Served on Parties and Delivered to U.S. EPA: October 15, 2004

STB ID #: 35117 **Comment Due Date: December 6, 2004**

Volume II
Appendices

DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

STB Finance Docket No. 30186 (Sub–No. 3)

Tongue River Railroad Company, Inc. – Construction and Operation – Western Alignment

Tongue River III - Rosebud and Big Horn Counties, Montana

Lead Agency:

Surface Transportation Board
Section of Environmental Analysis
1925 K Street, NW
Washington, DC 20423-0001

Cooperating Agencies:

U.S. Army Corps of Engineers
U.S. Bureau of Land Management
Montana Department of Natural Resources and Conservation (lead agency for Montana state agencies)

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1. Potential Environmental Impacts of Tongue River Railroad on Lands Administered by Bureau of Land Management

Potential Environmental Impacts of Tongue River Railroad on Lands Administered by Bureau of Lands Management

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Revised August 2003

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Background

Federal public lands that will be crossed by the Tongue River Railroad are administered by the United States Department of Interior, Bureau of Land Management ("BLM"), Miles City, Montana field office. The public lands are situated in what was formerly known as the Powder River Resource Area, and is now known as the Powder River Planning Unit (hereafter "Planning Unit") in southeastern Montana. The Planning Unit includes portions of Custer, Carter, Rosebud and Big Horn Counties, as well as all of Powder River and Treasure Counties. The BLM has management responsibilities for 1,080,675 surface acres of land and 4,103,700 acres of subsurface minerals in the Planning Unit. This public land accounts for 13% of the total amount of land in the Planning Unit (Draft "Resource Management Plan/EIS for Miles City District" BLM, March 1984).

Construction of the Tongue River Railroad via the Western Alignment from Miles City to Decker, Montana will cross 17 tracts of BLM-administered lands. As described in more detail in Table 1 below, the 17 BLM-tracts contain approximately 4357 acres of surface land. The Tongue River Railroad Company ("TRRC") right-of-way (ROW) will utilize only approximately 264 acres (or 6%) of these 17 tracts. The TRRC ROW will require two hundredths of one percent (0.0002) of BLM surface acres in the BLM Planning Unit. Each of the 17 BLM tracts are shown on an oversized map in Attachment 1. (see "1" through "17"). As shown in Table 1, eight of the 17 BLM tracts are on the Western Alignment. The Four Mile Creek Alternative[1] (to the Western Alignment) would impact seven BLM tracts in lieu of the eight tracts impacted by the Western Alignment. The BLM lands that would be impacted by the Four Mile Creek Alternative are shown in Attachment 1 as tracts "F1 through F7".

Introduction

The BLM has identified the BLM lands that would be crossed by the Tongue River Railroad. TRRC has prepared maps showing where the current proposed alignment via the Western Alignment would cross each of the BLM lands. Copies of these maps are included in Attachment 2.

This report (1) describes the BLM-administered lands that would be crossed by the current proposed alignment for Tongue River Railroad from Miles City to Decker, Montana, (2) analyzes the environmental impacts that the rail line might have on these BLM lands, (3) presents a "no action" alternative that avoids the crossing of all BLM-administered lands, and (4) compares impacts to BLM lands on the Western Alignment with impacts to BLM lands on the Four Mile Creek Alternative.

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[1]The Four Mile Creek Alternative is the southernmost segment of the route approved by the Surface Transportation Board (STB or Board) in 1996. In April 1998, TRRC filed an application for approval of the Western Alignment in lieu of the Four Mile Creek Alternative.

Much of this information is presented in Tables 1 through 5 below. Briefly, Table 1 identifies each of the 17 tracts of BLM-administered lands that would be crossed by the railroad via the Western Alignment, including the county where the tract is located; the section, township and range where the tract is located; the total acreage of each BLM tract, and how much of the tract TRRC seeks to use as ROW. Table 1 also indicates whether the BLM tract is located on (1) the original 89-miles line from Miles City to Ashland, Montana approved by the Interstate Commerce Commission (ICC) in 1986, (2) the northern 21-miles of the Ashland to Decker, Montana extension approved by the Board, the ICC's successor, in 1996 or (3) the Western Alignment, the route currently under Board consideration. Finally, Table 1 describes public access, if any, to each of the tracts and identifies the current land use for each of the tracts.

Tables 2 through 4 provide information regarding the 17 BLM tracts that would be crossed by the Miles City to Decker rail line using the Western Alignment. Specifically, Table 2 analyzes potential impacts to cultural resources and land use. It identifies the cultural resource sites located on the BLM tracts and describes how grazing and ranching operations on each tract could be affected by the railroad. Table 3 identifies the potential impacts that the railroad could have on access to, and recreation on, the BLM-administered lands and adjacent tracts. Table 4 analyzes the "no action" alternative – the alternative that would avoid the crossing of BLM lands. Table 5 provides some of the above information for the seven BLM tracts that would be crossed by the Four Mile Creel Alternative.

Environmental Impacts to BLM-Administered Lands Along Entire Tongue River Railroad from Miles City to Decker, Montana Via the Western Alignment.

A. General

The proposed alignment for the entire Tongue River Railroad from Miles City to Decker, Montana via the Western Alignment would cross 17 BLM-administered tracts. Seven of these tracts are located on the original 89-mile segment from Miles City to Ashland (old Terminus Point 1) approved by the ICC in 1986; two are on the northern 21 miles of the Ashland to Decker segment (Extension) approved by the Board in 1996 and eight are on the Western Alignment.

The 17 BLM tracts contain a total of 4,357 acres. See Table 1. TRRC has begun the process of applying for and obtaining easements requesting 264 acres (or 6%) of these BLM tracts for the ROW. Of the approximately 116.5 miles of the proposed Tongue River Railroad, less than 6 miles (or 5%) would cross BLM lands. See Table 1.

B. Potential Impacts to Public Access

Potential impacts of the Tongue River Railroad on the public's ability to access the 17 BLM tracts that it would cross are presented in Tables 1 and 3. A review of these tables demonstrates that construction and operation of the proposed route via the Western Alignment would not significantly impact the public's ability to access these 17 BLM tracts. As explained in Table 1, 9 of the 17 tracts currently are not accessible by the public except with permission of adjacent private landowners. If permission were obtained from those private landowners, the public would be able to access the BLM tract(s) via private grade crossings.

Four of the eight remaining tracts are accessible via the county road that runs along the Tongue River. See Table 1. As shown in Table 3, the Tongue River Railroad will not impede the public's ability to continue to access these BLM tracts from the county road.

Of the remaining four BLM tracts, two are currently accessible to the public via conservation easements between the private landowners and the Montana Department of Fish, Wildlife and Parks (see Table 1, BLM Tract 2 and 3). Another is currently accessible via the adjacent Custer National Forest (see Table 1, BLM Tract 8), and the third is currently accessible from the adjacent BLM-administered lands to the east (see Table 1, BLM Tract 13). As shown in Table 3, construction and operation of the railroad will not impair the ability of the public to continue to access these tracts.

C. Potential Impacts to Cultural Resources

Potential impacts to known cultural resources on the 17 BLM tracts along the entire Tongue River Railroad via the Western Alignment are presented in Table 2. As shown in Table 2, only two of the 17 BLM tracts (one on original 89-mile rail line and one on northern 21 miles of Extension) have known cultural resource sites within 1500 ft of the proposed centerline. There are six known sites within 1500 feet of the proposed centerline on these two BLM tracts, only one of six sites appears to be within the ROW.

The Battle Butte Battlefield is seven miles southwest of Birney and on both sides of the proposed route. The currently defined Battlefield includes public land in the N ½ of the NE ¼ of Section 33 and NW¼NW¼ of Section 34, T6S, R42E. In March 1999, BLM designated the public lands portion of the site as an Area of Critical Environmental Concern (ACEC) on the basis of unique historic values. The proposed route does not traverse the 120 acres of BLM land within the ACEC.

D. Potential Impacts to Land Use -- Grazing and Livestock

BLM categorizes the land use on all of the 17 BLM tracts crossed by the Tongue River Railroad via the Western Alignment as grazing land.

Potential impacts to land use in these 17 BLM tracts are presented in Table 2. As shown in that table, potential impacts to grazing and livestock are two-fold: (1) the reduction of grazing land, and (2) the effect of dissected pastures (i.e., cattle separated from water, fee, and access by the rancher).

The ability to graze livestock is measured by the BLM in animal unit months (AUM).[1] The loss of AUM's by tract is a function of the grazing allotment size compared to the amount of land required for the ROW. As shown in Table 2, seven of the 17 tracts will have only a 1% to 3%

[1]An animal unit month (AUM) for those tracts is based on cattle. An AUM is equivalent to the grazing capability to support one cow/calf combination. A tract with 6 AUMs would support one cow/calf for six months per year or six cow/calves for one month per year. estimated AUM loss. Only five of the 17 tracts will result in an estimated AUM loss of more than 10%.

Altogether, the BLM tracts ability to graze livestock will be reduced by approximately 6%. This loss of cattle grazing land is a very small fraction of the total BLM grazing lands available in the BLM Miles City District.

Dissected pastures can be addressed through mitigation conditions. Specifically, TRRC plans to install a livestock underpass to accommodate livestock movement (11'3" by 12'6" passage below the railroad track) and/or private-grade level crossings to accommodate vehicle movement where a pasture would be dissected. Some tracts would only be crossed at a corner and, therefore, might not involve a dissected pasture. Also, TRRC will provide for continuation of livestock water supply if the dissection results in one part of the pasture not having a source of water.

E. Potential Impacts to Access and Recreation

Potential impacts to access and recreation on the 17 BLM tracts along the entire railroad via the Western Alignment are presented in Table 3. As described above the BLM tracts are all grazing lands. These lands are not generally used by the public for camping, picnicking, hiking, rafting, boating, swimming, and other non-hunting activities. These lands provide hunting opportunities for mule and white-tailed deer, pronghorn antelope, and game birds by the lessee and (where public access is available) by the public. Because most of the tracts are small and isolated, they are not as attractive to hunters as other public and private land in larger tract sizes. As indicated in Table 3, many of the tracts will have very little loss of land to the ROW and only nine of the 17 BLM tracts are currently accessible to the public without the adjacent landowners providing permission to cross their land.

TRRC will ensure that current public access is maintained through livestock underpasses or private grade-level crossings. Conversely, TRRC will place posted signs to discourage the public from walking or driving along the ROW to gain access to an otherwise inaccessible tract.

Other potential issues regarding impacts that the railroad could have on BLM tracts include (1) whether the Tongue River Railroad would act as a barrier to wildlife movement, and (2) whether wildlife would be startled by the sound and sight of the trains. The railroad will not have a barrier effect on wildlife movement because the bottom strand of barbed wire will be at least 16 inches above the ground, which will allow pronghorn antelope to pass under the wire while the mule and white-tailed deer will be able to jump over the top strand of wire. With respect to the second issue, there is considerable anecdotal evidence that both livestock and wildlife become habituated to the passage of trains, thus there will be no long term startle effect on game animals. (Pat Farmer, WESTECH, 1999 telephone conversation).

In summary, hunting is the primary recreational activity on BLM lands that could be impacted by the Tongue River Railroad. The potential impacts to hunting can be readily mitigated through signage, proper fencing, and provision of continued access to currently publicly accessible lands.

F. Impacts to Zook Creek Wilderness Study Area (WSA)

The BLM asked TRRC to evaluate whether the Tongue River Railroad will impact the 8,348 acre Zook Creek Wilderness Study Area (WSA). The Zook Creek WSA is located in Rosebud County. It is centered about 4 miles northwest of the community of Birney with the extreme southeast limits of the WSA coming to within two miles northwest of the community. The northern boundary of the WSA comes within a mile of the Northern Cheyenne Indian Reservation. It is not accessible by public roads and only the fringe areas appear to be accessible by private roads. The WSA has been under consideration for designation as a wilderness area by the BLM and Congress for almost 20 years.

The Tongue River Railroad would be located two miles east of the WSA at its closest point to the WSA. The railroad would not affect access to the WSA. Except for the possibility of hearing train noise in the distance, the operations of the Tongue River Railroad would have no effect on this WSA.

"No Action" Alternative Discussion

BLM requested TRRC to prepare an analysis of a "no action" alternative. In the analysis the "no action" alternative involves redesigning the rail alignment to avoid the crossing of BLM lands along the entire Miles City to Decker route via the Western Alignment. While it is theoretically possible to avoid BLM-administered lands by moving the alignment from a few hundred feet to 2500 feet in numerous locations, to do so would result in a variety of adverse environmental impacts including: increased impact to private property; increased right of way acreage; increased cuts and fills and resultant higher construction costs; increased encroachment on irrigated lands; require additional Tongue River crossings; greater impacts on public utilities and infrastructure such as county roads, telephone and power lines; increasing the amount of adverse curvature and grade thus adversely affecting long-term operations, maintenance, and safety of rail operations.

Table 4 presents the detailed analysis, tract by tract, of the "no action" alternative, under which BLM lands would not be crossed by the rail alignment. The no-action alternative for the seven BLM tracts on the Four Mile Creek Alternative is presented in Table 5. As shown in Table 4, the impacts associated with the "no action" alternative for some or all of the tracts include the following:

- Substantial increase in the amount of cuts and fills;
- Disturb more rangeland;
- Use of more irrigated pasture land for ROW;
- Use of more private rangeland for ROW;
- Greater encroachment on the Tongue River flood plain;
- Movement of public utilities and infrastructure;

- Additional crossings of the county road along the Tongue River;
- Increase overall distance of the route;
- Increase in curvature of the alignment which increases annual operating costs, maintenance expenses and probability of derailments;
- Additional bridge crossings; and
- Encroachment of or closer proximity to the Tongue River Reservoir State Recreation Area.

Impacts to BLM-Administered Lands Along Western Alignment Compared to Those Along Four Mile Creek Alternative

The southernmost 17 miles of the currently proposed route of the Tongue River Railroad is the Western Alignment. Eight of the 17 BLM tracts (Tracts 10-17) crossed by the railroad are on the Western Alignment. The southernmost segment of the currently approved route of the Tongue River Railroad is the Four Mile Creek Alternative which is 12 miles longer than the Western Alignment. The Four Mile Creek Alternative would impact seven BLM tracts, described in Table 5. As described below the level of impact to BLM lands for both alternatives is minor and the impacts themselves on both alternatives are similar.

Both the Western Alignment and the Four Mile Creek Alternative would affect eight grazing leases. (Note: BLM Tract F6 contains two grazing leases.) While the Four Mike Creek Alternative would affect less BLM acreage than the Western Alignment, it requires approximately 15 percent more mileage across BLM tracts than the Western Alignment. Specifically, the Four Mike Creek Alternative would require 84 acres and 2.37 linear miles of ROW compared to the Western Alignment, which would require 120 acres and 2.07 linear miles of ROW. However, when considering the entire length of each alternative, not just the portions crossing BLM lands, the Western Alignment requires less ROW acreage than the Four Mile Creek Alternative. Moreover, as described more fully in the Environmental Report submitted with the Western Alignment application, there are substantial safety and operational advantages to the Western Alignment. The Western Alignment has much less severe grades than the Four Mile Creek Alternative. For example, the Four Mile Creek Alternative results in a climb against loads that is 10 times higher than the Western Alignment, has grades that are three times as steep for ascending loaded trains and more than twice as steep for descending loaded trains.

Based on land use resources, the quality of the BLM land affected by both alternatives is similar. See Tables 2, 3 and 5. The land use on the tracts crossed by both alternatives is the same -- grazing lands. See Tables 2 and 5. Moreover, the loss in grazing potential on BLM lands would be similar along both alternatives. Three of the BLM tracts on the Four Mile Creek Alternative would have an estimated AUM loss of greater than 20 percent and two of the BLM tracts on the Western Alignment would have an estimated AUM loss of more than 20 percent.

The impacts to recreation on the tracts crossed by both alternatives are similar in that recreation is not a valuable attribute for any of the BLM tracts. See Tables 1, 3, 5. However, there is relatively more public access to the BLM tracts along the Four Mile Creek Alternative than for the Western Alignment because most of the tracts on the Four Mile Creek Alternative are accessible from State Road 314.

