

RFR 56
INAC - Dec 23/08

EA0809-002
DM

Alistair MacDonald

From: Krystal Thompson [Krystal.Thompson@inac-ainc.gc.ca]
Sent: December 22, 2008 1:57 PM
To: Alistair MacDonald
Cc: Lorraine Seale
Subject: INAC IR response re: Prairie Creek Additional Documents



YELLOWKN-#28345
I-v1-CZN_MEMO_F..

Hello Alistair,

As noted in our Dec 15 IR response, I am now providing you with a full copy of the Memo from INAC to Environmental Review Committee Members, December 29, 1980 with comments from Parks Canada and INAC enclosed.

Please post on the public registry.

Thank you,

Krystal



Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Northern Affairs Program
P.O. Box 1500
Yellowknife, NWT
X1A 2R3

0932

L.C.
A.C.
N.B.
S.H.

December 29, 1980

file

MEMBERS
ENVIRONMENTAL REVIEW COMMITTEE

Your file Votre référence

Ladies/Gentlemen:

Our file Notre référence

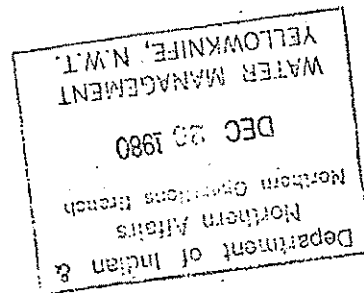
RE: CADILLAC EXPLORATIONS LTD
PRAIRIE CREEK PROJECT
ENVIRONMENTAL EVALUATION

Enclosed for your information are copies of letters from W.D. Harper, Parks Canada and A.E. Ganske, Land Resources, DIAND, with their comments on the Environmental Evaluation for Cadillac Explorations Ltd's Prairie Creek Project.

Also enclosed is a copy of a letter from G.J. Ternan to W.J. Bryant, Department of the Environment, for those who did not receive a copy at ERC Meeting #20.

Cathy Lawrence

Cathy Lawrence
Secretary





Parks
Canada

Parks
Canada

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DEC 20 1980
WATER MANAGEMENT
YELLOWKNIFE, N.W.T.

DEC 17 1980

Main Floor
114 Garry Street
Winnipeg, Manitoba
R3C 1G1

December 10, 1980

Your file reference 4075-37/Cadillac

Our file reference C4072-6

Mr. G. H. Ternan
Chairman, Regional Mining Committee
E.P.S., Western & Northern Region
Edmonton, Alberta

Dear Mr. Ternan:

Re: Cadillac Explorations Ltd. Environmental Evaluation
for Prairie Creek Project.

The review of this document by Parks Canada has generated serious questions as to the quality of the environmental assessment work that was done and the commitment of the mining company to maintaining environmental quality during the operation of the mine and mill and after the site has been abandoned. A number of concerns that were stated in our review of the Preliminary Environmental Evaluation circulated in July, 1980, have not been addressed and, with further clarification of the mining operation in the most recent report, new concerns have become apparent.

Effluent Discharges Into Prairie Creek

Prairie Creek flows into Nahanni National Park. Sources of pollution that may degrade the quality of the water or aquatic life in this creek and thereby effect the Prairie Creek Fan and the South Nahanni River are of concern to Parks Canada.

a) Mine Effluent

The preliminary environmental evaluation distributed in July 1980 did not really identify the mine water effluent as a source of pollution. The present evaluation however, identifies the mine water as a source of toxic effluent that will require treatment. The treatment is briefly explained and the contents of the resultant effluent are estimated. However, there are items in the explanation that are inconsistent with previous data. There are also problems that are glossed over or not addressed at all.

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The table on page 120 states that the two year seven-day flow in Prairie Creek is 8 C.F.S. Page 69, section 5.2.7 reports the ten year seven-day average low flows as 2 C.F.S. Using the 8 C.F.S. figure, the consultant, on page 120, proposes that the treated mine effluent quality would be below the threshold concentrations for aquatic life and would normally not be deleterious to fish life. However, the average ten year seven-day flow is 2 C.F.S. During the periods that the flow is 2 C.F.S. the mine effluent will comprise 28% of stream flow in Prairie Creek thereby quadrupling the concentration of the heavy metals in the water and overtopping the threshold concentrations for aquatic life. Even if the low flow is 2 C.F.S. only every third or fourth year, all aquatic life in Prairie Creek will eventually be destroyed at the mine site and downstream to the Nahanni River. In addition concentrations of heavy metals in the food chain will build up to lethal concentrations much faster in fish.

