Northwest Territories Environment and Natural Resources

SEP 2 2 2006

Mr. Vern Christensen
Executive Director
Mackenzie Valley Environmental
Impact Review Board
200 Scotia Centre
PO BOX 938
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Dear Mr. Christensen:

Final Comments on Paramount's SDL8 2D Seismic Program, EA0506-007

The Government of the Northwest Territories (GNWT) has reviewed the above program and would like to submit the following final comments on Paramount's SDL8 environmental assessment.

Seismic Cut Line Widths

Despite the rationale provided by GNWT in our responses to IR0506-007-7 and IR0506-007-8, Paramount Resources Ltd. has not committed to narrowing new cut line widths to a distance less than the 6 metres (m) originally applied for in their initial application. The GNWT does not view a 6 m minimum line width as sufficiently narrow to minimize adverse effects to wildlife.

In the National Energy Board's (NEB) response to IR0506-007-14, NEB states that seismic techniques as outlined in Indian and Northern Affairs Canada (INAC) "Environmental Operating Guidelines: Northern Seismic Operations" have been followed and noticeably improved upon by industry. The GNWT, however, does not believe that an improvement on 18 year-old guidelines is sufficient in this case. Paramount Resources Ltd. acknowledge that, depending on equipment availability they could use mulchers and/or dynamite to reduce line widths. The GNWT seeks a firm commitment to make this equipment available and to use these techniques. Using low impact techniques and maximizing the amount of line width kept to 1.5 m will lessen impacts to wildlife and reduce the amount of timber removed from the project area.

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The impact matrix in response to IR0506-007-18 concludes that a heli-portable program would result in the greatest potential impact to wildlife species. However, Paramount's basis for the analysis was that the "time taken to carry out the various seismic methods is related to the impact on wildlife". GNWT staff believe that the long-term impact of clearing associated with 5 and 6 m lines would have a greater impact to wildlife than the short-term disturbance that might occur during heli-portable operations.

The GNWT would like to see Paramount conduct their seismic exploration during the winter months using a heli-portable technique. Paramount proposes to conduct the seismic in winter but state that during the winter, limited daylight conditions reduce the working day to an impractical length for using helicopters. Paramount's comment that they would have insufficient daytime lengths is an inadequate reason to avoid using this technique. Helicopters can be based very close to the work site (e.g. Indian Cabins or Cameron Camp) to maximize available daylight hours.

Windrow Break Frequencies and Length of Break

Paramount Resources Ltd. proposes to create 7 m breaks in windrows every 400 m along the cut lines. In GNWT's letter of October 11, 2005, to the Mackenzie Valley Land and Water Board during the Preliminary Screening the GNWT requested that Paramount Resources Ltd. create windrow breaks of 10 m every 60 m to minimize the disruption of natural wildlife movements across the landscape. This ratio was first applied in the NWT during the construction of the Norman Wells to Zama pipeline in the early 1980's and since then it has become GNWT's standard suggestion for windrow design. Paramount should be familiar with this standard since it is a condition of their oil and gas exploration Land Use Permit MV2002A0046 for the Cameron Hills area. Condition 61 reads as follows:

The permittee shall store all brush and debris cleared from right of ways, the airstrip, camps, well sites, central battery, quarry/borrow sites and staging areas by:

(a) windrowing the debris and brush to the side of the line or clearing; and

(b) making breaks in the windrow of at least 10 m wide at intervals of not more than 60 m.

GNWT suggests that Paramount Resources Ltd. standardize its windrow break frequencies and length of break. As well as affording wildlife protection, windrow breaks reduce the spread of any forest fire that may occur in an area. Forest fires will spread down old seismic lines using windrows as a source of fuel. A high frequency of breaks in the windrow helps reduce spread and eases the workload of fire fighters should the fire need to be fought.

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Wildlife

Consistent with obligations under section 79 of the Federal *Species at Risk Act* (SARA), adverse effects to Boreal woodland caribou associated with this project must be identified, mitigated and monitored by the company. The government of Canada subsequently passed SARA to ensure the recovery of species at risk and to prevent other species from becoming at risk. SARA requires that certain considerations are addressed during the environmental assessment phase of the project. Specifically, it requires that:

- Adverse effects of the project on listed wildlife species and their critical habitat be identified;
- All measures have been taken to avoid or lessen those adverse effects in a way that is consistent with any applicable recovery strategy or action plan; and
- Monitoring is undertaken in respect of those adverse effects.