There are no listed cultural resource sites within the ROW or within 1500 ft of the ROW on the BLM tracts potentially affected by either the Western Alignment or the Four Mile Creek Alternative.

In summary, the Western Alignment would require less mileage but more total acreage on BLM lands than the Four Mile Creek Alternative. When considering the entire length of each alternative, including the portion crossing non-BLM lands, the Four Mile Creek Alternative requires more acreage and would involve more mileage than the Western Alignment. Moreover, the Western Alignment has substantial safety and operational advantages over the Four Mile Creek Alternative. The nature of the other impacts to BLM land is similar for both alternatives and the level of impacts for either routing is minor.

Appendix F

Information Requested by the State of Montana

1. Potential Effects of Tongue River Railroad Western Alignment Bridge on the Flood Prone Area of the Tongue River Valley
2. Socio-economic Additions (Additional information concerning socio-economics provided by MT DNRC)
3. State of Montana Permit Information Requirements for Construction of the Tongue River Railroad
4. Comments on Miles City Fish Hatchery from MT DNRC
5. Train Speed-Coal Dust Movement Analysis provided by TRRC
6. Weed Control Management Analysis provided by TRRC
7. Proposed Water Pipeline Protection Mitigation Measures Analysis provided by TRRC
8. Miles City Fish Hatchery Report conducted by Womack & Associates for TRRC

Potential Effects of Tongue River Railroad Western Alignment Bridge on the Flood Prone Area of the Tongue River Valley

For:

Tongue River Railroad Company
P.O. Box 1181
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By:

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3005 Airport Road
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(406) 442-0950

February 13, 1999

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FIGURES

INTRODUCTION

The Section of Environmental Analysis (SEA) at the Surface Transportation Board (STB), through its third party contractor, Public Affairs Management (PAM), requested that the Tongue River Railroad Company (TRRC) provide a brief analysis of the effect of the proposed Western Alignment railroad bridge across the Tongue River on the floodplain upstream from the bridge. As discussed more fully below, a similar analysis had been prepared for the TRRC original preferred route considered in the Final Environmental Impact Statement for Finance Docket No. 30186 (Sub. No. 2), hereafter the "1996 FEIS."

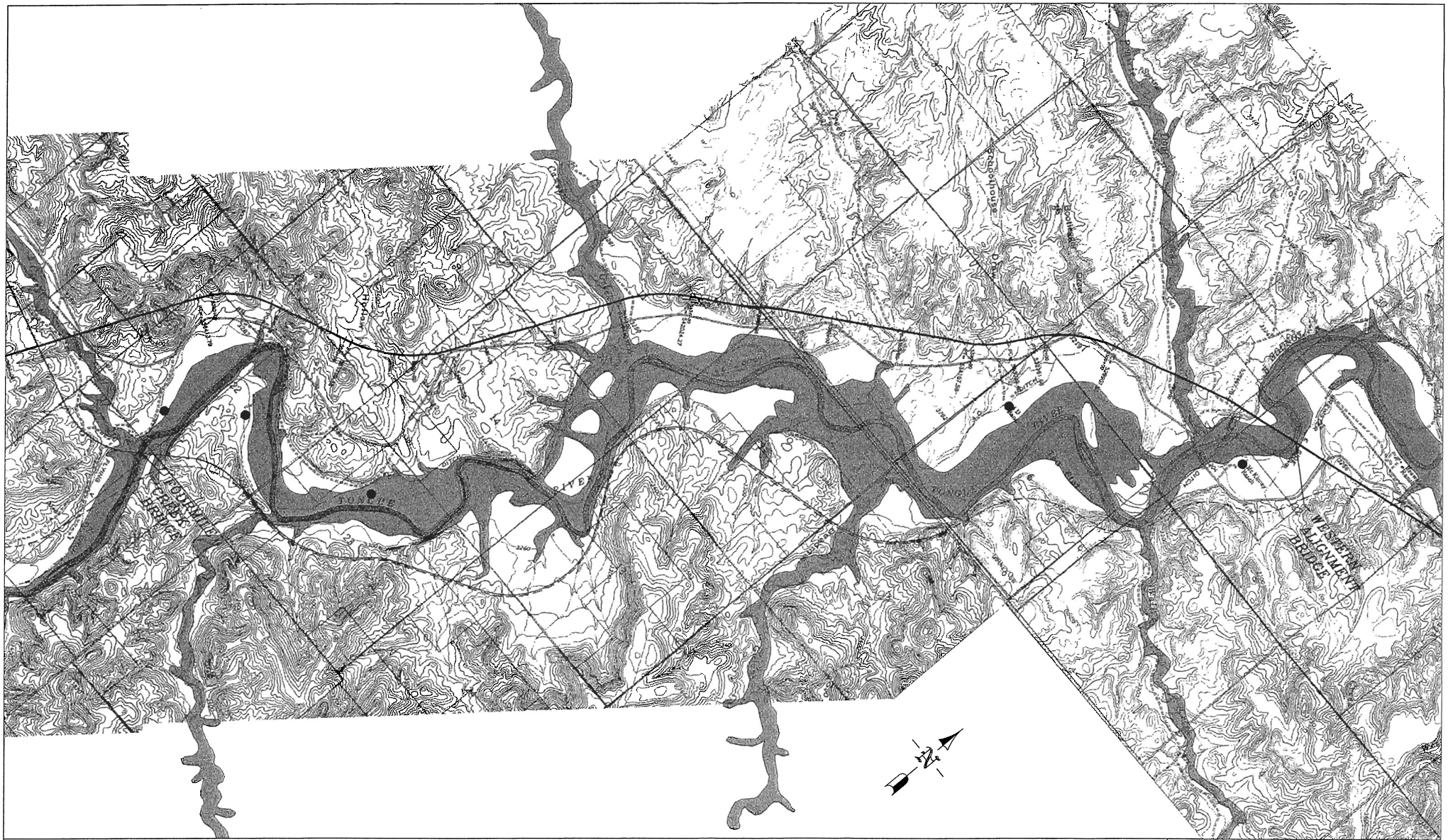
The proposed Western Alignment would result in a change in the location (approximately 9.5 river miles) downstream of a single bridge across the Tongue River, compared to the Four Mile Creek route approved by the STB in a 1996 decision. Locations of the bridges on the Western Alignment and the Four Mile Creek alternative are shown in Figure 1.

The flood effects analysis in the 1996 FEIS (pages 31-32) was based upon a special study commissioned by TRRC at the request of the Montana Department of Natural Resources and Conservation (MDNRC), conducted by Western Water Consultants (WWC), hereafter the "WWC study," using a HEC-1 computer analysis. A copy of the WWC study is attached as Exhibit 1. The 1996 FEIS considered two alternatives: the Four Mile Creek alternative and TRRC's preferred route (called the Original Preferred Alignment). As mentioned above, the Four Mile Creek alternative would have required one bridge across the Tongue River, while the Original Preferred Alignment would have required five bridges across the Tongue River between the Tongue River Dam and Four Mile Creek. The objectives of the WWC study were: 1) preliminarily assess the impacts on the homes in the Tongue River valley resulting from the proposed construction of the five bridges associated with the Original Preferred Alignment; and 2) determine whether any of the proposed five bridges would be overtopped during the floods considered.

As reported on page 31 of the 1996 FEIS, MDNRC agreed with the findings in the WWC study that the five bridges associated with Original Preferred Alignment "would have a minimal impact on flood levels at the homesites studied." Specifically, the WWC study found:

- "...at the flow rates investigated, all five homesites located upstream of the most downstream railroad bridge..." (i.e., the bridge near the mouth of Four Mile Creek) "...are inundated without the railroad." In other words, the upstream homesites would be flooded even if the five railroad bridges were not constructed;

- "The extent of inundation of homesites should not be appreciably increased as a result of construction of railroad bridges..." In other words, the five bridges on the Original Preferred Alignment would not substantially increase flooding of the upstream homesites;



● *BUILDING SITE*

▒ *100 YEAR FLOOD PLAIN*

WESTECH
Environmental Services, Inc.
P.O. Box 6045
Helena, Montana 59604

SCALE: 1" = 2500'
DATE: JANUARY 1999
DRAWN BY: DC
CHECKED BY:
FILE: TRRR99A01.DWG

100 YEAR FLOOD PLAIN OF THE TONGUE RIVER BETWEEN THE PROPOSED WESTERN ALIGNMENT BRIDGE AND THE FOURMILE CREEK BRIDGE

TONGUE RIVER RAIL ROAD

FIGURE 1

- "Increases in maximum water surface elevations during 60,000 cfs (cubic feet per second) or smaller floods due to construction of the railroad bridges should be negligible." In other words, flood events after the anticipated repair of the Tongue River Dam would not be substantially influenced by the five proposed railroad bridges; and

- "The crest elevations of the railroad bridges are well above the computed water surface elevations at all discharge results analyzed, indicating that the bridges would not be overtopped and separate breach analyses of the railroad fills should not be necessary." The three discharge rates analyzed by the WWC study were 60,000 cfs (a 2,200-year flood), 100,000 cfs (a 5,000-year flood, equal to the dam/spillway capacity of the reconstructed Tongue River Dam) and 120,000 cfs (a 10,000-year flood). In other words, the HEC-1 analysis conducted in the WWC study demonstrated that homesites downstream from the proposed bridge near the mouth of Four Mile Creek would not be affected by flooding solely as a result of construction of the five proposed bridges. It should be noted that these five bridges would have been 20-25 feet high (Dan Hadley, engineer, Mission Engineering, Inc., personal communication, January 20, 1999).

After review of the WWC study, MDNRC agreed with its findings, as documented on page 31 in the 1996 FEIS. It followed, then, that if five bridges associated with the Original Preferred Alignment would result in minimal flooding impacts on homesites, then one bridge along the Four Mile Creek alternative near the mouth of Four Mile Creek would also have minimal flooding impacts. The bridge along the Four Mile Creek alternative would have been about 80 feet high (Dan Hadley, engineer, Mission Engineering, Inc., personal communication, January 20, 1999), i.e., 3-4 times higher than the five bridges associated with the Original Preferred Alignment. Thus it follows that the bridge along the Four Mile Creek alternative also would not have been crested by the flood scenarios examined by the WWC study.

The present analysis examines whether moving the location of the single bridge proposed for the Western Alignment approximately 9.5 river miles downstream from the bridge associated with the Four Mile Creek alternative would cause additional substantial flooding impacts in the Tongue River valley.

METHODS

The environmental effects of major reconstruction of the Tongue River Dam were considered in the Tongue River Basin Project Final Environmental Impact Statement dated March 1996, hereafter the "TRB FEIS." Reconstruction began in 1997. However, the assumptions made in the WWC study and accepted in the 1996 FEIS regarding the engineering design and flow regimes of the Tongue River Dam/spillway system were (and are) valid, as verified by the TRB FEIS. Consequently, the WWC study's conclusion that the five bridges under consideration for

the Original Preferred Alignment would cause negligible flooding impacts to homesites upstream of those five bridges also remains valid.

Since the 1996 FEIS concluded that there would be minimal effects to homesites upstream of the approved bridge near the mouth of Four Mile Creek, it is not necessary to re-examine those homesites for this analysis. Instead, this analysis focused on additional homesites located between the mouth of Four Mile Creek and the proposed Western Alignment crossing of the Tongue River near the mouth of Prairie Dog Creek, as shown in Figure 1.

The 100-year floodplain along the Tongue River and its tributaries in this reach of river was transcribed from floodplain hazard boundary maps for Rosebud County, Montana prepared by the Federal Insurance Administration of the U.S. Department of Housing and Urban Development, and provided by MDNRC's Water Operations Bureau. Occupied homesites in this river reach were identified from aerial photographs taken in November 1997, provided by TRRC. Flood projections were adapted from the discussion in the TRB FEIS.

RESULTS AND DISCUSSION

Aerial photography analysis documented five homesites in the Tongue River valley between the proposed Western Alignment bridge and the approved Four Mile Creek bridge (Figure 1). Of the five sites, only one was located within the 100-year floodplain (Figure 1).

When repairs to the Tongue River Dam are completed in 1999, the dam/spillway system will have the capacity to pass a flow of 100,000 cfs. The height of the reservoir will raise by four feet and the capacity of the reservoir will increase from 67,000 acre-feet to 80,000 acre-feet (page 2-37 of the TRB FEIS). As a result of dam/spillway reconstruction, downstream areas affected by a 100-year flood will increase slightly; the effects of these increases would be considered minor over both the short- and long-terms (pages 2-37 and 4-28 of the TRB FEIS). In other words, the area of the 100-year floodplain shown in Figure 1 is likely to be slightly larger as a result of repairs to the Tongue River Dam. According to information presented on page 4-27 of the TRB FEIS, this increase will be about three acres per mile and the 100-year flood depth will increase about five inches. Within the parameters of the present analysis, it was not possible to determine if this adjusted floodplain would encompass any of the building sites shown in Figure 1.

The preliminary design for the Western Alignment bridge does not require any piers or foundations to be placed in the river (Dan Hadley, engineer, Mission Engineering, Inc., personal communication, January 20, 1999). Consequently, under these design specifications the proposed Western Alignment bridge would not create instream impediments to river flows. All other parameters for the engineering and construction of this bridge (culvert placement on the floodplain, etc.) would be similar to those proposed for the bridges considered for the earlier

alternatives. The bridge would be about 45 feet high (Dan Hadley, engineer, Mission Engineering, Inc., personal communication, January 20, 1999); therefore, like the bridges considered by the earlier alternatives, it would not be crested by reasonably foreseeable flood scenarios.

In summary, since neither the repair of the Tongue River Dam nor the construction of the proposed Western Alignment bridge would substantially change flooding conditions along the reach of the Tongue River between the Four Mile Creek bridge and the Western Alignment bridge, the conclusions drawn by the WWC study (and agreed to by MDNRC as reported in the 1996 FEIS) also would appear to be applicable to this reach of the river. Those conclusions may be paraphrased as:

- Any homesites along the river reach examined by this analysis that are affected by major flood events would be affected whether the Western Alignment bridge is constructed or not;

- Increases in maximum water surface elevations during most floods due to construction of the Western Alignment bridge should be negligible. The WWC study demonstrated that during a 2,200-year flood (i.e., almost nine times the amount of water released in 1978 in the flood that raised concerns about the integrity of the Tongue River Dam), a worst case scenario indicated that a railroad bridge would increase flood depth only about two feet. Again, any homesites affected by major flood events would be affected whether the Western Alignment bridge is constructed or not; and

- Since the Western Alignment bridge is unlikely to be crested by reasonably foreseeable flood scenarios, homesites downstream from the bridge should not be subject to substantial flooding impacts as a result of the bridge.

Exhibit 1. Western Water Consultants' Supplementary Hydrologic Analysis, Tongue River Railroad.

WWC ENGINEERING
A DIVISION OF WESTERN WATER CONSULTANTS, INC.

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May 7, 1993

Mr. John Sanders, P.E.
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Lee Metcalf Building
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Helena, MT 59620-2301

WWC Job No: 043.1

RE: Part 1, Supplementary Hydrologic Analysis, Tongue River Railroad

Dear John:

We are writing to provide you with the results of Part 1 of a supplementary hydrologic analysis of an approximately 12-mile reach of the Tongue River located immediately downstream of Tongue River Dam. This study was completed in accordance with discussions between WWC and DNRC on April 13, 1993 and with the authorization of Tongue River Railroad sponsors.

Purposes of the Study

The purposes of this study were: 1) to provide a preliminary assessment of the impacts on six inhabited or habitable structures in the Tongue River Valley resulting from the proposed construction of five Tongue River Railroad bridges, and 2) to determine whether any of the five proposed railroad bridges may be overtopped during the floods considered.

