. Mitigation measures considered include installation of clear span bridges with a vertical clearance higher than 1.5 m at Q100. The Proponent will ensure these bridges are properly constructed, using the proper safeguards during construction. Transport Canada will work with Redfern to establish the Section 5(1) permit terms and conditions during the Navigable Water Protection Division approval process.	
Health and Socio-Economic Conditions	Economic household costs shifts; trapper success; hunting safety	**Issue #98 (economic shifting from traditional to purchased foods):** Redfern responded that there is no evidence that TRTFN households that rely on traditional foods will face increasing difficulties harvesting sustenance resources. WLAP annually reviews population information, harvest and future harvest strategies for game species in the area. WLAP will work with the proponent to monitor the effectiveness of Redfern's access management initiatives, and will consider adjusting the harvest strategy for ungulates and grizzly bears to compensate for project related losses. WLAP will consider the rights of other resource users in the area, including resident hunters, guide outfitters, and the Taku River Tlingit First Nation in any decision to alter harvest strategies. **Analysis:** The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Health and Socio-Economic Conditions	Hunting safety	**Issue #100 (safety concerns from increased hunting):** Redfern will install locked gates at the crossing of Spruce Creek and at Little Wilson Lake at the time of road construction, and will maintain these gates throughout the life of the project. Signage will be installed at the gates, informing the public of the private and restricted access status of the road, and that unauthorized travel is prohibited, under the Mining RoW Act. Consequently, that portion of the road that represents new access potential in the Spruce / Wilson loop area will be closed to the public. In addition, at mine closure, Redfern will undertake complete road deactivation in gated areas. Deactivation will involve severe scarification and/or re-contouring of the roadbed, the installation of erosion control berms at	1

VECs/ VSCs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
		strategic locations, and re-vegetation. With these measures, the project will have minimal impacts on safety concerns from increased/focused hunting activities. **Analysis:** The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	
Physical and Cultural Heritage	Integrity of heritage trail	**Issue #101 (Integrity of Nakina trail and cultural experience of its continued use):** As a result of the re-discovery of the trail, Redfern participated with TRTFN members in 1997 in establishing an accurate survey of the trail in the area of its proximity to the proposed access road. Subsequently, potential revisions to the road alignment were evaluated to minimize direct impacts. Direct impacts to the Heritage trail have been reduced to only 3 crossings. The length of impact is estimated to be 100 meters. Options to completely avoid the trail area were investigated and were found to be ineffective for three reasons. • First, a lower crossing places the road corridor within terrain Class IV and V and exposes the road to risk of failure from poor rock stability. Zones of talc are exposed on the lower road section. • Second an upper alignment requires crossings of the trail in alternate locations. • Third, an alignment through the upper Sloko valley placed the road within very high grizzly bear and goat habitat and was determined to pose higher risk than the existing locations. The upper Sloko has significantly higher risk associated with unstable slope areas than the chosen route. Redfern also adds the detailed design of the road will be required to accommodate this requirement of minimizing impacts on the Heritage Trail. In addition it should be noted that the road is designed to be a temporary feature and is subject to decommissioning at the end of the mine life pursuant to the requirements of the SUP, as previously discussed in the response to issue 16. TRTFN will retain the ability to utilize the majority of the trail's length in an un-impacted manner and ultimately, the short impacted areas will be decommissioned and re-vegetated. **Analysis:** Ministry of Forests officials in development of Redfern's Special Use Permit considered direct impacts of Redfern's proposed access road and associated disturbance from its use on heritage trails used by Taku River Tlingit First Nation. Issuance of that permit indicates that responsible parties have considered and find the impact to be negligible for the life of the proposed mine. DFO is satisfied that this matter is being addressed by the provincial government.	1