Anecdotal sightings, reported by Paramount Resources Ltd., of woodland caribou on cleared areas such as leases and cutlines in previously disturbed areas in the Cameron Hills does not demonstrate that their use of these areas is unaffected. In northern Alberta, research has shown that caribou reduce their use of suitable habitat in proximity to seismic lines, roads and well sites.[1] Because of this avoidance factor, in northern Alberta roads act as partial barriers to caribou movement, potentially restricting caribou use of range areas.[2] GNWT's own research shows that woodland caribou use areas adjacent to cutlines and other linear features less than would be expected, even in areas of low linear densities.[3] GNWT requests that a detailed mitigation and monitoring strategy be developed by Paramount Resources Ltd. in conjunction with our South Slave Regional Biologist, Ms. Deborah Johnson to meet SARA obligations.

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[1]Dyer, S. J., J. P. O'Neill, S. M. Wasel and S. Boutin. 2001 Avoidance of Industrial development by woodland caribou, Journal of Wildlife Management 65:531-542.

[2] Dyer, S. J., J. P. O'Neill, S. M. Wasel and S. Boutin. 2002. Quantifying barrier effects of roads and seismic lines on the movements of female woodland caribou in northeastern Alberta. Canadian Journal of Zoology 80:839-845.

[3] Nagy, J., D. Auriat, W. Wright, T. Slack, I. Ellsworth, and M. Kienzler. 2005. Ecology of Boreal Woodland Caribou in the Lower Mackenzie Valley, NT:Work Completed in the Inuvik Region April 2003 to November 2004. Department of Environment and Natural Resources, GNWT. Inuvik, NT. 55 p.

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Reseeding

Paramount Resources Ltd. state that in the event that erosion control on a cutline is necessary, reseeding will be undertaken with a seed mix already approved by the NEB and the GNWT for use in the Cameron Hills area. In GNWT's response to IR 1.2.45 for EA 03-005 Paramount Cameron Hills Extension requirements for seed mixes recommended were: that indigenous species are preferred, that invasive exotics are excluded, and that fall rye not make up more than 50 percent of the mix. Also in this response is a discussion of the likely requirement for several mixes suited to particular site conditions (i.e. mesic, wet and dry sites). This holds true for the current project. As there is some latitude in developing mixes for site specific conditions, GNWT requests that the make-up of specific mixes be provided to GNWT-EA who will seek approval from Forest Management Division and Wildlife Division prior to use. The best means of ensuring that invasive exotics and weeds are not introduced is a seed batch analysis that should be provided to the Land Use Inspector prior to seed batch approval.

Cumulative effects

Paramount Resources Ltd. did not identify other land uses in the area that could have spatial overlap with the proposed project (i.e. timber harvesting). Nor did they acknowledge the state of disturbance already on the landscape (i.e. density of existing linear disturbances). The caribou herds in this area cross the Alberta/NWT border and landscape disturbances in northern Alberta will also impact negatively on the herd size and area of available suitable habitat. A drastic decline in a substantial number of woodland caribou herds in other jurisdictions is known to have occurred largely as a result of the combined effect of land use pressures.[4] The lack of acknowledgement by Paramount Resources Ltd. that they are contributors to such land pressures notwithstanding, the company should be obliged to not only mitigate the effects of their project but also to monitor the success of those mitigations. A mitigation and monitoring strategy, as referred to above, would help to manage and monitor cumulative effects in the project area.

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[4] McLoughlin, P.D., E. Dzus, B. Wynes, and S. Boutin. 2003. Declines in populations of woodland caribou. Journal of Wildlife Management 67:755-761.
Spalding, D. 2000. The early history of woodland caribou (Rangifer tarandus caribou) in British Columbia . BC Ministry of Environment, Lands and Parks, Wildlife Branch, Victoria BC. Wildlife Bulletin No. 100, 61pp.

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Should you have any questions regarding the above, please contact Mr. Joel Holder, Environmental Assessment Analyst at 920-6106.

Sincerely,

R. P. Bailey
Deputy Minister