Study Methodology

This study was conducted using the HEC-1 computer program and revised versions of HEC-1 input files developed by WWC in 1990 to assess the impacts of the five proposed railroad bridges on flooding resulting from a breach of Tongue River Dam. Input file revisions were based on information provided by DNRC and map data from the Tongue River Dam and Spring Gulch, Montana USGS quads. Significant revisions to the 1990 HEC-1 files included:

--Use of reservoir inflow hydrographs based on percentages of the Tongue River Reservoir Probable Maximum Flood (PMF) hydrograph developed for DNRC by Harza Engineering Company,

--Use of Tongue River Dam spillway discharge rating data for the proposed 250-foot wide labyrinth spillway as shown on Figure 3-14 of the Decker Coal Company Mine Mitigation Study,

--Addition of six new cross sections (Lee, Musgrave, Thompson, No Name No. 1, No Name No. 2, and Hosford) at the approximate locations of homesites in the Tongue River Valley (All HEC-1 cross sections are shown on enclosed Maps 1 and 2), and

--Modification of the TR-R4 railroad bridge cross section. This modification involved shifting the approximately 500-foot wide opening between bridge abutments to the west of its location in the 1990 HEC-1 cross section in order to decrease the impact of this structure on channel conveyance. This minor design change has been discussed with and approved by the railroad sponsors.

As directed by DNRC, floods producing peak spillway discharges of approximately 60,000, 100,000, and 120,000 cfs were each analyzed twice, once with and once without the proposed railroad bridges in place. Since the proposed labyrinth spillway will be theoretically capable of safely passing these floods, no breach of the dam was considered. Using the same spring flood return period graph from which major flood return periods were estimated for the Decker Coal Company Mine Mitigation Study, the floods causing these spillway discharges would have return periods of approximately 2,200 years, 5,000 years, and 10,000 years, respectively. The 100,000 cfs flood is the design flood for the proposed 250-foot wide Tongue River Dam labyrinth spillway. The major 1978 flood which threatened the existing Tongue River Dam spillway had a peak inflow rate of about 17,500 cfs and produced a peak spillway discharge of approximately 6,800 cfs, which helps to place into perspective these much larger flows used in this analysis.

If, during analysis of the 60,000 cfs flood, the proposed bridges were shown to significantly impact the homesites, smaller floods were to have been analyzed to establish the peak flow rate below which the presence of the bridges would not impact the homesites. Completion of this component of the original scope of work was not considered necessary, as described below.

Results of the Study

The results of this study are illustrated on the accompanying drawing, HEC-1 Analysis Downstream of Tongue River Dam, dated May 3, 1993. This drawing shows the Tongue River routing reach profile, HEC-1 cross section locations, approximate existing homesite locations, maximum water surface elevations (MAX WSEL) at HEC-1 cross sections computed during the study, and a tabular summary of maximum water surface elevations at the railroad bridge cross sections.

WWC

Conclusions

This HEC-1 analysis indicates that, during floods of the magnitude under consideration:

1. No homesites should be impacted solely as a result of the construction of the proposed railroad bridges. In other words, at the flow rates investigated, all five homesites located upstream of the most downstream railroad bridge (cross section TR-R4) are inundated without the railroad.

2. The extent of inundation of homesites should not be appreciably increased as a result of construction of the railroad bridges. The maximum effect of the bridges is seen at cross section SG-1AR, where a spillway peak discharge of 120,000 cfs would result in an increase in water surface elevation of only 6 feet. At a peak spillway discharge of 60,000 cfs, the computed effect of the bridge at this cross section would be an increase of only 2 feet.

3. Increases in maximum water surface elevations during 60,000 cfs or smaller floods due to construction of the proposed railroad bridges should be negligible.

4. The crest elevations of the railroad bridges are well above the computed water surface elevations at all discharge rates analyzed, indicating that the bridges would not be overtopped and separate breach analyses of the railroad fills should not be necessary. Therefore, continuing the flood analysis downstream from the bridges is not necessary.

Based on the results of this Part 1 analysis, it is our opinion that the railroad bridges would have a minimal impact on flood levels at the six homesites studied. At 100-year flood levels and below, the effects of the bridges would be insignificant. Based on the results of the Part 1 analysis, we feel that Part 2 (HEC-2 water-surface profile and railroad bridge breach analyses) is not warranted. Please advise if you concur with this opinion.

Sincerely,

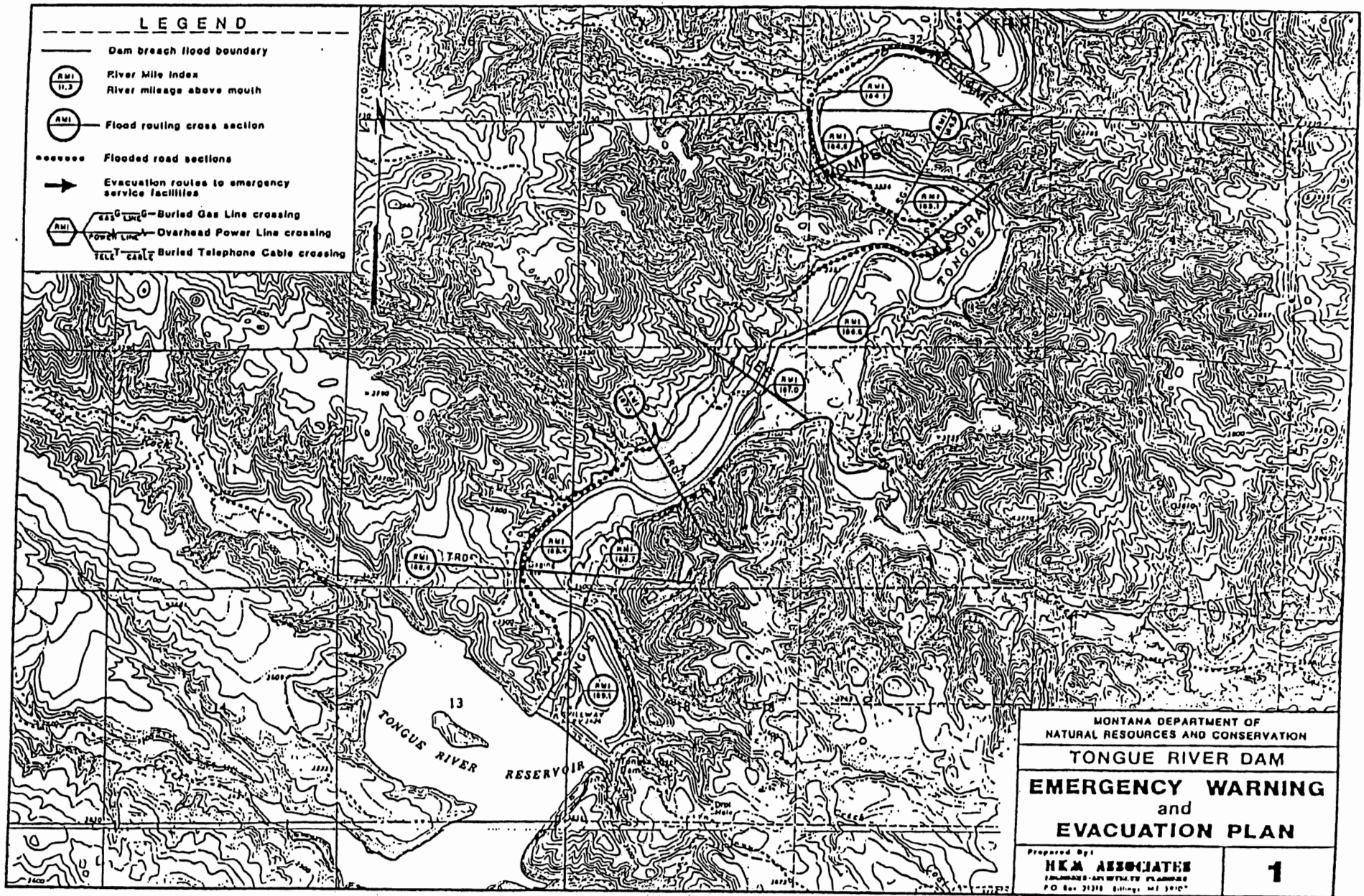
John Galbreath

John Galbreath
Design Engineer

JG:hjp

Enclosures: as noted
xc w/enclosures: Mr. Doug Day, WESCO Resources
Mr. Alan Newell, HRA

WWC



REVISED BY WESTERN WATER CONSULTANTS MAY 1993

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION

MARC RACICOT, GOVERNOR

LEE METCALF BUILDING
1520 EAST SIXTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE (406) 444-6699
TELEFAX NUMBER (406) 444-6721

PO BOX 202301
HELENA, MONTANA 59620-2301

July 2, 1993

Mr. John Galbreath
WWC Engineering
1949 Sugarland Dr., Suite 134
Sheridan, WY 82801

Dear John:

We have reviewed your report entitled Part 1, Supplementary Hydrologic Analysis, Tongue River Railroad. The report is clear, concise, and reflects our understanding of the tasks you were to perform pursuant to our discussion on April 13, 1993. Although we are surprised that the proposed railroad bridges would have so little effect on flooding at the homesites in question, we concur with your conclusion that Part 2 of the analysis is not warranted.

Thank you for your professional work on this project. If you have any questions, please feel free to call me or John Sanders.

Sincerely,

Glen McDonald

Glen McDonald, P.E., Chief
State Water Projects Bureau

GM:JS:ms

SOCIO-ECONOMIC ADDITIONS

As we discussed in our meeting in San Francisco, we request that the socio-economic section of the SEIS include an evaluation of benefits and impacts for a mine development scenario and a non-development scenario. In addition, the following presents language that we would like included in the SEIS sections indicated or at a location in the SEIS that you feel is more appropriate.

We recommend that the following be inserted in Section 5.3.9 of the SEIS

Evaluation of Impacts to School Trust Land

The TRR could provide access for coal reserves in Montana located along its route, and could also provide a shorter haul distance for Wyoming coal that is currently transported on existing Burlington Northern-Santa Fe (BNSF) tracks to Huntley, Montana before turning east. The Northern Plains Resource Council (NPRC) funded an economic report prepared by John Duffield, Bioeconomics, Inc. Duffield's January 1994 report concluded that the proposed TRR had the potential to have a large negative impact on Montana coal mines. The Tongue River Railroad Company (TRRC) prepared a rebuttal report dated May 9, 1994 which questioned both the assumptions and findings contained in the Duffield report. Land Board members have expressed concern that approving easements might not be advantageous to the school trust.

Construction of the TRR would provide revenue to the school trust through sale of easements. In addition, the TRR would place some 150 parcels of unleased school trust coal estate within 15 miles of rail access. The adverse economic impacts contemplated by the Duffield report depend on assumptions and conditions that are disputed, that are not static over time, and that are outside the control of the Land Board. Already proposed (and under concurrent consideration by the STB), is a rail line from the Gillette, Wyoming area running east through South Dakota that will provide access to upper midwest markets without going through Montana. The DNRC's conclusion is that school trust lands are placed in a better long-term development position with rail access in place than without.

State Land Ownership and Lease Status

State land ownership in the coal producing areas of southeastern Montana is dominated by the traditional section 16 and 36 ownership pattern. That means State ownership is well diversified and constitutes 5 to 6 percent of most townships. An economic impact to the Montana coal industry would generally be expected to result in a proportionate impact to state school trust lands. However, for any specific development proposal, state land may or may not be involved.

While the State owns over six million acres of mineral rights, currently only 14,640 acres (29 leases) are under lease for coal, and only 1,280 acres (2 leases) are currently producing coal. Of these two leases, one is in the Colstrip area, and the other is in the Decker area.

An application to lease 480 acres of school trust land adjacent to the Spring Creek Coal

Mine is currently being processed by the DNRC. Approximately 40 million tons of recoverable reserves are contemplated from this state tract. Spring Creek Coal Company intends to expand its mine operation onto State and Federal land and increase production over time. Spring Creek Coal Company's current sales contracts utilize the existing southeastern rail route. The TRR would provide Spring Creek Coal Mine with potential future access to upper midwest markets.

Coal Reserve Statistics

Department of Energy statistics show that Wyoming currently produces seven times as much coal (282 million tons vs. 41 million tons in 1997) but Montana has nearly twice as much remaining undeveloped reserve (120 billion tons vs, 68 billion tons). This means Wyoming is ranked number 1 in the U.S. for current production, but Montana is ranked number 1 for potential future production.

The TRRC notes that over 300 million tons of recoverable coal would be placed within 1 to 5 miles of the TRR between Ashland and Decker. This coal is relatively high BTU (8,500 - 9,000 btu/lb), low sulfur (0.18-0.20%) and low ash (5-6%). High BTU "compliance" coal such as this is in increasing demand since boilers using it will operate below the sulfur dioxide emission rate currently mandated for all new and many existing power plants in the U.S. By contrast, Montana's Colstrip area produces “non-compliance” coal -- the BTU content is above 8,500 BTU/lb, but sulfur content is too high to meet federal standards. Purchasers must install "scrubbers" to utilize non-compliance coal. As a result, marketing non-compliance coal out of state is becoming more difficult.

Duffield Report

The Northern Plains Resource Council commissioned an economic study by John Duffield, Bioeconomics, Inc. The TRRC reviewed and filed a rebuttal report for the STB'S consideration. The Duffield report concludes in pertinent part:

> The Decker-Spring Creek area mines in Big Horn County, Montana could potentially benefit from the TRRC extension. However, these mines are already operating at capacity. To conclude, with regard to the coal mining industry, the proposed TRRC extension has the potential to have a large negative impact on Montana coal mines. Independent of what BN chooses to do, there is no possibility that the railroad could have a positive impact on Montana coal mining for the foreseeable future. Given that the TRRC extension improves Wyoming's access to the upper midwest, it could also lessen the chance that other Montana coal deposits would ever be developed. (Duffield Study, page 6)
>
> The only way that the TRRC could be a plus for Montana is if Montco was built or the Decker-Spring Creek mines were expanded; this is very unlikely given the current 125 million tons per year excess capacity in existing Powder River Basin mines. (Duffield Study, page 7)

Duffield calculated an adverse competitive status with Wyoming mines based on a shortened haul distance for Wyoming coal that currently is shipped to upper midwest markets through Montana to Huntley, then east. This calculation required assumptions

that are disputed by the TRRC.

- Duffield assumes Decker and Spring Creek mines are operating at capacity, the proposed Montco mine will not be developed, and therefore none of the Tongue River area will take advantage of the TRR route to upper midwest markets.

  TRRC states that between six and eight million tons of incremental annual coal capacity currently exist at Decker and Spring Creek mines. They cite statements by Decker and Spring Creek mine managers in support of their position. The proposed Montco mine lacked rail access, which the TRR would provide. The TRRC anticipates shipping additional production from Decker and Spring Creek, as well as new production from two or three new surface mines in the Tongue River Valley.

  Spring Creek Coal Mine's current expansion proposal, which includes state land, would appear to cast doubt on Duffield's assumption. The coal reserves available in the Tongue River Valley are generally high BTU, low sulfur, compliance coal that is increasingly in demand.

- Duffield assumes Wyoming mines have approximately 116 million tons in annual excess production capacity, which would negate any development of Tongue River area reserves.

  The TRRC states that the Duffield figures are based on air quality permits, and that actual excess capacity is about 67 million tons. The TRRC states that 57% to 90% of Wyoming's excess capacity is for lower quality coal which poses no competitive threat to the high quality compliance coal reserves in Montana's Tongue River area.

- Duffield assumes transportation rates will partially or fully reflect the 130 mile reduction in distance. By equating this to a purchase cost savings, Duffield forecasts increasing purchases of Wyoming coal at the expense of Montana coal.

  TRRC concedes that over a railroad's entire system, rates for coal hauls will be directly related to haul distance. However, TRRC contends that for specific markets or supply areas, many other factors also influence the haul rates and therefore a linear extrapolation is not representative of the real-world market. TRRC presents ICC data on BNSF's Upper Midwest 1992 rail rates (Rebuttal report, Table G, page 17). This data shows examples of BNSF charging different rates for similar haul distances and identical rates for different haul distances. TRRC therefore questions the validity of Duffield's core assumption.

  The data presented by TRRC do appear to cast doubt on the linear extrapolation utilized by Duffield. The Duffield study also concedes that the cost savings they forecast for Wyoming coal might not actually be passed on to purchasers, which would lessen or eliminate the adverse consequences forecast by the mathematical model.

