



MEMORANDUM

STATE OF ALASKA

Department of Natural Resources
Office of Habitat Management and Permitting

TO: Joe Donohue
Department of Natural Resources
Division of Coastal and Ocean Management

DATE: February 12, 2008

FILE: AK 0711-04J

THRU:

SUBJECT: Redfern Resources Ltd.
Tulsequah Chief Mine, B.C.
Taku River Transportation Plan
ACMP Review, 2nd RFAI

FROM: Jackie Timothy
Habitat Biologist

TELEPHONE: 465-4275

Habitat Biologists from the Department of Natural Resources Office of Habitat Management and Permitting (OHMP) coordinated with Area Management Biologists from the Alaska Department of Fish and Game (ADF&G) and reviewed Redfern Resources Ltd.'s (Redfern) response to our December 21, 2007 Request for Additional Information.

Project Description

A shallow draft tug will move the ACBs through the river corridor when water conditions allow. Amphitracs will move the ACBs over the river during winter when the river is frozen. The amphitracs will move or assist in maneuvering the ACBs across the Taku River tidal flats during spring break-up and fall freeze-up and throughout the open water period as needed. During the spring, summer and fall when ADF&G is conducting research in the west channel, the amphitracs and ACBs will travel over the Canyon Island east side beach. If the west side of Canyon Island is impassable during the winter because of ice buildup, the vessels will continue to use the Canyon Island east side beach. The transport will occur throughout the year with an average of six round trips per week.

If the project is found consistent with the ACMP and the State of Alaska permits the proposed activity, vessel operators will be transiting the Taku River in accordance with an Operations Plan developed cooperatively with the State. The Operations Plan includes measures to protect fish and wildlife resources and habitats, and operation, communication, environmental monitoring, modification, and compliance protocols. The Operations Plan makes assumptions about the performance of the vessels which are based on the manufacturers' statements and specifications. Redfern will have a third-party contractor conduct field trials in Oregon to test the performance of the vessels. Redfern will only accept delivery of the vessels if they meet the manufacturers' statements about performance, and will provide the State with a copy of the third-party contractor's analysis.

If the State agrees the vessels meet or exceed the performance standards described in the Operations Plan, OHMP will issue a Title 41 Fish Habitat Permit to authorize transportation route trials for one year in the Taku River. A Title 41 Fish Habitat Permit requires Redfern to assure free fish passage, restore any obstruction to free fish passage to OHMP's satisfaction, and ensure the proper protection of

anadromous fish and their habitat. In the Fish Habitat Permit, OHMP would reserve the right to require mitigation measures to remedy disruption to fish and fish habitat created by the project which was a direct result of failure to comply with the permit. State of Alaska Biologists will participate with Redfern's Environmental Compliance Monitor in the trials to monitor the activity and ensure compliance with the Fish Habitat Permit. If Redfern demonstrates that fish habitat and wildlife transit are not adversely affected by the vessels during the route trials, OHMP would extend the Title 41 Fish Habitat Permit for at least one more year or longer depending on results of monitoring during the first year.

Standard of Review

We are reviewing the project for consistency with the ACMP against the Habitats and Transportation standards. 11 AAC 112.300 Habitats identifies habitat types. The habitat types within the project area include: estuaries, wetlands, tideflats, rivers, streams, and lakes and their active floodplains and riparian management areas. These different habitat types must be managed to specific standards, including avoid, minimize or mitigate significant adverse impacts to competing uses, water flow, circulation, drainage patterns, and natural vegetation within the riparian management area. The riparian management area, for a braided portion of a river, is 500-feet on either side of the waterbody measured from the outermost extent of the ordinary high water mark. 11 AAC 112.280 Transportation Routes and Facilities states that transportation routes must avoid, minimize or mitigate alterations in surface and ground water drainage patterns and disruption to wildlife transit or traditional access. To avoid disruption to wildlife transit, it is necessary to consider wildlife habitats.

Request for Additional Information

A point by point consideration of Redfern's response to OHMP's December 21, 2007 request for additional information follows:

1. Response provided but inadequate. The amphitrac and ACB are being built to the manufacturers' specifications. Redfern has hired third-party marine engineers to ensure that the amphitrac and ACB are built to spec and meet the performance standards Redfern included in the Plan of Operations. The amphitrac and ACB will also undergo classification by the American Bureau of Shipping. Therefore, we agree that engineering design details are unnecessary. We still require the gross tonnage of the amphitrac to complete the review of the proposed transportation plan.
2. Response provided but inadequate. Redfern will test the footprint of both the amphitrac and ACB, the wake from the ACB at various distances and speeds, underwater and above surface noise of amphitrac and ACB at various distances and hover heights, the wind effect under the ACB as it moves from water onto land and the effect of the ACB keel. Please provide the methods the third-party contractor will use to gather this data for amphitrac and ACB. Additionally, please provide the methods the third-party contractor will use to determine the disturbance below the amphitrac and ACB in the water column, the disturbance caused by the Archimedes screws and retractable metal wheels¹ in silt, mud, sand, gravel and cobble, and the disturbance caused in silt, mud, sand, gravel and cobble by anchoring the amphitracs to winch a fully loaded ACB out of the water and onto the land. Since Redfern will not be able to obtain

¹ Is the keel different from the retractable wheels?

information related to operations on ice or in snow in Oregon, the agencies will review the third-party contractor reports to assess if the amphitrac and ACB were built to spec and meet the performance standards included in the Plan of Operations. If the amphitrac and ACB meet the performance standards, then impacts to habitats and resources can be avoided or minimized. Therefore, we agree to work with Redfern to collect a separate series of observations and measurements on ice and on the open water as described in Redfern's January 18, 2008 Memo. The Division of Mining, Lands and Water is willing to issue you a letter of non-objection to test the vessels on the gravel bars off of Sheep Creek south of Juneau or at the Eagle River beach north of Juneau. However, the State will require you to have a Fish Habitat Permit and Land Use Permit before collecting data on the Taku River.