Other situations have not been addressed by the consultant concerning the mine effluent that may enhance the problem just described. During periods of extreme cold when the flow in Prairie Creek is down to 2 C.F.S. it is likely that the mine effluent may freeze upon being discharged into Prairie Creek. A further concentration of the heavy metals will occur through evaporation and sublimation of H₂O molecules out of the frozen mine effluent. During warming trends this frozen effluent will thaw sooner than the pure water of Prairie Creek thereby releasing a pulse of toxic mine effluent into Prairie Creek that may kill its aquatic life. Further, the natural seepage component of the mine effluent will likely be reduced because of freezing conditions thereby further concentrating the heavy metals by upto 200%. (See page 118 for details on mine effluent composition).

It is likely that the fish in Prairie Creek congregate in deep water overwintering pools (although none were reported by the consultant during the 4-day field trip in July). Hence the fish will be all the more susceptible to concentrations of heavy metals above the threshold concentrations, and especially susceptible to a sudden pulse of such materials during a thaw because ice will prevent them from moving out of the pools to avoid the effluent or to move to a point where it has become sufficiently dilute to permit life.

In summary, the time of year at which the aquatic life in Prairie Creek is most susceptible to limiting factors in the natural environment (freezing temperatures, very reduced flow rates, potential for low oxygen conditions due to ice cover on the river, etc.) it will be subjected to the most severe concentrations of contamination by the toxic components of the mill effluent.

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The proposed treatment of the mine effluent is inadequate to protect the aquatic life in Prairie Creek. Under no circumstances should a permit be issued for this operation that includes a provision to allow the mine effluent to be flushed into Prairie Creek. In this regard we also point out that the Metal Mining Liquid Effluent Regulations are not stringent enough for a watercourse entering a National Park particularly when that watercourse is used as a source of fresh fish and potable water by park visitors. The effluent should be collected and reused in the mill process on a continuing basis with any excess disposed of in the tailings pond.

b) The Tailings Pond

Although the design of this structure now requires that it be lined with clay to stop seepage, the report indicates (page 121) that there will still be a seepage into Prairie Creek of some 500 cubic feet per year. The composition of the seepage is not given but the consultant has made a guess that it is likely to be similar to the raw tailings supernatant. In fact it is likely to be much more concentrated with the harmful heavy metals after much of the water from the supernatant has evaporated from the pond. The Love Canal is a case in point.

We request that in addition to the clay lining, a plastic liner, that is durable and impervious also be installed in the tailings pond to reduce the seepage to zero. Our collective experience with the Cantung Mine has demonstrated that it is apparently quite difficult for regulatory agencies to effect changes made once a mine/mill operation has begun. Thus we must insist that all possible precautions are taken against sources of pollution that can be identified now before a permit is issued to allow the operation of the mine/mill.

c) Sewage Effluent

Upto 20,000 IGD or 0.063 C.F.S. of treated sewage will be discharged into Prairie Creek. During the low flow periods of 2 C.F.S. the sewage effluent will comprise 3% of the flow in Prairie Creek. The effect of sewage discharge on Prairie Creek for the ten year seven-day average low flow has not been assessed by the consultant.

d) Combined Effluent Effects

To a certain degree (low flow 8 C.F.S.) the three effluent discharges into Prairie Creek have been assessed on an individual basis. However, no attempt has been made to assess the effects of the effluents taken as a composite discharge from the site. This assessment must be conducted and it must include both the additive effects of the total effluent discharge and, any enhancement that one of the components may have on another in terms of environmental impact. For example, will the addition of chlorine from the sewage effluent have an enhancement effect on the toxicity of any of the heavy metals from the mine/mill operation? Failure to address the combined effects of all effluents from the site is a serious deficiency in the Environmental Evaluation.

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Mine/Mill Abandonment

This concern includes two issues, the long-term operation of the mill as other strikes are developed and, eventual abandonment of the mine/mill site(s).

a) Long-Term Planning Operation

All logic would demand that the present proposed operation should also be assessed in terms of the long-term potential to exploit the other strikes in the geological formation. The tailings pond has a life of about six years, equivalent to the estimated time to exhaust the current strike. What happens to tailings produced in the exploitation of further strikes? What will be the long-term environmental impacts on Nahanni National Park? These problems must be addressed now so courses of action can be proposed while there is time to develop solutions that will be satisfactory to all concerned parties. In other words the mining/milling operation must be assessed in the framework of the long-term program not in the piecemeal fashion now being pursued. An example of the folly of this piecemeal assessment is the plan to place the garbage dump for the present operation in the middle of an area that will be suitable for a tailings pond in future operations.

b) Abandonment

When the operation is eventually abandoned mechanisms must be in place for long-term monitoring and maintenance of the tailings pond(s) and mine effluent treatment. The mining company having obtained the benefit from exploiting the strike(s), is the only logical entity to be charged with the cost of this long-term monitoring and maintenance. To effect this future monitoring and maintenance activity, a number of mechanisms may be possible. Two that come to mind are a) the posting of a performance bond by the company or b), charging the company a fee for each unit of ore extracted that will be sufficient to establish a fund to use for long-term monitoring and maintenance. Funds generated in this fashion could be used by the appropriate government body (eg. E.P.S.) to implement a program that will ensure that contamination of Prairie Creek and environmental impact on the National Park does not occur.