> More importantly, Duffield assumes static market conditions, including that the only alternative existing for Wyoming coal destined for upper midwest markets is the existing BNSF route through Huntley (versus the 130 mile shorter route through Tongue River if the TRR is built). If the Gillette, Wyoming area coal mines were to gain access to upper midwest markets through a direct route through South Dakota, then the economic calculations prepared by Duffield would be meaningless. The Dakota, Minnesota & Eastern Railroad (DM&E) has under concurrent review by the STB just such a proposal. If the DM&E line is constructed, the Montana/Wyoming competitive forces contemplated by the Duffield study for the upper midwest markets, to the extent they are legitimate, would come to pass anyway, with or without the TRR.

There is no guarantee that either or both the TRR and DM&E rail lines will be built. In fact, most all aspects of the coal industry (supply, demand, price, technological advances, transportation, regulatory environment, tax structure, alternative fuels, etc.) are external factors outside the State's control. Given the dynamic and uncertain nature of the coal industry over the long term, the State would likely recommend granting the TRR easements, assuming all environmental concerns can be addressed. The value of the easement rights granted is secured for the trust up-front and, if built, the TRR will provide rail access for state lands in the Tongue River area. Though future competitive forces and conditions are uncertain, state trust coal lands are placed in a better long-term development position with rail access than without.

We recommend that the following section be inserted on Page 5-9 between lines 6 and 7. In addition, this section should be revised to match with the recommended language provided for pages 5-24 and 5-25 as presented in the Permits/Easements submittal.

The following provides an economic overview of the MCFH:

MCFH was transferred to the state MT DFWP from the U.S. Fish and Wildlife Service in 1983 for use as a warm-water fish production hatchery to meet the state's needs for game fish such as walleye, pike, bass, channel catfish, and various forage species.. MCFH also provides rearing capacity for research species, species of special concern, and endangered species as needs arise within the state and surrounding region. MCFH's importance to the state's recreational fishery cannot be overemphasized as it is the sole source for warm-water game fish for 68 reservoirs, provides cool and cold water fish for an additional 67 reservoirs in Montana. The mean economical value to the state for the Fort Peck Reservoir alone in 1997 dollars was approximately $2,601,096, based on 36,309 angler days (G. Bertellotti, MT DFWP, personal communication, 1999). The economic value generated by the hatchery extends to the communities surrounding these reservoirs in the form of jobs and tourism.

MCFH occupies a 242.25 acre site located west of Miles City, Montana. The land is used for hatchery facilities, related residential units, and ungrazed rangelands (MDSL et al. 1989). The land is composed of two parcels obtained from the U.S. Fish and Wildlife Service (USFWS) and the National Park Service via the Land and Water Conservation Fund (LWCF). MT DFWP made an initial investment of $5 million to upgrade the

hatchery for warm-water culture from 1987 to 1989 (MDSL et al. 1989). Since 1989 MT DFWP has made an additional investment of $1,500,000 to expand the number of rearing ponds at the site and other hatchery facilities. These improvements increased production capacity appreciably, but also brought the production area much closer to the proposed railway centerline. Four more one-acre ponds and a new boiler were added in 1999 at a cost of $900,000 to enhance bass production to meet current requests (G. Bertellotti, MT DFWP personal communication 1999). Two supply pipelines provide primary and secondary water sources for the 46 earthen ponds, 8 raceways, 320 incubation jars, 62 early rearing tanks, and other facilities at the MCFH.

In fiscal year (FY)1999, MCFH had an annual budget of $ 207,086.60 for all direct costs, a 28% decrease from the previous year (MT DFWP 1999). Approximately 70% of annual funding comes from Federal Dingell-Johnson Restoration Grant funds, with the remaining 30% of funding coming from state license revenues. In February of 1989, Jerry Blackard, Deputy Assistant Regional Director for Federal Aid for the USFWS, expressed concerns regarding any TRR-related damages to hatchery structures built with Federal Aid funds. According to Mr. Blackard, there is real potential for MT DFWP to lose Federal Aid funding if MT DFWP loses control of these facilities including the water supply pipeline. This was confirmed by the Assistant Regional Director for Federal Aid (Mary Gessner) in a letter to MT DFWP dated June 3, 1998 (See attached letters). Although it is not clear whether TRR operational impacts would constitute a "loss of control", if construction or operation compromised adequate maintenance, caused declines in production, or prevented MT DFWP from making timely repairs to facilities built with Federal Aid monies, including Dingell-Johnson funds, the state could lose the source of the majority of their annual funds. Without appropriate mitigation measures in place to ensure such impacts do not occur and funding is not jeopardized, MT DFWP cannot grant an easement.

Environmental Consequences

Environmental consequences to the MCFH from the construction and operation of the Tongue River Railroad could include these potential adverse effects:

- Possible disruption in supply of warm water fishes and corollary effect on warm water recreational fishing (quantified in terms of visitor days and value to State economy);
- Potential production losses due to vibration effects, coal dust, or introduction of hazardous materials (herbicides, diesel spills, etc.);
- Potential loss of State investment in facility upgrades;
- Potential loss of Federal matching funds;
- Potential loss or transfer of employment if facility were to be relocated.

Studies will be required to determine the severity of these potential impacts from railroad construction, routine rail operations as well as from potential catastrophic events.

Table 2
State of Montana Permit Information Requirements For Construction of the Tongue River Railroad

Permit or Easement Name/ Designation		Temporary Water Use (Form 600)		Floodplain Development Permit		Navigable Rivers LUL/Easement (Form DS-432)		LUL for Access to State Lands (Form DS-401)		Right of Way Easement for Crossing State Land		Notice of Settlement of Damages Form (DS-457)		MDT Encroachment Permits
Purpose of Permit		Dust control and fill placement.		Construction of fill and/or bridges within 100-year floodplain		Bridge crossings over the Tongue River		Field investigations such as geotechnical data, surveying, etc.		Identification and legal description of right of way and any conditions for easement		Identification of damages to current leaseholder improvements and mitigation for impacts		Control of construction of railroad across state, county and federal aid highways.
Information Requirements	1	Quantity of water required and period of appropriation.	1	Site plan showing bridge crossings and any fill encroachments on the 100-year floodplain, structure locations, flood proofing measures, elevation of bottom of structure, location of flood fringe and the floodway and the source channel. **[TRI Sec 3.1.1; TRII Sec 3.1.1; ER Fig.4-2]**	1	A map with legal description of location of bridge crossing(s).	1	Purpose for access.	1	Plat or survey for ROW crossing (one for each section of land crossed). Provide centerline and width on each side. Indicate quantity of land requested.	1	See ROW easement requirements.	1	Highway survey stations, milepost, distance to centerline, and distance from ROW line for roadway/railroad intersections.
	2	Point (legal description) and means of diversion.	2	Plan view of the structure(s) showing external dimensions, finished elevations and excavation and fill quantity estimates.	2	Name of water body.	2	Map.	2	Current lessee name, land use and improvements.			2	Length of permit.
	3	Place of use (legal description).	3	Specifications for flood proofing, fill, excavation and riprap.	3	Name and location of adjacent property owners.	3	Legal locations for access requirements.	3	Current lessee statement of leasehold damages (Notice of Settlement of Damages, Form DS-457), signed by current lessee			3	Oversize load bypass at I-94.
	4	Location map showing: section corners, township and range, point of diversion, place of use and location of conveyance structure.	4	Hydraulic analyses showing the impacts of the development on the 100-year flood. **[TRI Sec 4.9.1.4; ER Sec 4.8.1 & Appendix D]**	4	Type of structure(s)			4	Reason for crossing State land and discussion of alternative routes and why not selected.			4	Adequate spacing between at-grade crossings to reduce risk of accidents.
	5	Will require public notice.	5	Design calculations and certification that the design has been performed in accordance with local floodplain regulations.	5	Materials.			5	Cultural Survey.			5	Traffic control at S-314 and south end of railroad to prevent "trapping" of vehicles.
					6	Construction and operation schedule.			6	Map of surrounding area ownership.			6	Areas impacted by road relocations need to be identified and/or within corridor of evaluation. **[ER Sec 4.3.1]**
					7	Project need. **[TRI Executive Summary; ER Executive Summary & Sec 1.2.1]**			7	Submit easement application to area office [**is this the case for this project?**].				
					8	Easement legal descriptions to be completed by a licensed surveyor or engineer.								
					9	Impact to water resource (quality and quantity, fisheries, flora). **[ER Sec 4.8 & 4.9]**								
					10	Impact to navigability and recreation. **[ER Sec 4.1.1]**								
					11	Impact to bank and bed stability. **[TRII Sec 4.7.1]**								
					12	Attach copy of permit or application for 124, 310 and/or 404.								

Notes:
1. Shaded items are required by MEPA and need to be addressed in the EA/SEIS.
2. Items in bold brackets describe location of MEPA requirement.

Table 2
State of Montana Permit Information Requirements For Construction of the Tongue River Railroad

Permit or Easement Name/ Designation		Storm Water Discharge (MPDES)-General Permit MTR 100000		MPDES (construction related discharge)-Project specific permit.		310 Permit		Short Term Exemption from Surface Water Quality Standards (3A)		401 Certification		Stream Preservation Act (SPA 124)		Easement for Crossing Fish Hatchery		Approval for private easements across existing DFWP conservation easements
Purpose of Permit		Discharge of storm water from construction activities to state waters		Project specific information (site specific erosion control plan) to be used in conjunction with the General Permit.		For alteration or modification to the bed or banks of a perennial stream		Primarily for short term sedimentation of the Tongue River during bridge construction (may not be required if 310 or 124 permit is applied for).		The State's certification that a 404 permit has been completed to meet State water quality standards		For work that will affect the bed or banks of a stream, i.e. bridge crossings, culverts, etc.		Identification and legal description of right of way and any conditions for easement		Identification and legal description of right of way and any conditions for easement
Information Requirements	1	Describe the construction activity.	1	See Storm Water Discharge General Permit requirements.	1	Aerial photo showing: location of site, name of stream and direction of flow, shorelines and property boundaries adjacent to project.	1	Need for 3A permit decided by DFW&P based on review of 310 permit.	1	404 permit application.	1	Completion of 310 permit replaces need for this permit.	1	Stability analysis for camelsback and vibration analysis for the hatchery facility.	1	Identification and legal description of any conservation easements along the alignment.
	2	Provide a schedule for major activities.			2	Details illustrating the proposed construction.	2	Identify type of equipment and construction that could cause sedimentation.	2	401 certification is public noticed with COE 404 permit application.			2	Exhaustive evaluation of alternative alignment that would completely avoid the hatchery.	2	Methods for allowing wildlife to cross railroad.
	3	Total area of the site and area to be disturbed. **[ER Table3-3]**			3	General information about the project describing type of construction, materials and equipment. **[TRI Sec 3.1.1; ER Sec 3.2]**	3	Discuss alternatives considered and/or available for minimizing sedimentation. **[TRI Sec 4.9.1; ER Sec 4.8.1]**	3	Need to show how the Railroad will not worsen and could improve existing impaired stream status for Tongue River and Hanging Woman, Otter and Pumpkin Creeks. **[TRI Sec 4.9.3, ?]**			3	Mitigation plan for addressing vibration, chemical and herbicide impacts to the hatchery.	3	Evaluation and mitigation of impacts to ephemeral streams. **[ER Sec 4.8 & 4.9]**
	4	A site map showing all areas of soil disturbance, areas of cut and fill, drainage patterns, final constructed slopes, stockpile and waste storage areas, erosion control facilities, revegetation areas, location of impervious structures, surface water features and 100-year floodplain boundaries			4	Schedule (start and end dates).	4	Provide location map of construction site(s) and any other plans or drawings that fully describe the work.	4	Impacts to numerical standards and narrative standards especially fisheries and wildlife. **[TRI Sec 4.10 & 4.11; ER Sec 4.9, 4.10 & Appendix H]**						
	5	Identify and sand and gravel quarry operations and erosion control.														
	6	Describe cut and fill materials and their potential erodibility. **[TRII Sec 4.7.1.1]**														
	7	Identify location of outfalls and name and location of receiving water relative to disturbance operations.														
	8	A description and implementation schedule for stabilization practices such as brush barriers, mulching, silt fences, sediment basins, etc.														
	9	Describe permanent and structural stabilization practices such as check dams, terraced slopes, sediment traps, etc. **[ER Sec 6.7]**														
	10	Indicate methods for control of sediment tracking onto roadways.														
	11	Identify waste disposal methods for construction waste, hazardous waste and sanitary waste.														
	12	Identify materials to be used during construction and how they will be stored.														
	13	Identify and locate post construction storm water discharge controls such as dry ponds, infiltration trenches, detention structures, etc.														

Notes:
1. Shaded items are required by MEPA
2. Items in bold brackets describe locat

May 4, 1999

Mr. Doug Day
Tongue River Railroad
P.O. Box 1181
Billings, MT 59103-1181

Comments on "Miles City State Fish Hatchery Investigation To Assess Potential Effects of the Construction and Operation of the Tongue River Railroad"

Dear Doug:

The following comments are being provided to the Tongue River Railroad Company (TRRC) by the State of Montana regarding the investigation of potential impacts to the Miles City Fish Hatchery (MCFH) as a result of construction and operation of the proposed Tongue River Railroad (TRRR). As presented in the following comments, the State has significant concerns that the investigation has not adequately characterized potential biological impacts to fish raised at the hatchery and physical impacts to the hatchery operations. We also have concerns regarding the assumptions and conclusions of the stability analysis for the Camelsback. As discussed below, these concerns lead us to conclude that additional, detailed site-specific biological testing is required to appropriately evaluate the environmental impacts at the MCFH as a result of construction and operation of the TRRR.

The intent of the investigation was to determine the probability of potential impacts to the structures and equipment at the MCFH and more importantly, potential impacts to the various species of fish at all life stages that are raised at the hatchery. If the investigation indicated some probability of impacts, then additional, biological investigations were to be performed.

The conclusions presented in the report imply that no impacts are likely resulting from construction and operation of the proposed railroad. However, we are concerned that the general lack of historic data and relevant literature regarding impacts to hatchery fish from vibration as being in and of itself a good reason for conducting site specific biological studies and evaluations at the MCFH. Our general comments on the report can be summarized as follows:

- The compounding of vibration and the additive effects from a new rail line and additional rail traffic in close proximity to the hatchery was not addressed.
- The question on whether or not there are impacts from the existing rail line has not been answered. It is not acceptable to conclude that there will be no effect on the

- facility by constructing a new line within close proximity to the hatchery based on an unproven assumption.
- Dr. Anderson states that little information regarding impacts from sound pressure is available for warm water fishes living in a confined environment, Appendix 6A2. We agree and therefore require that on-site biological studies be performed.
- Numerous species of fish and related responses to sound stimuli were reported in tables presented in Appendix 6A1, Pages 7 and 8. However, none of these species are the same as those located at the MCFH, none of the conditions compared are similar to conditions at the MCFH and no information is available regarding effects on zooplankton. Once again, this lack of available data indicates a scarcity of information regarding the impacts of vibration on fish and hatchery operations and, therefore, we will require on-site studies to fill these data gaps.
- The concentrations of trace metals in coal, Table 1–Appendix 6B, are significantly higher than acute water quality standards for arsenic, cadmium, chromium, copper, mercury and many of the other elements listed. Depending on the leachability of these metals from the coal, the coal could pose a significant impact to fish at the hatchery. Leach testing should be performed on the coal to determine the potential release of trace metals.
- It is a known fact that fish are highly susceptible to herbicides, more so than warm-blooded animals for which herbicide toxicity is described. The information presented in the report indicates that no data are available to determine toxic concentrations (to fish) for the proposed herbicides. A fish feeding study would be required to determine acute and chronic concentrations of the proposed herbicides.