3. Response provided but inadequate. Please provide the missing Appendix B described in the Environmental Document on page 4-28, section 4.5.5.3, page 5-33, and section 5.8.2.1. This includes the wildlife management plan, the bear/human management plan, the specifics of the wildlife right-of-way policy, and the procedures you will use for wildlife sightings, incident reporting, and adaptive management.
4. Response provided but inadequate. The Taku mainstem channel profile was included as Attachment 2. Although this additional information is valuable, it does not clearly address the wetted width of the thalweg above the sand flats area during low flow periods or transition seasons. The information was also gathered during record high summer flood discharges. It is noted in Attachment 2 that "Measured channel depth data was corrected using the stage-discharge relationship for the USGS's hydrology station at Canyon Island for the upstream end of the survey..." Interpretation of this data indicates that during low flow periods, there will be additional ground contact above the sand flats area as far upriver as Yehring Creek.
5. Response is adequate.
6. Response provided but inadequate. Thank you for providing the maps containing spawning and rearing habitat along the barge route for salmonids and eulachon. Please include wildlife habitat on this map based on the information exchanged with the State to this point, the additional information you will be submitting with the wildlife management plan and the additional information you are providing in the supplemental wildlife surveys. State of Alaska biologists will submit additional resource information for inclusion. For all information regarding marine mammals, please consult Aleria Jensen at (907) 586-7248 or email Aleria.Jensen@noaa.gov or Erika Phillips at (907) 586-7312 or email Erika.Phillips@noaa.gov with NOAA National Marine Fisheries Service. OHMP may include additional surveying, mapping and monitoring requirements as conditions of the Fish Habitat Permit.
7. Response is adequate at this time. Redfern will need to provide the species specific protocol the Environmental Monitor will follow when mapping fish and wildlife resources and habitats to OHMP before the Fish Habitat Permit is issued.
8. Response is adequate at this time. It is our understanding the third-party contractor will evaluate potential impacts to rearing fish, specifically stranding and entrainment. Redfern will need to

provide the specific protocol the Environmental Monitor will follow when monitoring fish and wildlife resources and habitats to OHMP before the Fish Habitat Permit is issued.

9. Response is adequate.
10. Response is adequate at this time. Please be advised that ground contact in areas of salmon or eulachon spawning will be considered an incident. Reporting requirements for fish and wildlife incidents may be included as a condition of the Fish Habitat Permit.
11. Response is adequate.
12. Response provided but inadequate. Please provide the Wildlife Right-of-Way Policy.
13. Response provided but inadequate. We will require the Wildlife Management Plan before your response is considered complete.
14. Response provided but inadequate. We will require the Wildlife Management Plan before your response is considered complete.
15. The response is adequate.
16. Response provided but inadequate. Our expectation is that Redfern will provide a thorough and detailed explanation of what the potential conflicts are with each species of concern and how they propose to avoid, minimize, or mitigate these impacts in the Wildlife Management Plan.
17. Response is adequate. OHMP may require Redfern to monitor ice stability as a condition of the Fish Habitat Permit.
18. Response provided but inadequate. Please provide the methods the Environmental Monitor will use to monitor channelization, siltation and sedimentation, wake height and bank erosion attributable to the amphitrac and ACB in the Taku River. Specifically provide a suggested protocol for measuring potential impacts to spawning habitats on the east side of Canyon Island.
19. Response is adequate. The Fish Habitat Permit may specify reporting requirements for the removal of large woody debris that poses a risk to life or property.
20. Response is adequate. The State will meet with Redfern quarterly the first year and yearly thereafter. The State will approve changes to the Operating Plan.
21. Response is adequate.

We are including two outstanding items from the DNR Division of Mining, Lands and Water, per their request.

22. Please elaborate on your conclusion that glacial outburst floods will not affect the operation of the barging system in any significant way.
23. Redfern has previously indicated to DNR/DMLW that it would provide more detailed information to support an appropriate bond amount. Although DNR agreed to “a minimum of \$250,000” as a preliminary value to act as a placeholder in the public notice process, no additional information in support of this or an alternate number has been submitted to date. DNR is concerned that this minimum amount may not cover the expense of salvaging a stranded amphitrac and ACB in a reasonable range of locations, weather and environmental conditions, given the relative inaccessibility and variability of wind, river and ice that may be expected within the proposed operating area. Please provide a more detailed breakdown of potential costs considering the effects of these conditions on the potential expense of a theoretical salvage effort, along with a revised proposed bond amount based on this analysis.

This completes our 2nd request for additional information. We look forward to Redfern’s response. Thank you for the opportunity to comment.

Advisory: The Marine Exchange in Juneau employs GPS transponders for (near) real time tracking of vessels. A GPS transponder may be included as a condition of the Fish Habitat Permit.

Advisory: A taking of marine mammals is federally regulated under the Marine Mammal Protection Act. Please consult Aleria Jensen at (907) 586-7248 or email Aleria.Jensen@noaa.gov, or Erika Phillips at (907) 586-7312 or email Erika.Phillips@noaa.gov with NOAA National Marine Fisheries Service.