We propose that a mechanism along the lines described above be put into place before the commencement of mine/mill operations in order that the long-term monitoring and maintenance requirements for the site will be undertaken.

Bear/Garbage Problems

Given past experience with similar operations we are not confident that the garbage control operation at the site will be sufficient to avoid having bears become habituated to feeding on the garbage, becoming

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familiar to the presence of human beings and then at some point moving into the park and harassing visitors in the Prairie Creek Fan area.

The solution is to have an efficient garbage incinerator installed at the site in which all garbage other than metals could be disposed of. We request that this requirement be included in the license of operation. An incinerator would avoid the necessity of a garbage dump (located in a future tailings pond area) and would eliminate bear/man interaction problems.

Aircraft Flights Over Nahanni National Park

Daily aircraft flights (minimum twice a day) over the park during the peak visitor months of July and August are unacceptable to Parks Canada. Daily aircraft flights will destroy the wilderness character of the park for visitors and must not be permitted. Thus, any agreement permitting the operation of the mine/mill on Prairie Creek must have provisions in it that require aircraft servicing the mine site to fly around the park during July and August except, of course, in emergency conditions.

National Park Values

Nahanni National Park was established to preserve for present and future generations a representative example of the Mackenzie Mountains natural region. Further, the park is to preserve the South Nahanni and Flat Rivers as free-flowing wilderness rivers, essentially primitive and unpolluted while allowing the natural evolution of the park landscapes and providing opportunities for the public to experience park values.

At present Nahanni National Park is virtually a pristine environment. It has a worldwide reputation as one of the last great wilderness rivers and has been placed on the United Nations World Heritage List. Parks Canada is very determined that the values inherent to the integrity of Nahanni National Park be maintained.

There are several areas in the region around the park with the potential for base and precious metal exploitation. The Cantung mine/mill operation has been underway for several years and has been contaminating the Flat River with tailings pond seepage. If this experience is to be avoided in the future much stricter controls must be established now so that the South Nahanni River doesn't become a virtual open industrial sewer as more and more of the strikes are exploited.

To effect protection of this national wilderness resource means that developments in the region with the potential to add to the incremental degradation of the park ecosystem, must be controlled and managed to avoid the problems before they begin.

Mr. G. H. Ternan

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The controls proposed above relating to effluents, mine/mill abandonment, garbage disposal and aircraft overflights must be implemented if Nahanni National Park is to be protected.

Conclusion

Whereas the field research period that forms the basis of this report is obviously inadequate in many instances; and,
Whereas there are still many unsolved problems relating to the mine/mill operation, that will result in significant effects;
It is our judgement that a license of operation should not be granted at this time, that the proposal should be referred to an Environmental Assessment Panel and that an Environmental Impact Statement be prepared with the associated public review.

Yours sincerely,



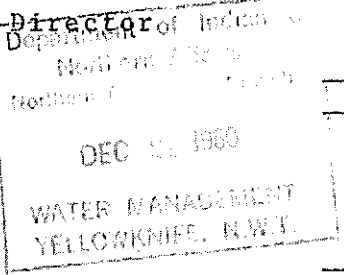
for

W. Douglas Harper
Director
Prairie Region



TO
A

A.G. Redshaw
Assistant Regional Director of Indian Affairs and Northern Development



FROM
DE

A.E. Ganske
Regional Manager
Land Resources

SECURITY - CLASSIFICATION - DE SÉCURITÉ
OUR FILE - NOTRE RÉFÉRENCE
YOUR FILE - VOTRE RÉFÉRENCE
DATE December 18, 1980

SUBJECT
OBJECT

Evaluation Overview of Cadillac
E.I.S. from a Lands Perspective

The Land Resources Division has reviewed the following documents:

- a) Winter Access Road (Preliminary I.E.E.)
- b) Mine, Mill & Camp (Preliminary I.E.E.)
- c) Definitive Feasibility Study by Kilborn for Cadillac Explorations Ltd.
- d) Environmental Evaluation, Ker, Priestman & Associates Ltd., Prairie Creek Project, N.W.T. October 1980.