Since the subject report leaves many unanswered questions about the potential biological impacts to the MCFH as a result of construction and operation of the TRRR, it will be necessary to conduct biological studies that are specific to the species and life stages of the fish at the MCFH. This work is required in order for the Department of Fish, Wildlife & Parks (FW&P) to identify and develop adequate mitigation measures to ensure productive long-term operation of the hatchery at no additional cost compared to current operations. Attachment A to these comments provides our required work scope for evaluating biological impacts to the MCFH.

In addition to the general comments presented above, we have several specific comments presented below that need to be addressed in order for us to more fully understand the report. These comments are presented by corresponding report section and applicable appendices.

Section 1.0 - Introduction

No comments.

Section 2.0 – Statement of Issue

The following should be included in the statement of issue:

The proposed railroad will pass along the east side of the MCFH. This hatchery is owned and operated by MDFWP, hence the state of Montana must grant TRRC an easement to cross State lands. Before an easement will be granted, FWP needs to fully identify impacts of the project, and require full mitigation of these impacts. If reductions in

MCFH productivity occur, then recreational opportunities to anglers will also be lost which translate into losses for the state's economy.

In order to determine mitigation requirements, the acute, chronic, and sub-lethal effects of TRRR operations on the life stages and various species of fish at the MCFH must be determined. The vibration studies pose the greatest challenge because of: 1) a lack of existing data in the literature, 2) logistics and specialized equipment needed to simulate vibrations *in situ* similar to that experienced by the TRRR, and 3) the complexities involving behavioral studies of fish. By comparison, quantifying the effects of herbicides, incidental coal dust, water shortages, and catastrophic events is straightforward because evaluation of these impacts draw on a more extensive body of existing data, they have direct implications for fish health and the evaluation involves calculations of risk assessment using established formulae. Interactions between the different effects also need to be addressed; e.g., additive chronic effects of herbicides, coal dust and a second railroad.

Section 3.0 – Previous Studies

No comments.

Section 4.0 – Investigation Procedure

Section 4.2 – The sensitivity of the seismographs used ranged from 0.01 to 0.02 inches per second. Equipment is available, i.e., accelerometers that can provide measurements at one or two orders of magnitude greater sensitivity. Since the question being answered is "What is the level of vibration that can cause impacts to hatchery fish?" the most sensitive instruments available should be used. In addition, measurements should be taken within the ponds, raceways and equipment within the hatchery.

What is the basis for the level of sensitivity (i.e., 0.01 to 0.02 inches per second) of the seismographs? Is this the best equipment that was available or is there literature that suggests that this is the minimal or lower than the minimal peak particle velocity that affects fish or hatchery operations?

Section 5.0 – Site Conditions (Geotechnical Evaluation)

Where is the potable water well located? Is there data from this well indicating the static water level?

Section 6.0 – Engineering Analysis

Section 6.1 and Appendix 3 - Slope stability of the Camelsback.

What is the basis for horizontal bedding planes modeled in the stability analysis? Were the bedding planes observed in exposed surfaces along the flanks of the Camelsback or inferred from the core samples? A slight dip combined with weak coal seams, moisture and vibration could lead to instability.

How deep will the fill east of the Camelsback from the construction of the I-94 overpass be? Significant fill in this area could lead to increased pore water pressure in the bedrock and/or a short term rise in the water table. This could lead to increased pressures in the formation and/or saturation of contacts between bedrock layers. This increased pore pressure in conjunction with vibration effects could lead to slope instability.

The samples used in the slope stability analysis from Boring VCO-1 may not be representative of the bedrock along the flanks of the Camelsback. The materials in the flanks have been subject to significantly more weathering and likely have lower strength values. This, combined with the possibility of the conditions presented in the comment above, could lead to slope instability.

We recommend the following analyses be performed to address the above issues:

- Determine the location and depth of the fill from the I-94 overpass and estimate its potential impact to pore pressures and water table fluctuations.
- Perform another set of slope stability analyses to determine at what angle the bedrock surfaces would become unstable. Incorporate any relevant findings from the above analysis.
- If the above analyses indicate that minor dips in the bedding planes could lead to instability, then another site investigation should be performed to estimate the slope of the bedding planes in the Camelsback bedrock formation.

Was the depth to groundwater in VCO-1 determined? It appears from the logs that the boring was terminated at the approximate depth of the water table. The logs do not indicate whether or not the groundwater depth was measured.

Please provide a summary of the definitions of the abbreviations used in the boring logs.

What is the basis for the coal strength parameters?

Section 6.2 and Appendices 4 and 5 – Structural Vibration Analysis

Figure 1 in Appendix 4 does not indicate the location of VAH-2 or the current configuration of the site facilities, i.e., the ponds located closest to the proposed alignment. Also, the seismograph monitoring locations are indicated for some boring locations and not others. The figure needs to be modified to show all seismograph monitoring locations.

The field data sheets, in many cases, do not indicate the location of the test site or vibration source. How was the field data reduced, analyzed and summarized in Table 1, Appendix 4 without any errors if the field data sheets do not indicate the conditions of the test?

What is the "peak sound" value of 76 - 78 dB on the field data sheets? It does not change much between data sheets.

The graphs in Appended Item 3 of Appendix 5 indicates little to no attenuation with distance beyond 28 feet from the vibration source at the level of sensitivity of the seismographs used. This would imply that some vibration would reach MCFH facilities. This vibration is probably not significant to structures. However, how do we know if this vibration is significant or not to the hatchery fish?

Are the vibrations induced/measured (both calibration and actual BNSF traffic) comparable to those expected by the proposed TRRR? Please justify.

What would the cumulative impact of trains passing the MCFH on both tracks at the same time be? Would this increase vibration?

It is unclear whether seismic damage criteria cited are appropriate for comparison to a fish hatchery. Please provide the data from Berger, P.R. that indicates the basis for the "1.0 inch per second on set of damage criteria". Does this criteria also apply to equipment and instruments in the hatchery building? Please justify.

Section 7.0 and Appendix 6 – Biological Impacts

General Comments:

- No on-site biological studies were performed.
- This brief literature review does not address site-specific conditions about the possible effects to hatchery productivity or general fish health.
- Mr. Anderson clearly states that there is little information on the impacts of vibration on fish. His broad statement that, "there is no indication that the fish raised at the Miles City Fish Hatchery are highly sensitive to sound or stressors" does not address any conclusions regarding the fish's sensitivity to the types of vibrations produced by trains on the proposed TRRR. In addition, there is no reference or data regarding impacts to spawning behavior, egg survival, zooplankton production or fry and fingerling feeding response.
- Most of the literature cited deal with Salmonids, while the hatchery fish are a mixture of Salmonids, Centrarchids and Percids. None of the literature cited deals with Walleye, arguably the most economically significant fish raised by the hatchery.
- Many of the numbers in the quantitative analyses are estimations that are admittedly (by Mr. Anderson) "highly uncertain."
- It is difficult to compare measurements from table to table because a single standard unit is not used consistently.
- The steps between equations are not fully explained, nor is the number of observations used in the regressions large enough to place much confidence in (n=13).
- None of the data addresses early life stages such as fry, or long-term exposure.
- The levels of noise used as low frequency (270 Hz) in Bennett's cited article are considerably higher than those generated by a freight train (14 Hz). The extremely low frequency of the sounds in question, which are closer to infrasound than to low frequency sound, may affect fish differently.

Estimating Sound Pressure Levels

The description of sound pressure level (SPL), correction factors and development of regression equations provided are difficult to follow and understand.

The study concentrates on one factor "SPL" then makes assumptions that the theoretically derived levels will have the same effects (on walleye, bass and other warm water fish species) in a hatchery system, as do actual SPL's produced by dams and actual SPL's produced and transferred in an open river system on salmonid species. We do not agree with nor is there data to substantiate these extrapolations.

Is it possible to directly measure SPL, and calibrate it to the existing railway? This would seem preferable to attempting to directly calculate it from the seismic data.

Why weren't direct measurements of SPL made in the ponds with hydrophones? This approach would provide significantly more accurate data than the theoretical SPL's derived.

Was a sensitivity analysis performed for determining the calibration factor, k and the sound wave pathway? It is not clear how this was performed and what parameters are the most sensitive in the calibration process.

What is the basis for using a time for dissipation of 2 milliseconds in the calibration?

We are not familiar with the formulation for D_r, but it appears that the denominator accounts for divergence, but not absorption.[page 2]

Could you provide the Cordier study information that identifies a wave propagation velocity of 1,000 m/s? Our references indicate velocities ranging from 150 m/s to 6,000 m/s.

How does the reference sound pressure level of 1Pa compare to that used to calculate decibels on the A-weighted scale that is standard for measuring noise levels? For instance and for comparison, how does the 49 db noise level from a train at a location adjacent to the tracks compare to an A-weighted scale?

Stated levels of sound from the trains at the raceways (5 and 18 db) are considerably less than the levels stated by Radian (55-65 db) (Steve Wertheim, personal comm. April, 1999). Please justify.

Is the correct formulae for a decibel 20 Log (P), or is it 10 Log (P)? The first form is for amplitude, the second form is for energy or power. Which applies here. [pages 1 and 4]

Is it appropriate to use the rms value for pressure? The value should be the same as that used to measure SPL in the biological assessment portion of the report. [Table 2 and page3]

It is stated on page 3 that the density drops out of the derivation for sound pressure. This does not seem to be the case, since density is used to compute the sound pressure.

The equation for "P" is based on the statement that the "peak sound pressure is directly proportional to the particle velocity". The acoustic impedance is chosen as the proportionality constant. The use of the acoustic impedance maintains dimensional equality, but "proportional" is not necessarily the same as "equivalent". While this formulation may be valid it is not referenced.[page3]

It is stated that the measured frequency is $2\pi\omega$ (page 3), where ω is the angular frequency. The relationship we are familiar with is $\omega=2\pi f$ (Sheriff, 1984), where "f" is the frequency in Hz. This relationship would then reveal a representative value for ω of 360, rather than 10, as was computed on page 3. The resulting change in "k" would be proportionate.

How is the predominant frequency measured? Is this frequency representative of the compressional waves that are used in this analysis, or is it unduly affected by other waveforms? The assumptions made with regards to frequency will affect the computed "k" factor both in terms of the angular frequency used in the wave equation, and the attenuation coefficient that seems to be missing.

The procedure that is used to derive the theoretical V_{peak} is valid only for compressional waves. This assumption may be reasonable since shear waves can not propagate in fluid, but can shear or surface waves be significant vehicles for underground sound transmission?

Why is it necessary to calibrate the measured particle velocities to a theoretically derived one? This is not explained. It would seem that the measured values are far more reasonable than a theoretically derived estimate. Why is "k" 0.009, instead of 1.0. If "k" can be assumed to be 1.0, then the computed SPL will be significantly higher, and all of the work conducted to compute the theoretical V_{peak} would seem unnecessary. For example, if "k" is assumed to be 1.0, and a peak particle velocity of 0.02 in/sec (.000508 m/sec) is used, the resulting SPL is 718 Pa (equation for P on page4). This converts to 57 dB - significantly higher than the 16.2 dB value in Table 1.

The analysis (page 5, Appendix 6) states that the “sound” generated from trucks should be less than that from trains, but the analysis uses higher “sound” from trucks. This discrepancy needs to be discussed. Does it indicate problems with the regression equations used in the analysis?

The regression equations for the train and truck on P.5 seem counter-intuitive. Why does the truck have a larger intercept coefficient than the train? What are the error bounds for these equations?

The loss of transmitted energy at an acoustic interface is due to reflection, not refraction [page 6].

The form of the equation for α on page 6 is valid for either:

a. The amplitude of a wave after has passed through an acoustic interface both directions.

b. The energy of the wave transmitted through an acoustic interface one direction.

Is it appropriate to use this form of the equation for sound pressures?

Why does $P_{water}=P_{solid}\ \alpha^{0.5}$? Is the $\alpha^{0.5}$ term an attempt to change from the energy form for a to the amplitude form? If so, the equation for a is incorrect. If the energy form is appropriate, it would seem that $P_{water}=P_{solid}\alpha^{0.5}$ would be the correct form for the equation.[page 6].

The derivation of the equations at the bottom of page 6 is not clearly described.

We were unable to reproduce the power transmission coefficient on page 6 of Appendix 6 using the input values given.

Why are the regression equations presented at the bottom of page 6 different from those on page 5?

The level of sound frequency generated by the calibration weight (41-83 Hz) does not encompass the levels expected to be generated by the trains or trucks (11-168 Hz). Therefore, all of the estimations are extrapolations beyond the range of the regressions generated by the survey data, making them suspect.

We could not reproduce how the final estimated sound levels in Table 2 from the regression equations in the text. Where do the estimates come from?

The data in Table 1 jumps from 225 ft to 1200 ft, and does not describe the sound attenuation between these points. Also, there is no way to identify which measures are for 85 or 120 unit trains. Are we to assume that the single measurement at 1200 ft is from the larger train?

The transition from the sound transmission loss equation to the projected hatchery SPL's is vague. Please write out steps to combine the two equations.

The correlation coefficient for the train sound attenuation is fairly low (r=0.77) for something that seems to be intuitively linearly related (the farther you are from a sound the less loud it is). The p value is meaningless without a stated confidence level.

Literature on Fish and Sound

The numbers for pile driving and for freight trains appear to be similar at 10 ft (Tables 2 & 3), and the pile driving article cited (Feist 1991) showed a 50% decrease in fish densities during pile driving activity. Anderson concluded that there is no significant evidence of a direct response to the sound. A 50% reduction in the number of fish in an area indicates avoidance, which would be ecologically significant.

In addition, Feist's (1991) original thesis describes the fish as congregating behind a large breakwater during pile driving and distributing themselves evenly around the pile driving site and behind the breakwater on non-pile driving days. This behavior suggests that the fish were seeking refuge from the vibration. The distributions were statistically significant and correlated with the pile driving activity.

The assumption and attempt to conclude what happens to a different species under conditions that have nothing to do with, and can not be compared to, hatchery conditions, continues throughout (page 7, Appendix 6). The statement that sound will not affect fish eggs is incorrect. It is known that vibration at very low levels will kill eggs **[Gary, do you have a reference??].**

Comment by Mr. Anderson in reference to literature (pages 1 and 9, Appendix 6) suggests that fish at MCFH will become habituated to the sounds of trains. His assumption was based on the response of fish:

1. ***In an open system.***
2. ***Using sounds of different frequencies, intensity and level.***
3. ***Originating and traveling through different media.***
4. ***Traveling to and through different types of interfaces.***
5. ***Under conditions where fish are exposed for short periods of exposure - once or twice.***
6. ***During a life stage that drives (motivated) these fish to travel through stressful barriers.***
7. ***That could be suffering from delayed effects from these sound level exposures. (No studies regarding delayed effects are cited).***
8. ***Of a totally different genus and species of fish compared to a hatchery full of warm water fish.***

How is habituation of fish defined? How does habituation impact spawning, growth and survival? Habituation means the fish change to accommodate an external condition. We cannot accept change that will be detrimental to hatchery operations. Specific on-site studies would have to be performed to determine the effects of habituation.

An example of habituation that can demonstrate how detrimental it can be, is found in tropical fish that are taken from natal streams, lakes and habitats around the world, put into aquarium habitat and habituate to that aquarium environment. They survive, but in most cases do not reproduce, physically do not grow to their biologically potential size, feed and act differently, have a shorter life span, but they do live (Dr. Williams T. Innes 1966). In the Miles City Hatchery if fish don't grow, don't spawn, eggs don't survive, or there are long term (delayed) effects, but they habituate, habituation may just as well mean they die as a fish hatchery without spawning fish has no purpose.

On page 8 Mr. Anderson makes a good point, " The response of fish to sound depends on their motivational state, and they may only respond during certain times of the year or stages of their life cycle (Anderson 1988)." This statement is made but there is no follow-up as to what responses are, what species respond to what and at what stage of life. These are the questions we need to answer.

Further Information on Effects of Sound on Fish

Tolerance in these referenced studies (papers) do not address the response by fish at different life stages, effects on spawning, growth and long term physical effects (delayed responses) or effects on the species being raised at the MCFH.