VECs/ VSCs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Physical and Cultural Heritage	Alienation of cultural sites, trails, trap lines, hunting and fishing camps.	**Issue #103 (alienation of traditional lands and associated culutural values):** Redfern responded that the proposed road would be built and operated with strict operating guidelines including a 24 hour manned gate at the O'Donnell River, locked gates in the Spruce Creek area, gun rules, and requirements to qualify for access. This would be supported by an Adaptive Management Plan and wildlife management strategies which are under WLAP jurisdiction. The Adaptive Management Plan is designed to ensure that incremental contributions of the project to cumulative effects do not change the status or stability of the regional wildlife populations. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Use of Lands and Resources	Diminished use of TRTFN heritage trail	**Issue #104 (use of Nakina trail):** Redfern responded that "direct impacts to the Heritage trail have been reduced to only 3 crossings. The length of impact is estimated to be 100 meters. The detailed design of the road will be required to accommodate this requirement and result in minimum impact." **Analysis:** Ministry of Forests officials in development of Redfern's Special Use Permit considered direct impacts of Redfern's proposed access road and associated disturbance from its use on heritage trails used by Taku River Tlingit First Nation. Issuance of that permit indicates that responsible parties have considered and find the impact to be negligible for the life of the proposed mine. DFO is satisfied that this matter is being addressed by the provincial government.	1
Use of Lands and Resources	Diminished sustenance resources from habitat losses, habitat fragmentation, vehicle collisions, and predator/prey relationships	**Issue #105 (reduced caribou, moose, mountain goat):** Redfern responded that given the road use restrictions proposed for the mine, sport hunting patterns will not change for the area. Therefore, traditional land use activities will not be affected from "shifting" sport hunting patterns. The analysis contained in the Adaptive Management Report shows that habitat loss, habitat fragmentation, the effects of vehicle collisions and changes in predator/prey relationships are not likely to diminish sustenance resources. In addition, the adaptive management strategy is designed to ensure that incremental contributions of the project to cumulative effects (whether by habitat losses, fragmentation, vehicle collisions, and predator/prey relationships) do not change the status or stability of the regional wildlife populations. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. Responsible parties have considered and find the impacts to be insignificant for the life of the proposed mine. DFO is satisfied that this matter is being addressed by the provincial government.	1

VECs/ VSCs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Use of Lands and Resources	Disruption of traditional harvesting	**Issue #106 (disrupting traditional harvesting activities):** Redfern responds that some unavoidable minor disruptions to traditional harvesting activities may be experienced during construction. These disruptions will be of a short duration along the immediate road route. Company policies are in place to ensure such disruptions are minimized. During operations, regulated harvesting of game species will continue. In addition, the adaptive management strategy is designed to ensure that incremental contributions of the project to cumulative effects do not change the status or stability of the regional wildlife populations and hence there is no anticipated disruption of traditional harvesting activities. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. Responsible parties have considered and find that potential disruptions of traditional harvesting activities are minimal for the life of the proposed mine. DFO is satisfied that this matter is being addressed by the provincial government.	1
Use of Lands and Resources	Reduction in traditional subsistence and medicinal plants; interference in their harvest	**Issue #107 (subsistence and medicinal plants and their harvest):** Redfern responded that, as indicated in the Project Report, vegetation impacts associated with the project will consist primarily of clearing and removal of vegetation for construction of project facilities and access road. This impact will be temporary. The total estimated surface disturbance of vegetation, including medicinal plants, associated with the access road is estimated at 368 ha, which is a tiny fraction of the overall project area. **Analysis:** The TRTFN are not concerned with actual removal of plants, but more the displacement of Tlingit harvesters due to increased disturbance from vehicles and an increase in use of the area by new land users brought to the area by the new road. BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan include restricted access to the road. Responsible parties have considered and find that potential disruptions of traditional harvesting activities are minimal for the life of the proposed mine. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned when the mine is closed and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Use of Lands and Resources	Diminished sustenance resources	**Issue #108 (sustenance resources);** Redfern responded that restricted access to the road and locked gates will control access between the upper watersheds of Spruce and Wilson Creeks. The project vehicles on the road will monitor unauthorized users of the road and any unauthorized users will be reported. These controls along with the mitigations contained in the Adaptive Management	1

VECs/ VSCs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
		Plan will ensure that sustenance resources remain available to First Nations. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	
Use of Lands and Resources	Shift of subsistence hunting to more distant territories	**Issue #109 (shifting distribution of sustenance hunting):** Redfern responds that given the road use restrictions proposed for the mine, sport hunting patterns will not change for the area. Therefore, traditional land use activities will not be affected from "shifting" sport hunting patterns. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Use of Lands and Resources	Increased competition with non-TRTFN hunters	**Issue #110 (increased non-native use of traditional trails and cabins).** Redfern's response notes that the trails are used for 3-4 months every year indicating a limited degree of impact. Further, given the road use restrictions proposed for the mine, non-TRTFN hunters, fishers and other backcountry users will have no incremental access to TRTFN trails. Hence, competition for sustenance resources and conflict with sustenance harvesting is not anticipated to increase as a result of the Project. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Use of Lands and Resources	Diminished / fragmented wildlife habitats and populations reducing alternative territories for sustenance harvesting	**Issue #111 (Availability of alternate areas for sustenancehunting);** Redfern responded that the analysis supporting the Adaptive Management Plan shows minimal effects of the road and that would result in insignificant diminishing or fragmentation of wildlife habitat or wildlife populations. It is anticipated that there will be no reduction of access to temporary "rest" alternative territories for wildlife. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and	1

