

NORANDA
NORANDA MINERALS CORP.
2501 CATLIN, SUITE 201
MISSOULA, MT 59801

TO: Peter Lintner / Norm Corbin
CONTENTS: New World Tailings Meetings 7/4-7/12/91
FROM: Dan McLennan
Summary By Nancy Winlow

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(406) 721-8419

Peter,

Site SB1 has base line work from previous LAD studies. Agencies agreed that site or embankment will likely eliminate this site. First pass study will have to be done on SB4 to satisfy EIS requirements. Lake Pass site was eliminated by Matrix study. Don Poulter on IMS suggested that if CN remains in flow sheet that we may have to go to a double lined system with under draining to satisfy agencies. Money was provided for in Feasibility Report for this contingency. Dan

noranda

MEMORANDUM

To: Dan McLaughlin
Doug Parker
Brent Bailey

From: Nancy Winslow

Subject: **New World Meeting - Alternative Tailings Impoundments,
Cooke City, Montana, July 10 and 11, 1991.**

Date: July 16, 1991

At the request of Noranda, officials from the Montana Department of State Lands, the USDA Forest Service, and IMS (EIS Contractor) met with Noranda in Cooke City on July 10 and 11 to discuss alternative tailings impoundment sites for the New World Project. An attendance list is attached.

The meeting resulted in the selection of the three alternative impoundment sites (FC-1, SB-1 and SB-4) shown on the attached map. The SB-4 site, suggested by Gene Gibson, USFS engineer, requires preliminary design work.

The purpose of the meeting was to document for the EIS and the agencies that alternative tailings impoundments were considered by Noranda. Alternatives were requested by the agencies in the first series of completeness comments and subsequent discussions. Prior to the meeting, agency personnel were, in general, strongly opposed to Noranda's preferred impoundment site in upper Fisher Creek (FC-1).

The objectives of the meeting were to:

- 1) delineate two to four alternative impoundment sites;
- 2) dismiss other alternative sites; and
- 3) determine the level of study detail needed for the alternative sites.

The agenda for the meeting included:

Wednesday, July 11:

- a.m.: - Bechtel presented their site selection process, including their selection criteria and a map the 30 sites they considered. The sites on their map included areas within 10 miles of the project area with at least a 3:1 slope and the capacity to contain 5.5 million tons of tailings.

- The group developed its own criteria for impoundment site selection (see attached summary).
- p.m.: - Field tour overview of 30 impoundment sites delineated by Bechtel.

Thursday, July 12:

- a.m.: - The group, led by IMS, agreed to a matrix approach to select 3 or 4 preferred impoundment sites. The sites were subjected to a "first-cut" and then a "second-cut" screening, based on two different matrices.
- Three sites were chosen from the matrices (FC-1, SB-1 and SB-4), including the upper Fisher Creek site (FC-1), originally proposed by Noranda.
 - The agencies listed the general type of field studies and baseline work that would be needed for each alternative site.
 - The agencies agreed to provide Noranda, by July 26, 1991, a formal list of baseline work that will be needed for the alternative sites and convey the results of the meeting to other EIS IDT Leaders not in attendance.
 - IMS (EIS consultant) agreed to summarize the results of the meeting and submit the summary to Noranda and the agencies.

In conclusion, the objectives of the meeting were achieved and the general tenor of the meeting was upbeat and positive. Subsequent discussions indicate that substantial agency opposition to the upper Fisher Creek impoundment site remains, but opponents are more educated to the advantages of this site and to the advantages and disadvantages of other alternative sites.

CRITERIA FOR IMPOUNDMENT SELECTION

selected July 11 and 12, 1991
Cooke City, Montana

Before being inserted into the matrix, the following conditions were to be met:

- Site must be within 10 miles of the mine.
- Site must be in an area with at least a 3:1 slope
- Site must not be within a Wilderness Area or National Park

Matrix "First Cut" Criteria:

- Natural Hazards (are avalanches or rockslides, etc. a major concern?)
- Operability (is winter operation a concern?)
- Waters of the United States (would the impoundment impinge on streams and lakes shown on the USGS map?)
- Location (is access to the site reasonable? Is it located within a reasonable distance to the mine?)
- Drainage basin (would additional impact be less offensive in one drainage vs. another?)

Matrix "Second Cut" Criteria (more detailed information delineated on a rough first-pass basis):

- Runoff Control (would extensive diversions be necessary?)
- Wetlands (does the area appear to be very wet and swampy?)
- Hydrogeology (does the geology appear to be complex, causing hydrology to be difficult to predict?)
- Tailings transportation and containment (would there be risks associated with transport, potential for spillage, and the ability to provide emergency containment?)
- Recreation (does the site occur in a popular recreation area?)
- Visual (will the site be visible from major transportation routes, Yellowstone Park or the wilderness areas?)

- Reclamation (will the site be stable and require a minimum of maintenance and monitoring?)
- Disturbance area (how much area will the site disturb, vs. other sites that contain the same amount of material?)
- Natural Hazards (are avalanches or rockfall a major concern?)

**BASELINE WORK RECOMMENDED BY AGENCY PERSONNEL
FOR IMPOUNDMENT SITES**

July 12, 1991 and
July 15, 1991 (personal communication)

1. Preliminary engineering, including: geotechnical drilling and mapping, delineation of access roads, pipeline paths, quarries and treatment plants.
2. Wetlands
3. Wildlife habitat delineation
4. Vegetation - list of threatened and endangered species
5. Cultural
6. Soils
7. Hydrology (water balance, water quality)
8. Recreation
9. Avalanche (both for impoundment and tailings pipeline)
10. Visual