Herbicide and coal dust

The information on the herbicides appears current, but to estimate effects on fish from mammal studies is not defensible. Mammalian biology is very different from fish biology and aquatic organisms are generally more sensitive to toxins. Another consideration is that MFWP often releases older brood stock for fishing derbies, and bioaccumulated toxins could be conveyed to humans through the capture and consumption of these fish.

It would be more acceptable to go with the initial decision to use mechanical means for weed control, as this was MFWP's original preference.

The wind rose shown in the engineering report does show winds capable of blowing coal dust towards the hatchery. Although the amount of coal dust is not likely to be large, it should be considered a potential impact. Without appropriate evaluation of the toxic effect of coal dust it is not possible to quantify these impacts.

What are the units of concentration in Table 1 of Appendix 6B?

The concentrations of the metals in coal presented in Table 1, Appendix 6, could be very toxic to fish if these metals were to be released to the MCFH ponds (even if the concentrations are in parts per billion assuming they are moderately leachable). The leachability of these metals needs to be determined.

Coal dust and herbicides are addressed in a very cursory way. These chemicals are used as a sterilant. Plants die and algae, which is a plant, is needed to some extent to keep fish feed (zooplankton) alive in the ponds. Toxicity on zooplankton is not addressed.

Allowable levels in USSR are irrelevant. Toxicity is different for different fish and zooplankton and could change for the same species under different conditions and life stages.

A fish feeding study to ascertain the levels of coal dust and/or herbicide acute and chronic effects should be completed for each potentially affected life stage and species. The EPA is currently working on a similar study for 2-4-D, but their toxicity information does not include much information on aquatic effects.

Issues in the scope of work that were not addressed:

Vibration measurements parallel to the tracks to evaluate "focusing" effects.

Soil/water interface vibration measurements.

Stability analysis of ponds.

Impacts to water supply lines.

Analysis of fish development impacts.

Review of MCFH water supply quality.

Determination of "significant" vibration levels to eggs, fry, fingerlings, mature fish and zooplankton.

Closing

In order for the FW&P to develop a mitigation plan for an easement across the MCFH, the comments presented above need to be addressed including performance of a detailed biological evaluation. Appendix A to these comments presents our required minimum work scope for performing a biological assessment for the MCFH. An alternative to performing the assessment provided in Appendix A would include a mitigation plan based on worst-case scenarios leading to impacts to the MCFH. This plan would be developed by FW&P and provided to the TRRC. In order to prepare the mitigation plan, FW&P may require some additional information/evaluations to estimate impacts from worst-case conditions and for establishing baseline production conditions for the hatchery. FW&P would be pleased to discuss this option with TRRC, or your representatives.

If you have any questions concerning this submittal or would like to meet to discuss our comments, please call the undersigned at (406) 444-2074.

Sincerely,

Wayne Wetzel
Special Projects Coordinator
Montana Department of Natural Resources and Conservation
cc: Bertellotti
Hallsten
Martin
PAM
STB
TREC

Train Speed, Coal Dust Movement

Train Speed

The Miles City Warm Water Fish Hatchery is located adjacent to the northern terminus point of the Tongue River Railroad with the Burlington Northern Santa Fe Railway main line. At the northern terminus, the TRR connects with the BNSF in a "Y" configuration, allowing rail traffic to flow either to the west or to the east. The western "Y" is on a 3°56'16" degree curve and the eastern "Y" is on a 2°59'59" degree curve. Empty coal trains traveling on the BNSF from either the west or the east and connecting with the TRR and loaded coal trains traveling north on the TRR and connecting with the BNSF will be required to gradually reduce speed in order to safely navigate these curve and switches.

Train performance modeling completed by Corporate Strategies, Inc. ("CSI") on behalf of TRR indicates that train operations will be limited to a maximum speed of approximately 20 mph in order for unit coal trains, either empty or loaded, to safely navigate the degree of curvature and run onto or leave the BNSF mainline at the northern terminus. In order to reach safe operating speeds at the terminus, trains will have to begin reducing speed approximately 0.5 to 1.0 mile prior to reaching the terminus point. Train operating speeds on the BNSF main line, in the vicinity of the TRR terminus, are limited to 30 mph.

Train engineers are licensed by the Federal Railroad Administration ("FRA") pursuant to requirements specified in 49 CFR 240. Locomotives are manned by two crewmen, a conductor with the responsibility for train movement and an engineer with the authority to control train operations. Both are responsible for safe operation in accordance with BNSF operating rules and dispatcher or signal movement authority. Devices (event recorders) are installed on most modern train locomotives to monitor operation of the unit, including train speed. Train crews exceeding train operational limits are subject to discipline by the rail operator (with oversight by the FRA).

In addition to FRA regulations, the fact that trains entering or leaving the TRR alignment will be either exiting or entering BNSF mainline traffic requires low operating speeds to allow for safe traffic convergence. It is estimated by CSI that actual train operating speeds at the northern terminus will not exceed 20 mph.

Coal Dust Movement

Radian International on behalf of TRR performed an air quality evaluation to assess the potential effect of TRR operations on the Miles City Fish Hatchery. The evaluation assessed the following: coal dust emissions from open railroad cars during transportation; and, the use of herbicides along the rail right of way. The results of Radian's evaluation are presented in Appendix 7 to the "Miles City State Fish Hatchery Investigation to Assess Potential Effects of the Construction and Operation of the Tongue River Railroad", Womack & Associates, Inc., March 1999). The methodology and results of Radian's evaluation relative to coal dust movement are contained in the report referenced above and summarized below.

Coal dust emissions from coal handling are typically associated with loading and unloading activities at the mine site or destination point. The erosion potential for transported coal is greatest at the mine site and decreases thereafter due to coal dust settling and compacting to the bottom of the rail car during transport. A 1984 article regarding coal dust fugitive emissions stated, "Coal fines tend to accumulate in the bottom of the rail car from vibrations in transit." (Stein, Crow, 1984) Also, the Montana Department of Environmental Quality, Air Quality Bureau has stated that coal dust should settle to the bottom of rail cars within the first few miles of the mine site (Radian International, 1999).

Radian findings show that, if a train is traveling at speeds of 47 mph or less, there will be no emission of coal dust from the rail cars as they pass the hatchery facility. The Miles City Fish Hatchery is located adjacent to the area where the TRR connects with the BNSF main line and train speeds are limited to 20 mph. The coal in the rail cars will have been subject to a minimum of 80 miles of transport and to greater train speeds

prior to reaching the terminus at Miles City and will have had sufficient time to settle in the rail cars. As a result of train operations in the vicinity of the Miles City Fish Hatchery, the emission of coal dust near the facility will not occur.

Tongue River Railroad Company - Weed Control Management

General Weed Control Management

Prior to the construction of the Tongue River Railroad project, a weed control plan ("plan") will be developed in conjunction with appropriate state and local agencies responsible for weed control in Custer, Powder River, Rosebud and Big Horn counties. The plan will be designed and implemented for the full length of the rail alignment from Miles City to the southernmost terminus point with the primary objective being to control the establishment and spread of noxious weeds along the rail alignment.

The TRR weed control plan will incorporate both mechanical control methods and herbicide application. If mechanical means are not adequate to control the spread of some species of concern, a combination of mechanical and herbicide application may be necessary. Only those chemicals approved and licensed by the State of Montana will be used to control trackside weeds. The chance of herbicide transport to properties adjacent to the rail right of way is dependent on wind direction, wind speed, and other atmospheric conditions.

TRR Weed Control In Proximity to Miles City Warm Water Fish Hatchery

Radian International on behalf of TRR performed an air quality evaluation to assess the potential effect of TRR operations on the Miles City Fish Hatchery. The evaluation assessed the following: effect of coal dust emissions from open railroad cars during transportation; and, the use of herbicides along the rail right of way. The results of Radian's evaluation are presented in Appendix 7 to the "Miles City State Fish Hatchery Investigation to Assess Potential Effects of the Construction and Operation of the Tongue River Railroad", Womack & Associates, Inc., March 1999).

Pursuant to Radian's recommendation, TRR intends to use only mechanical means of weed control in its right of way adjacent to the Miles City Warm Water Fish Hatchery between the point the rail alignment crosses Interstate 94 north to the connection with the Burlington Northern Santa Fe Railway mainline.

Generally, the prevailing winds in the vicinity of the Miles City Warm Water Fish Hatchery are from the northwest and southeast. The winds in the area are from directions that would carry from the rail alignment towards the hatchery facility less than 20 percent of the year.

If it becomes necessary to utilize herbicide application to control noxious weed infestation along the TRR right of way between Interstate 94 north to the BNSF Railway's mainline, TRR agrees that any herbicide application will be subject to prior approval from the Montana Fish, Wildlife & Parks and the use of herbicide would be used only under controlled means of application such as by hand sprayer. Montana Fish, Wildlife & Parks prior approval will be required as to the type of herbicide to be applied, application rate, means of application and will take into consideration wind speed and wind direction at the time herbicide application is proposed.

Proposed mitigation measures to ensure the protection and long-term viability of the water supply pipelines serving the Miles City Warm Water Fish Hatchery from the Yellowstone River and the Tongue River.

- Currently there are two water supply pipelines serving the Miles City Fish Hatchery, one a 24” diameter line from the Yellowstone River and the second a 14” diameter line from the Tongue River.
- It is critical that the integrity of these water supply pipelines be maintained during the construction and operation of the Tongue River Railroad.
- The following measures are to be undertaken in order to protect and ensure the integrity of the water supply pipelines during construction and operation of the Tongue River Railroad. The Tongue River Railroad will be responsible for all costs associated with implementing these measures:
    - Relocate, as necessary, portions of the Yellowstone River and Tongue River water supply pipelines so that each pipeline crosses the rail right-of-way at a right angle or perpendicular to the rail alignment.
    - To ensure the structural integrity of the water supply pipelines, that portion of each pipeline lying perpendicular beneath the rail alignment will be encased in a reinforced concrete pipe (“RCP”). The RCP will be of sufficient size to allow for inspection and maintenance of the water supply pipelines.
    - Access to the pipelines beneath the rail alignment will be provided by installation of reinforced concrete manholes, located on each side of the rail alignment. The RCP and

manholes will meet or exceed the American Railway Engineering Association's ("AREA") Standard Specifications for installation of utilities underneath railway embankments.

- In those locations where the supply lines will be relocated to cross the rail alignment perpendicularly, new pipe and connectors will be installed that meet or exceed the diameter and pressure requirements of the existing water supply pipeline.
- The final design plans for the relocation of sections of the water supply pipelines and the installation of the concrete pipe and manhole components will be prepared by the Tongue River Railroad during final engineering and design and submitted to the Montana Fish, Wildlife & Parks for approval prior to the start of construction. All features associated with the water supply pipeline relocation/reconstruction, RCP casing, and manholes will be designed to meet or exceed "AREA" and/or "Montana Public Works Standard Specifications."

May 7, 2004

Doug Day
Tongue River Railroad Company
P.O. Box 1181
Billings, MT 59103-1181

RE: MILES CITY FISH HATCHERY SUPPLEMENTAL GEOTECHNICAL AND VIBRATION ANALYSIS

Dear Doug:

The attached report presents results of supplemental geotechnical and vibration analyses associated with the Miles City Fish Hatchery (MCFH). These analyses are a follow up to our report dated March 15, 1999, and include two elements: review of vibration recordings at MCFH in 1998 in light of vibration recordings associated with trains at other sites reported in 1999 and 2000; and supplemental slope stability analyses.

Womack & Associates, Inc.

Ray Womack, P.E.
Enc: Letter report, Figures 1 and 2, Stability analyses

Introduction

In 1999, Womack & Associates conducted studies and prepared a report for the TRRC, i.e., "Miles City Fish Hatchery Investigation to Assess Potential Effects of the Tongue River Railroad". The scope of the 1999 study included: 1) a geotechnical analysis of the rock and soil types within and adjacent to the fish hatchery; 2) measurement and analysis of vibration from existing unit train and interstate traffic adjacent to the fish hatchery; 3) evaluation of potential effects on the hatchery and fish reproduction from the construction and operation of the TRR; and, 4) soil chemistry analysis to evaluate corrosive effects on buried fish hatchery piping. Another concern addressed in the 1999 report is the effect of coal dust and herbicides on the fish hatchery.

The purpose of this supplemental report is to respond to comments made by the Montana DNRC to the 1999 report related to vibration analysis, geotechnical investigations, and slope stability. In addition, the findings of vibration analyses conducted for the proposed DM&E rail line in Minnesota, South Dakota, and Wyoming which substantiate the findings in Womack & Associates 1999 report are incorporated herein.

Vibration Investigation

The purpose of the vibration study performed in 1998 as part of the Miles City Fish Hatchery Investigation (Womack & Associates, 1999) was to measure train vibration levels from the existing BNSF rail line and to evaluate potential future vibration levels from the proposed rail line. Soil attenuation characteristics were used in conjunction with measured peak particle velocities from existing unit train traffic to model expected peak particle velocities from construction and operation of the TRR at critical sites around the fish hatchery. The peak particle velocities predicted from the proposed TRR alignment are equal to or less than those currently experienced at the hatchery from the existing unit train traffic along the BNSF line. Therefore, it is reasonable to assume that since the fish hatchery produces fish under existing conditions (i.e., very low levels of vibration from the existing rail line), operation of a new rail line constructed at an equal or greater distance away from the hatchery than the existing rail line will have no detrimental effects on the fish hatchery.

The vibration monitoring conducted at the MCFH in 1998 used two instruments; an SSU 3000 L/C Seismograph and an SSU 2000 D Seismograph with detection limits of 0.01 and 0.02 inches per second (peak particle velocity), respectively. These instruments were deemed adequate to measure the vibration levels from the existing BNSF rail line and to develop attenuation relationships that are sufficient to evaluate vibration levels within the fish hatchery and predict future vibration levels from operation of the TRR.

In addition to the data obtained from the Miles City Fish Hatchery Investigation (Womack & Associates, Inc., 1999), the EIS document prepared by the Surface Transportation Board for the DM&E proposed railroad extension provides additional information and data. In

October 1999, David Braslau Associates, Inc., with assistance from ESI Engineering, Inc. and Schoell & Madson, Inc., prepared a report for the City of Mankato that evaluated the potential noise and vibration impacts that could result from the DM&E's expanded rail activity through the City of Mankato. The City of Mankato submitted the Braslau report to the Surface Transportation Board and requested that the DM&E Draft EIS consider potential noise and vibration assessment issues raised in the Braslau report. Subsequently, the DM&E Draft EIS included a ground vibration assessment, i.e., Ground Vibration Impacts Associated with Unit Coal Trains on the DM&E Railroad (Wilson, Ihrig & Associates, Inc., 2000). Comparison of the vibration data collected for the MCFH study with data from other investigations validates the use of the SSU 2000/3000 Seismographs to measure ground vibration levels.

The attached Figure 1 summarizes vibration levels caused by trains measured at several locations around the country, including the MCFH. Vibration levels on Figure 1 are expressed as peak particle velocity, illustrating the attenuation relationship between ground vibration and distance from the source. As indicated on the graph, the vibration data from the MCFH study are consistent with data reported from other studies measuring train vibration and generally follow the FTA Baseline Attenuation Curve for trains traveling at 50 miles per hour. Note that few of the studies reported vibration levels with peak particle velocities below 0.01 inches per second.

Slope Stability and Geotechnical Investigation

The following discussion addresses comments provided by the State of Montana regarding geotechnical investigations and analyses performed in 1999 to evaluate the potential for slope instability of the Camelsback resulting from construction and operation of the Tongue River Railroad (TRR). The specific concerns raised by the State of Montana about the slope stability evaluation are summarized below:

- Location and depth of fill from construction of an I-94 rail line overpass and potential impact to pore pressures and water table fluctuations.
- Bedding plane orientations within the Camelsback.
- Lower soil strength parameters for weathered material on the flanks of the Camelsback.
- Basis for the assumed coal strength parameters used in the stability analyses.
- Justification for groundwater elevations used in the slope stability models.