VECs/ VSCs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
		Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife. DFO is satisfied that this matter is being addressed by the provincial government.	
Use of Lands and Resources	Hunting restrictions to compensate for project effects affecting subsistence hunting	**Issue #112 (reliance on hunting restrictions to compensate for project and cumulative effects affecting subsistence hunting)** Redfern responded that WLAP annually reviews population information, harvest and future harvest strategies for game species in the area. WLAP will work with the proponent to monitor the effectiveness of Redfern's access management initiatives, and will consider adjusting the harvest strategy for ungulates and grizzly bears to compensate for project related losses. WLAP will consider the rights of other resource users in the area, including resident hunters, guide outfitters, and the Taku River Tlingit First Nation in any decision to alter harvest strategies. **Analysis**: BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Use of Lands and Resources	Increased access to Nakina camp area diminishing its value for TRTFN subsistence fisheries and other traditional uses.	**Issue #113 (effects on resource values at Nakina camp);** Redfern responded that given the road restrictions proposed for the mine, there will be no increased access to the Sloko and Nakina Rivers. Therefore, traditional fisheries activities will not be affected by additional fisheries activity related to the Project. In addition, Redfern's No Hunting or Fishing Policy will apply to all mine related road users, both for mine employees and mine contractors. This will ensure that users of the road will not affect authorized traditional fisheries activities. **Analysis**: BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. DFO is satisfied that this matter is being addressed by the provincial government.	1

VECs/ VSCs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Use of Lands and Resources	Hunting restrictions to compensate for project effects affecting subsistence hunting	**Issue #114 (ban on goat hunting to compensate for project and cumulative effects affecting subsistence goat hunting):** Redfern responded that as stipulated in the S.U.P., Redfern will comply with and fully enforce the Tulsequah Chief Firearm, Fishing and Vehicle Use Plan of January 1998 as outlined in Appendix II of the Tulsequah Chief Project Committee's Recommendations Report. The manned gate at the O'Donnel River will restrict traffic on the road which must adhere to the company's firearm policy. WLAP annually reviews population information, harvest and future harvest strategies for game species in the area. WLAP will work with the proponent to monitor the effectiveness of Redfern's access management initiatives, and will consider adjusting the harvest strategy for ungulates and grizzly bears to compensate for project related losses. WLAP will consider the rights of other resource users in the area, including resident hunters, guide outfitters, and the Taku River Tlingit First Nation in any decision to alter harvest strategies. **Analysis:** BC Ministry of Water, Land and Air Protection supports Redfern's adaptive management plan. The BC Provincial Project Approval Certificate stipulates that the road be decommissioned and Redfern Resources Ltd. has agreed to this stipulation. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1
Use of Lands and Resources	Sustenance harvesting	**Issues # 114 (bans on hunting affecting TRT);** Redfern indicates that any needed adjustments of harvest allocations would take into consideration the rights of other resource users, including resident hunters, guide outfitters, and the TRTFN. **Analysis:** DFO is satisfied that this matter is being addressed by the provincial government and notes that the proposed approach to hunting allocation issues has received provincial support.	1
Historical, Archaeo-logical, Paleonto-logical or Archictect-ural Objects	Disruption of archaeological resources	**Issue #115 (results of archaeological assessment);** Redfern advises that their Special Use Permit requires that an archaeological assessment be conducted along the Nakonake route and in the vicinity of proposed crossings of the TRTFN heritage trail for provincial approvals before construction commences. The road design also is to mitigate impacts to the heritage trail. These assessments have yet to be completed. **Analysis:** DFO understands that Redfern's proposed approach addresses this issue.	0

Table 4 – Effects of the Environment on the Project

Note: Residual effects are not considered here, as they are effects on the project and not on VECs, and therefore do not contribute to the Cumulative Environmental Effects.

Project Component	Potential Adverse Effects to the Project Caused by the Environment	Mitigation measures
Tailings Facility	Flooding causing erosion and failure of the proposed tailings facility.	See discussion in Table 1, Issue # 4.
	Catastrophic event causing failure of the proposed tailings facility.	See discussion in Table 1, Issue # 3
Access Road	Flooding causing failure of proposed road stream crossings	See discussion in Table 1, Issue # 23, 24, 26, 28
	Catastrophic event causing failure of the proposed road.	See discussion in Table 1, Issue #25, 28.
Exfiltration System	Flooding causing failure of proposed exfiltration system	**Further to Issue #6** (also in Table 1). The Komex design (Redfern response Appendix 9, Item 6) suggests that burial of the exfiltration pipe 3 m below the surface of the Tulsequah floodplain would exceed scour depth of the seasonal jokuhlaup on the river. DFO is not aware whether hydrogeological modelling has confirmed a return period for scour depth on the system. Contingency plans yet to be developed, were recommended in the Komex report in case of damage to the system from bedload movement. **Analysis**: DFO would expect that if a buried exfiltration system is accepted, then its final design would necessarily include for development and review a fluvial geomorphological substantiation of its burial depth, and contingency plans in case of damage.