These documents provide a description of the project and indicate an attempt to satisfy the requirements of the Government Departments involved.

The proposed project has potentially adverse environmental effects, which from the viewpoint of Land Resources responsibilities, can be adequately mitigated or prevented by responsibly implementing a variety of measures. In some cases, additional information is required, or may be required, before and during the project, to refine the most appropriate mitigation measures. We do not see this as a problem.

Land Resources feels that the expertise exists or can be called upon at the Regional level to deal with issues arising from the Cadillac Mine application.

The Land Resources Division has the following concerns regarding the project and proposed measures to mitigate or prevent adverse environmental effects:

1. Winter Access Road

Public use of the winter access road may create a significant environmental impact. Serious consideration should be given to restricting public access until potential wildlife impacts are clarified and management strategies evolved.

Changes to Access

Connection to a proposed ferry at Nahanni Butte and/or conversion of the winter road to an all weather road would require major rerouting. This would introduce new engineering and environmental factors and necessitate a complete revaluation of the road access question.

3. Exploration and Minesite Roads

Miles of roads dozed out of the mountainsides in the vicinity of the minesite itself provide access for recreational vehicles and hunters to a large area and have created an aesthetically unattractive site. Future expansion of this access road network must be kept to a minimum with a review of alignments and a yearly program approval process established before additional road work is carried out.

4. Garbage and Sanitation

We feel that additional safeguards beyond those proposed are needed. Properly operated, a sanitary fill for garbage and a bio-treatment plant for sewage can work. Experience in the N.W.T. is that they are not properly run and maintained. We therefore believe that the company should be asked to use simpler and more reliable means. Such a system would ensure all putrescibles are garburated to the sewer thereby eliminating the bear problem and at the same time making it possible to burn the flamables right in camp where the heat could be used.

If this were combined with stringent water conservation, the much reduced quantity of high strength sewage could either be pumped to the tailings pond or run through baffled covered sumps where the sludge could accumulate and eventually be available for restoration. Effluent could be run through the settling pond downstream of camp or it could be run into a gravel deposit for natural filtration. The camp should have a designated salvage area and it would be here that the remainder of the refuse, crushed bottles and cans etc., would be placed or buried as appropriate. By these means a camp dump, the source of much of our trouble would be eliminated and stream pollution risks reduced to an acceptable level.

5. Tailings

It is felt that Water Resources and the N.W.T. Water Board will provide a suitable review of this aspect of the development.

There will however remain the possibility of a serious breach of the tailings storage facilities from flood water in Prairie Creek. Monitoring of the structures must therefore continue following abandonment or shutdown of the mine operation.

6. Hazardous Waste
Because of the seriousness of a spill anywhere along the access route or around the Cadillac property, an uncompromising attitude should be adopted toward the keeping of a hazardous material budget. A spill contingency program is spelled out in detail but the implementation is difficult and should be systematically monitored.
7. Fuel Storage
We support achieving the impermeability of dykes and storage areas by the use of clay as this is preferable to fabrics. Careful construction will be the key to safety. The proposal to retain the present fuel storage facility adjacent to Prairie Creek would not appear to be as desirable as consolidating the fuel storage at the new site being proposed behind the concentrator building. If retained, special safeguards and conditions should be imposed and a total rebuilding of the creek facility undertaken.
8. Drainage
We support a runoff settling basin at the downstream end of camp as shown on the plans. This should provide a good degree of control over contamination and sediment and act as an equilibrating basin. It is assumed the water quality in this pond will be carefully monitored and seepage rates clarified.
9. Future Expansion
The established ore deposits run for 12 to 15 miles. There is every likelihood that concurrent with the existing mining, plans and exploration will proceed for expansion. It must be made clear that changes in scope require further approval. Advanced information would be important for timely decision making.
10. Restoration and Abandonment
If the ore showings now located are confirmed as commercially viable, abandonment is a long way off. We should concentrate on progressive restoration at this time.
 - a) The Company should identify and establish immediately a salvage area where useable material can be placed.
 - b) Stabilization of the tailings ponds, as well as insuring their ongoing integrity, we believe is best achieved by making the strongest possible partitions between cells. Capping when final capacity is reached, would also be desirable.
 - c) The E.I.S. lists various restoration objectives which will need future refinement. In general, Land Resources supports an on-going program that encourages the re-establishment of native species in disturbed sites, such as along the access route and various other roadways.

Because of the distinctive flora of this mountain area, special emphasis is given to fostering native species.

- d) A full restoration plan should be submitted to the Regional Director within two years of signing of the lease - not withstanding the progressive restoration measures such as advocated above.



A.E. Ganske