Current plans for the TRR alignment and grade indicate that the rail line will pass under Interstate 94 on the east side of the Camelsback. There will be no railroad overpass and no fill placement along the east side of the Camelsback. The current rail alignment passes approximately 200 feet east of the east flank of the Camelsback, about 500 feet east of the ponds on the east edge of the fish hatchery. Railroad grades along this portion of the alignment will require about 5 to 10 feet of cut into the existing ground surface. No potential increases in pore water pressure or groundwater levels are anticipated from construction and operation of the TRR east of the Camelsback.

In October 1998, drill hole VC0-1 was cored into the Camelsback. Interbedded claystone, siltstone, sandstone, and thin coal beds were recovered in the core samples. Horizontal bedding plane orientations were observed and recorded in the cores. Some secondary cross-bedding was noted in the sandstone that appeared to be inclined at about 20 degrees. Cross-beds are not continuous or critically weak and were not used in the models. A regional bedrock geology map compiled by Stagle and others (1983) shows structural contours (elevations) for the top of the Bearpaw Shale in the Tongue River Drainage basin. The structural contours indicate the top of Bearpaw Shale is essentially flat-lying in the vicinity of Miles City. The Bearpaw shale is a Cretaceous aged formation that underlies the Tertiary aged Fort Union formation (Tullock shale).

It is reasonable to assume that if the bedding orientation of the underlying Bearpaw Shale is near horizontal, then the bedding orientation of the overlying Fort Union formation is essentially horizontal.

In response to comments from the State of Montana, the slope stability analyses were revisited. In our opinion, the original analyses represent a reasonable and conservative approach based on observation, testing and literature review. However, supplemental analyses were prepared using the following highly conservative assumptions:

- Dipping bedding planes
- Thick weathered zone
- Much lower coal strength
- Higher piezometric surface

Although published geologic maps and observations of core samples indicate that bedding plane orientations are horizontal in the Camelsback, the slope stability models presented below assume a conservative 5-degree westward tilt to the beds (i.e., inclined toward the fish hatchery). Figure 2 represents the stability cross-section with a 5-degree dip imposed.

The core samples from drill hole VCO-1 in the central-portion of the Camelsback indicate that the bedrock is relatively fresh and unweathered. The slope stability analyses presented below conservatively assume that a 15-foot thick zone of lower strength weathered material occurs on the Camelsback. Soil strength parameters, rather than bedrock strengths, are assigned to the potential weathered zone. For stability modeling, we have assumed that the claystone bedrock has weathered to medium stiff, high plastic clay, a CH soil in the Unified Soil Classification System. Soil strength parameters for the undrained and drained conditions were estimated from published values and are referenced below.

Coal strength values used in the original slope stability analyses performed in 1999 were derived from the unconfined compressive strength and shear strength tests performed on core samples recovered from drill hole VCO-1. Although individual coal seams were too thin to test, weak high-plastic claystone intervals adjacent to the coal seams were tested for unconfined compressive strength. The assumed coal strength values used in the 1999

analyses are lower than the lowest claystone strengths. Published values for coal strength were reviewed to verify that the strength values used in the original analyses are consistent with measured coal strength parameters.

The stability results tabulated below use the original value of 3,330 psf for the undrained coal strength and the low range of published values for cohesion and internal friction angle for the drained coal strength.

Groundwater was not encountered in drill hole VCO-1 drilled to a depth of 59 feet, or an elevation of about 2,375 feet. Groundwater was encountered in three auger holes drilled in the alluvium on the east, west, and north sides of the Camelsback. Groundwater levels measured at the time of drilling varied from about 10 to 15 feet below the existing ground surface, corresponding to groundwater elevations of about 2,370 to 2,375 feet. The original slope stability analyses performed in 1999 used a phreatic surface in the alluvium and bedrock at an elevation of 2,375 feet. The revisited slope stability models presented below are modeled with a phreatic surface at an elevation of 2,380 feet.

In response to the comments submitted by the State of Montana in May 1999, the slope stability models for the Camelsback were re-run using the conservative assumptions noted above. Figure 2 represents geologic cross section used as the basis for the conservative slope stability models. The line of section is approximately 600 feet long and runs roughly in an east-west direction across the Camelsback. The cross section was developed using a 2-foot contour interval Digital Terrain Model (DTM) base map provided by Tongue River Railroad. The Camelsback is approximately 120 feet high with side slopes that vary from 3:1 to 1:1. Additional descriptions of the field investigation, site conditions, laboratory testing, and geotechnical engineering analyses are provided in the Miles City State Fish Hatchery Investigation to Assess Potential Effects of the Construction and Operation of the Tongue River Railroad (Womack & Associates, Inc, 1999).

Stability of the Camelsback was evaluated for varied slope conditions, assuming potential slope failures on the west side of Camelsback; i.e., toward the fish hatchery. Analyses were performed using two sets of soil and bedrock strength parameters under both static and pseudo-static (induced ground acceleration) forces and using circular and block failure modes. Short-term (Su) or End-of-Construction cases were evaluated using undrained shear strength values obtained from Unconfined Compression Tests. This is a conservative approach that assumes construction might create a short-term load, and that the soil pore pressures may increase if the soils cannot drain quickly enough to maintain equilibrium, possibly leading to development of undrained loading conditions. This type of analysis is very conservative because no construction (cut or fill) is planned on or near the flanks of the Camelsback, so loading and soil pore pressures are highly unlikely to change. The second case evaluated was a Long-Term or Consolidated-Drained case using drained shear strength values from the Direct Shear Tests. Stability of the existing slope conditions is evaluated in this case assuming no change in soil surcharge and that pore pressures will maintain equilibrium. Soil and bedrock strength parameters used in the analyses are summarized on Figure 2 and in the following tables:

Table 1 – Soil Parameter Summary

Short Term Conditions (Su)

SS Model Soil Number	Soil Type	Moist Weight (pcf)	Saturated Weight (pcf)	Cohesion Intercept (psf)	Friction Angle (degrees)
S1	Alluvium*	110	115	300	0
S2	Claystone	83.7	109.6	3900	0
S3	Sandstone	103.9	117.7	3300	0
S4	Coal*	80	90	3300	0
S5	Shale	114.8	132.3	9000	0
S6	Weathered Zone*	110	115	2000	0

Long Term Conditions (CD)

SS Model Soil Number	Soil Type	Moist Weight (pcf)	Saturated Weight (pcf)	Cohesion Intercept (psf)	Friction Angle (degrees)
S1	Alluvium*	110	115	100	30
S2	Clay/Siltstone	83.7	109.6	1924	35
S3	Sandstone	103.9	117.7	1000	35
S4	Coal*	80	90	500	15
S5	Shale	114.8	132.3	600	38
S6	Weathered Zone*	110	115	280	15

*Strength parameters estimated from laboratory data and published values.

Static and pseudo-static analyses were performed using the above soil strength parameters. Vibration monitoring conducted during the 1998 field investigation measured peak particle velocities as well as peak ground accelerations from the existing BNSF rail line. A maximum horizontal ground acceleration of 0.02g measured at a distance of 25 feet from the trains was applied to the slope to simulate forces that may potentially affect the Camelsback. This assumption is extremely conservative because the proposed tracks will be at least 400 feet from the west side (fish hatchery side) of the Camelsback and vibrations from the rail line will be insignificant. In fact, the effects of such vibrations are so small that it is not standard practice in the geotechnical engineering profession to consider vibrations generated by rail and highway traffic in slope stability assessments of this type.

Results from a slope stability analysis are expressed as a factor of safety (FOS) against slope failure. The FOS is a ratio of the forces resisting slope movement divided by the forces driving slope failure. When the resisting forces are larger than the driving forces the ratio is greater than 1 and indicates slope stability. When the driving forces are larger than the resisting forces the ratio is less than 1 and indicates potential slope instability. The higher the ratio, the more stable the slope.

The calculated factors of safety against a slope failure indicate that the Camelsback is stable under existing (static) conditions and assuming vibration accelerations in the slope (pseudo-static) far in excess of those expected to result from coal-train operations. The FOS are summarized in the table below. Individual slope stability models/cross sections and data files are attached. Under short-term (undrained) static conditions the calculated FOS are 1.70 and 1.77 for circular and block failures, respectively. The FOS are reduced to 1.64 and

1.71 with an applied horizontal acceleration of 0.02g. Under existing or long-term (drained) conditions the FOS are 1.39 and 1.81 for circular and block failures, respectively. With a horizontal acceleration of 0.02g applied the FOS decrease to 1.34 and 1.73. These factors of safety values indicate stable slope conditions. As shown in Table 2, the reduction in the factor of safety attributable to an acceleration of 0.02g is on the order of 3 to 4 percent. Actual reduction in factor of safety due to railroad operations is insignificant.

Table 2 – Calculated Factors of Safety

Case Evaluated	Failure Type	Static FOS	Pseudo-Static FOS
Short-Term (Su)	Circular (Bishop)	1.70	1.64
	Block (Rankine)	1.77	1.71
Long-Term (CD)	Circular (Bishop)	1.39	1.34
	Block (Rankine)	1.81	1.73

Over a prolonged period of time the slopes will likely continue to weather, and through natural slope processes, it is possible that localized shallow slumps, erosion, or raveling of weathered material may occur. However, given that it is unlikely that soil loading will change or that pore water pressures will increase within the Camelsback, the probability is extremely small that deep-seated rotational or translational slope failures will occur. In addition, the measured ground accelerations from passing trains are extremely small (0.01 to 0.02g, at or near minimum detection levels) within 25 feet of the rail line, and the proposed rail line will be about 400 feet or more from the west side of the Camelsback. Any ground acceleration produced by the trains will attenuate over this distance resulting in no significant influence on slope stability.

The stability of the embankments around fish hatchery ponds was not evaluated for this investigation because construction of the TRR will not alter the configuration of the embankments, increase the pore-water pressures, nor influence the groundwater levels. Branum Lake was constructed approximately 300 feet from the pre-existing BNSF rail line and the raceways along the north side of the fish hatchery were constructed within about 700 to 800 feet of the pre-existing rail line. Based on the attenuation curve presented in Figure 1, peak particle velocity vibration levels experienced at Branum Lake and the north edge of the raceways is on the order of about 0.01 and 0.002 inches per second, respectively. This is considerably lower than the published vibration thresholds for damage to buildings of about 0.5 to 2.0 inches per second (ESI Engineering, Inc., 1999). The proposed TRR alignment is about 400 to 500 feet east of the ponds on the east side of the hatchery and about 1,000 feet or more away from the eastern most raceways, corresponding to attenuated peak particle velocity vibration levels of less than 0.01 inches per second. Therefore, the predicted ground vibration levels at the Miles City Fish Hatchery from construction and operation of the TRR are extremely low and potential damage to the ponds and raceway from train vibration is not indicated by the models conducted for the TRR and analysis conducted for other rail projects, including the DM&E.

References

ESI, Engineering, Inc., 1999, City of Mankato – DM&E Vibration Assessment; Vibration Impact Expected Through Mankato, Minnesota, ESI Project 1105.

Hoek, E, 2000, Practical Rock Engineering, Chapter 4 – Shear Strength of Discontinuities, Web Publication-www.rocscience.com/hoek/practicalrockengineering.asp

Huang, Y. H., 1983, Stability Analysis of Earth Slopes, Van Nostrand Reinhold Company, New York.

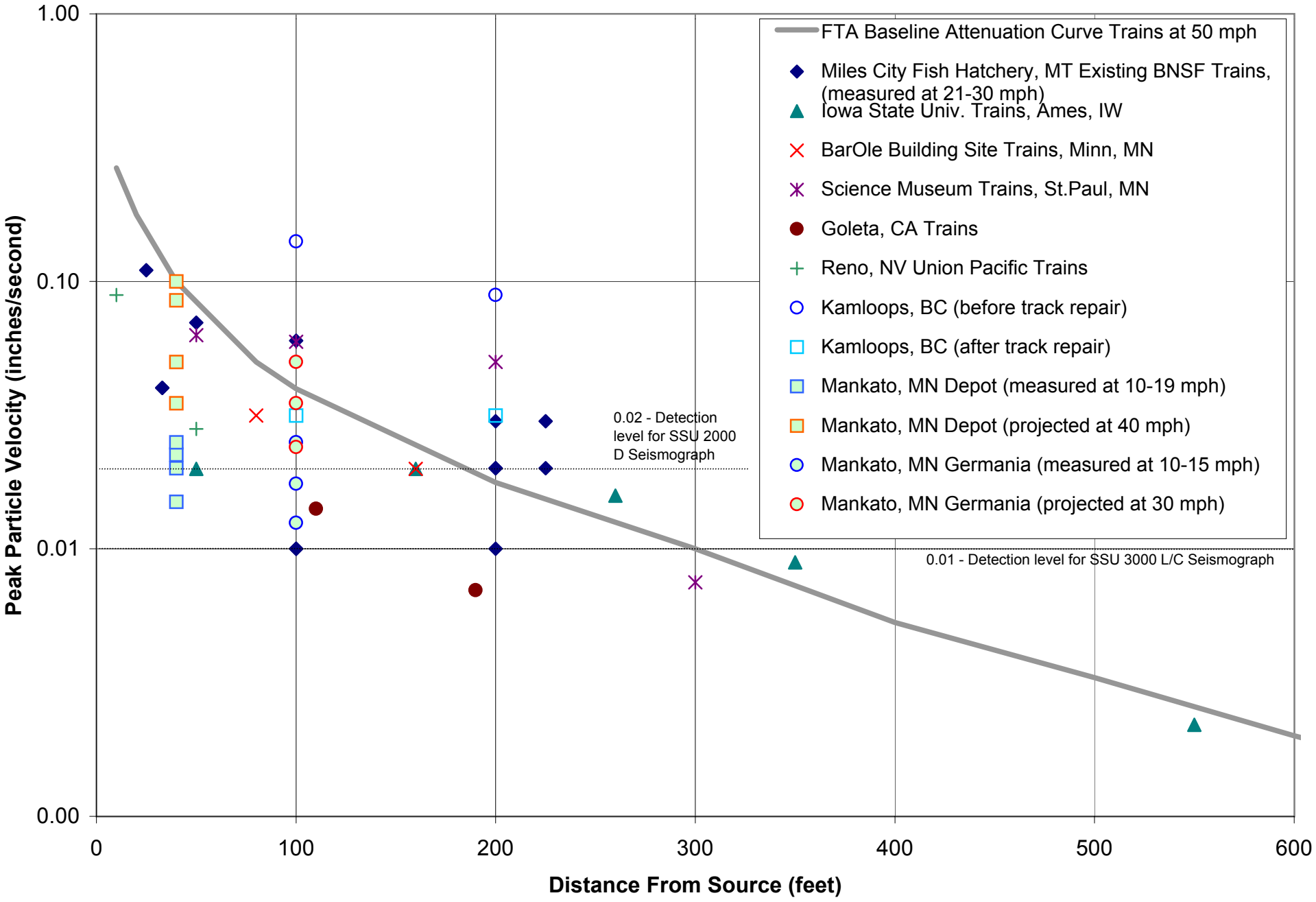
Pit Slope Manuel, 1977, Chapter 9 – Waste Embankments; Canada Centre for Mineral and Energy Technology, Minerals Research and Mining Research Laboratories, CANMET Report 77-01.

Shen, B and Duncan-Fama, M.E., 1996, Span Stability Prediction for Highwall Mining – Analytical and Numerical Studies; CSIRO Exploration and Mining Report 316F.

Stagle E. and others, 1983, Hydrology of Area 49, Northern Great Plains and Rocky Mountain Coal Provinces, Montana and Wyoming; U. S. Geologic Survey Water-Resources Investigations Open-File Report 82-682, Figure 3.2-1, pg 11.

Wilson, Ihrig & Associates Inc., 2000, Ground Vibration Impacts Associated With Unit Coal Trains on the DM&E Railroad, Appendix F – Noise and Vibration.