Table 5 – Effects of Changes to the Environment on Valued Social Components (VSCs)

VSCs	Potential Direct Effects of Changes to the Environment on VSCs	Mitigation	Residual Effects
Human Health and Socio-Economic Conditions	Discharge of mine effluent accumulating metals levels in tissues of fish for consumption	This was addressed in the initial environmental assessment completed in 1998. Effluent standards would be required to meet Canada's Metal Mine Effluent Regulations. Metals in fish tissues will be monitored as part of the Aquatic Effects Monitoring program	0
Structure, site or thing of historical, archaeological, paleontological or architectural significance	Disruption of archaeological resources	**Issue #115 (Archaeological assessments):** Redfern's response identifies pre-construction requirements under its Special Use Permit to conduct archaeological impact assessments for heritage trails along the north side Nakonake River route, km 45-60, and km 63-80 regarding the Taku River Tlingit First Nation Heritage Trail (see Issue #104 below). These assessments have yet to be conducted, but will be submitted for approval to the provincial government and other approving agencies. **Analysis**: DFO is satisfied that the provincial review process will address issues regarding archaeological resources. DFO notes that Redfern's proposed approach to address archaeological resource issues has received high level provincial support. The responsible parties are aware of the potential risks and costs involved.	0
Current use of lands and resources for traditional purposes by First Nations	Preclusion of options within TRTFN Land Use Planning	**Issue #102 (TRTFN Land Use Planning);** Redfern responded that the construction of the access road will result in some changes and disturbance to the land within the traditional territory of the TRTFN, as will many other disturbances unrelated to the mine or its access road. But this change will be to a minimal extent with respect to TRTFN's opportunities in designing protection measures for their traditional territories, community health and future well-being. The regulatory process in British Columbia has ensured that all aspects of the project have been subjected to the closest scrutiny, both by government experts but also by publics including the TRTFN. It should also be remembered that the designed road is intended to be a temporary structure and the stated concerns must be taken into context with that fact and the reclamation practices which will be undertaken as part of the de-commissioning process.	1

VSCs	Potential Direct Effects of Changes to the Environment on VSCs	Mitigation	Residual Effects
		Analysis: Land use planning is a matter that is addressed by the province. DFO is satisfied that this matter is being addressed by the provincial government.	
Subsistence, Recreational and Commercial Fisheries	Interruption of fisheries	Interruptions of fisheries such as by occasional barge trips up Taku River would be minimal.	0
	Reduced fish stocks	The previous environmental assessment that concluded in 1998, augmented by further discussion on potential impacts on fish and fish habitat in Tables 1, 3 and 6 in this document suggest that impacts of the project would pose low risk on fisheries resources and thereby low risk to fisheries.	1
Trapping Trapping, Con't.	Disruption by proposed road	**Issue #99 (reduced trapping success):** Redfern responded that they have consulted with trappers potentially affected by the project throughout its application process in an attempt to reduce conflicts with this land use activity. For example, based on discussions with the registered trapper in the Dixie Lake area, the alignment of the road was shifted to reduce disturbance to traditionally important trapping areas. Redfern is committed to continuing consultation with trappers to resolve conflicts wherever possible and to fair compensation for trappers where conflicts cannot be resolved. **Analysis:** DFO notes that Redfern's proposed approach to address trapping issues has received provincial support. The responsible parties are aware of the potential risks and costs in this regard. The Provincial Government is responsible for the management of wildlife, land use and the enforcement of hunting regulations. DFO is satisfied that this matter is being addressed by the provincial government.	1

Table 6 – Accidents and Malfunctions Related to the proposed Tulsequah Chief Mine, Minesite and Access Road (Degree: 0-None, 1-Low, 2-Intermediate, 3-High, 4 -Uncertain)

VECs	Potential Direct Effects	Discussion of Issues and Mitigation Measures (Issue # reference to Redfern Response, April 2004)	Degree of Residual Effects
Water Quality	Spilling toxic materials into fish streams	**Issue # 30, 32 (spills and emergencies):** Redfern has identified spill response measures applicable to the proposed private industrial road. Redfern continues that they intend to reduce haul loads during spring thaw conditions, citing an example where this practice enables year-round hauling under similar climatic conditions elsewhere. **Analysis:** DFO understands that Redfern has proposed an emergency plan for the access road and Redfern would have to meet standards for transportation on provincial and territorial Highways departments along the route and comply with Canada's *Transportation of Dangerous Goods Act* regarding transportation containers.	1
	Debris from road or crossing failures in streams.	**Issue #25, 31 (cleanup of road failure or spills);** In addition to road design to help avoid accidents as discussed, Redfern's response defers development of emergency response to emergency situations to an operations and maintenance plan as part of the Special Use Permit it obtained for its road. **Analysis:** Debris from road or crossing failures can be disruptive to fish habitat, and can take years for natural instream geomorphologic processes to stabilize the channel. The Special Use Permit reduces the risk for road failure or spills.	1