FIGURE 1: Miles City Fish Hatchery Train Vibration Investigation
Peak Particle Velocity versus Distance From Vibration Source
(Comparison of Measured Train Vibration at MCFH and Published Train Vibration Values)

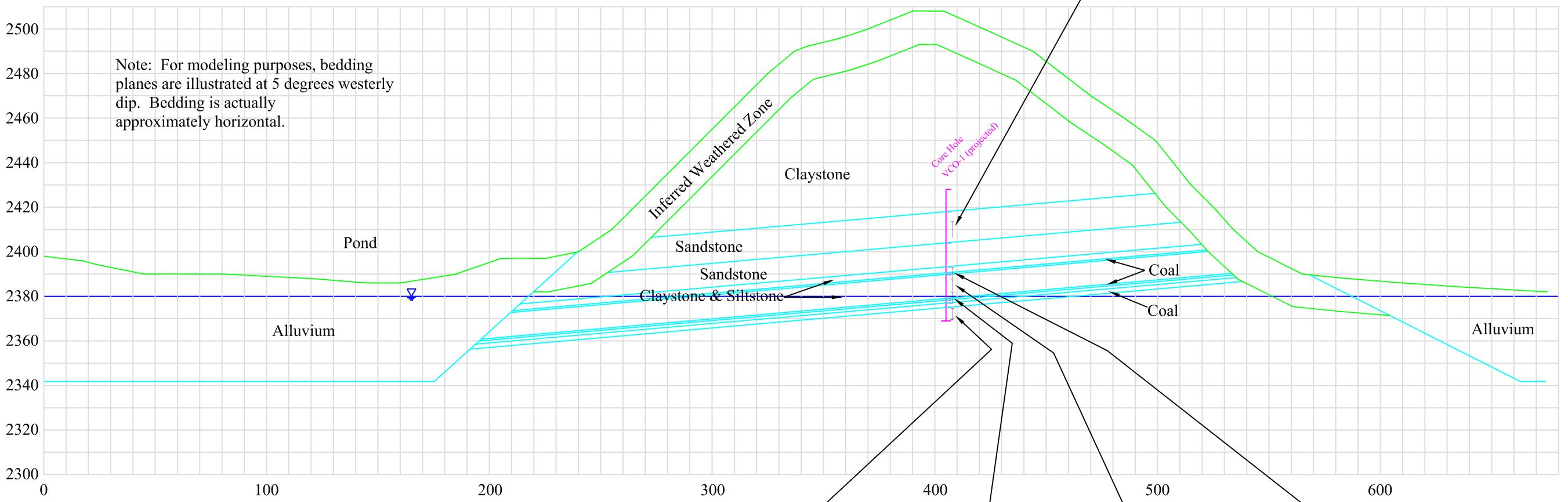


Cross Section B-B'

SCALE: 1" = 50'

B (West)

B' (East)



Water levels measured in 3 boreholes at the time of drilling (atd) around perimeter of Camelsback:

B-1034 = gw depth 14', elevation 2370'
VAH-1 = gw depth 15', elevation 2375'
VAH-2 = gw depth 10', elevation 2370'
VCO-1 = no groundwater encountered
**Stability models assume groundwater at 2380'

Sample VCO-1 55'-59'
Unconfined 18,106 psf
Undrained shear strength 9,053 psf
Direct Shear c = 608 psf
ϕ = 38.3 °

Sample VCO-1 45'-50'
Unconfined 26,776 psf
Undrained shear strength 13,387 psf
Direct Shear c = 26.7 psf
ϕ = 54.3 °

Sample VCO-1 40'-45'
Unconfined strength 30,842 psf
Undrained shear strength 15,421 psf

Sample VCO-1 35'-40'
Unconfined strength 7878 psf
Undrained shear strength 3939 psf
Direct Shear c = 1924 psf
ϕ = 35.7 °

Published Strength Values for Coal:
Unconfined strength 33,000 psf (weak coal mass; Shen and Duncan Fama, 1996)
Undrained shear strength 16,500 psf
Direct Shear c = 280 to 660 psf (Hoek, 2000)
ϕ = 15° to 17.5° (Hoek, 2000)
**Stability models assume undrained strength of 3,300 psf; c = 280 psf and phi = 15 degrees

Published Strength Values for Medium Stiff Clay (i.e., weathered claystone):
Unconfined strength 4,000 to 8,000 psf (Huang, 1983)
Undrained shear strength 2,000 to 4,000 psf (1/2 of the unconfined strength; Huang, 1983)
Cohesion: c = 500 to 1,000 psf (Huang, 1983; Pit Slope Manuel, 1977)
ϕ = 15° to 30° (Huang, 1983; Pit Slope Manuel, 1977))
**Stability models assume undrained strength of 2,000 psf; c = 500 psf and phi = 15 degrees

Miles City Fish Hatchery Camelsback Slope Stability Evaluation Tongue River Railroad Company	CAMELSBACK STABILITY ANALYSIS CROSS SECTION	FIGURE 2

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WOMACK AND ASSOCIATES, INC.

APPENDIX A:

SLOPE STABILITY ANALYSES CAMELSBACK RIDGE AT MCFH

WOMACK & ASSOCIATES, INC.
May 7, 2004

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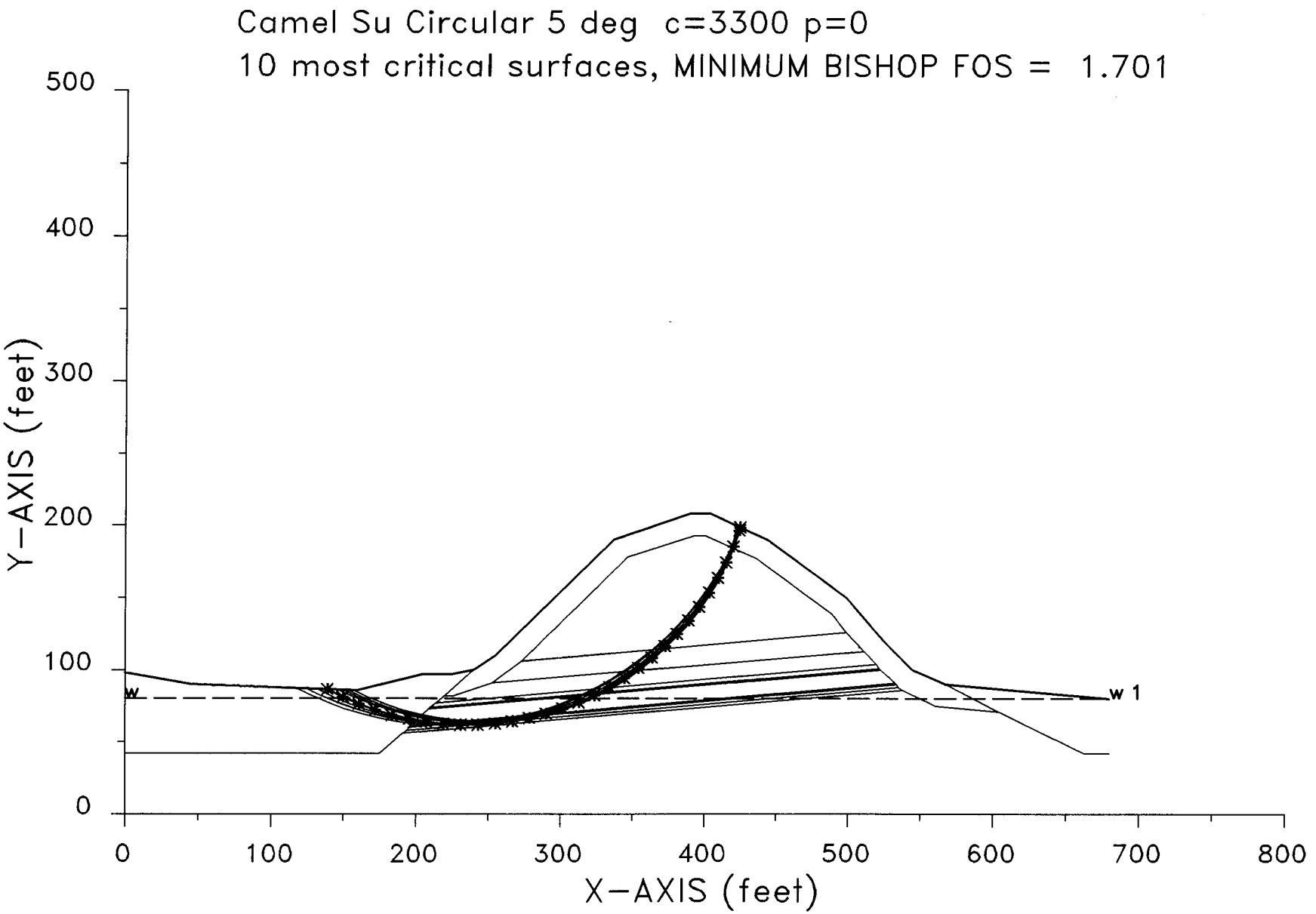

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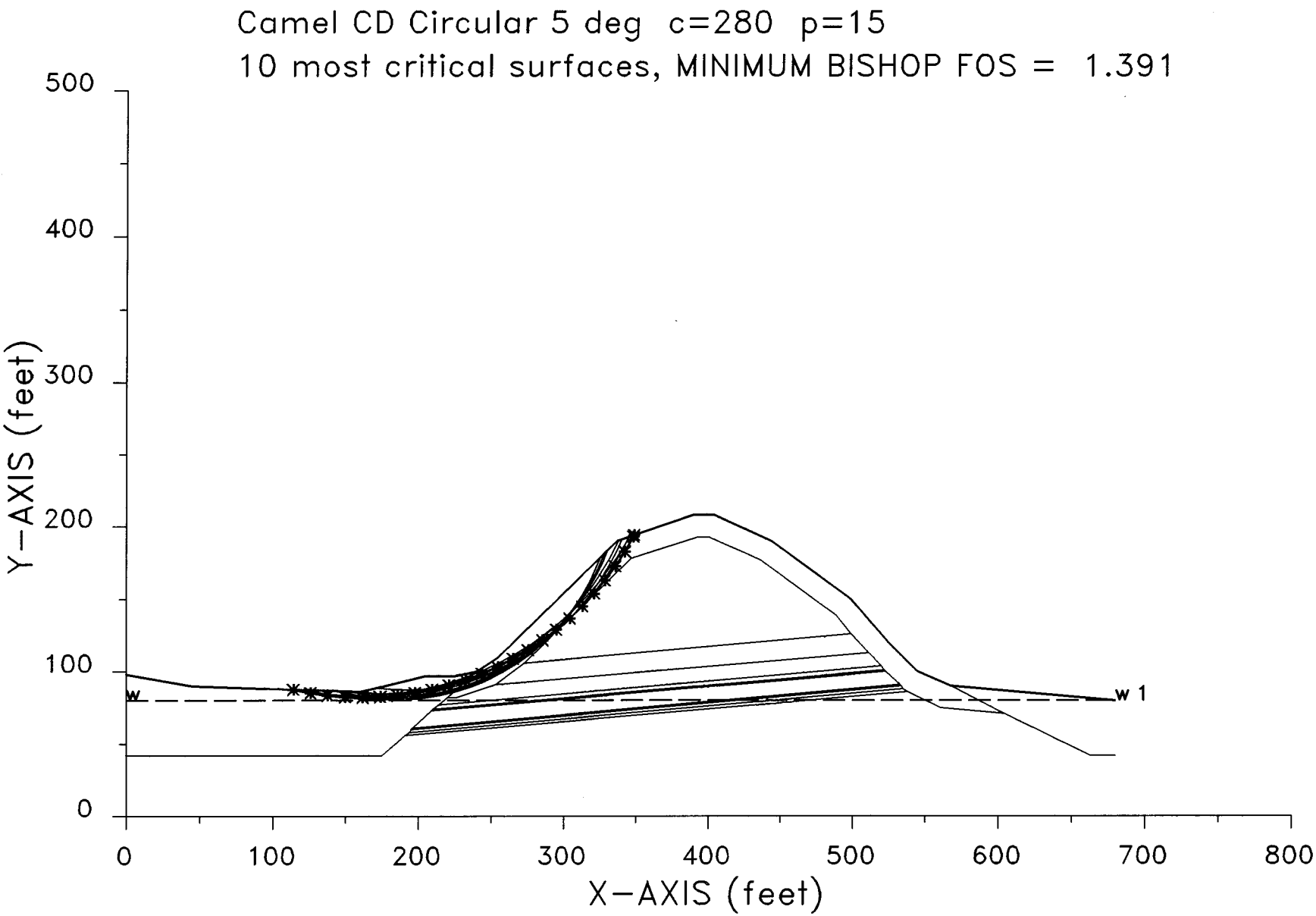

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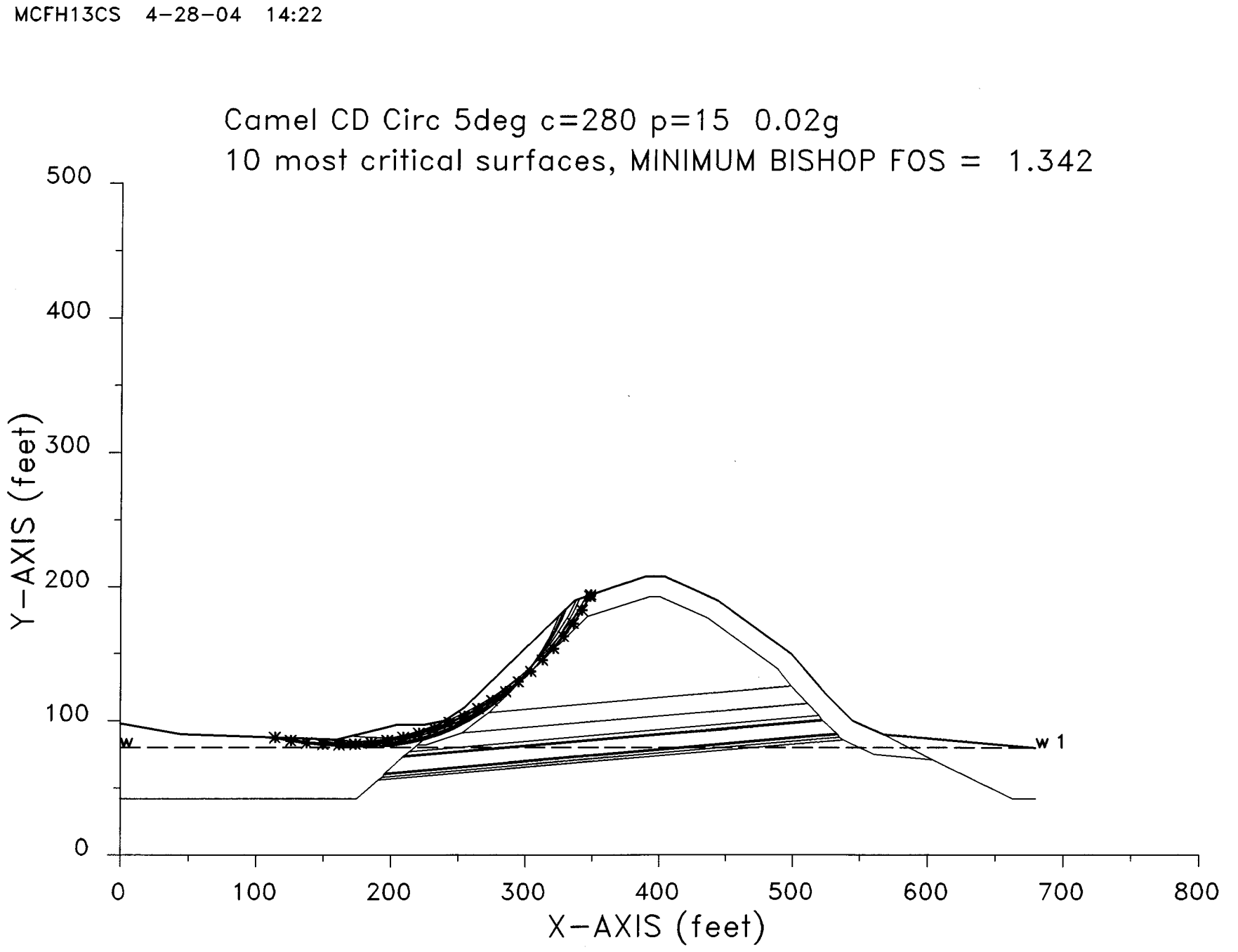

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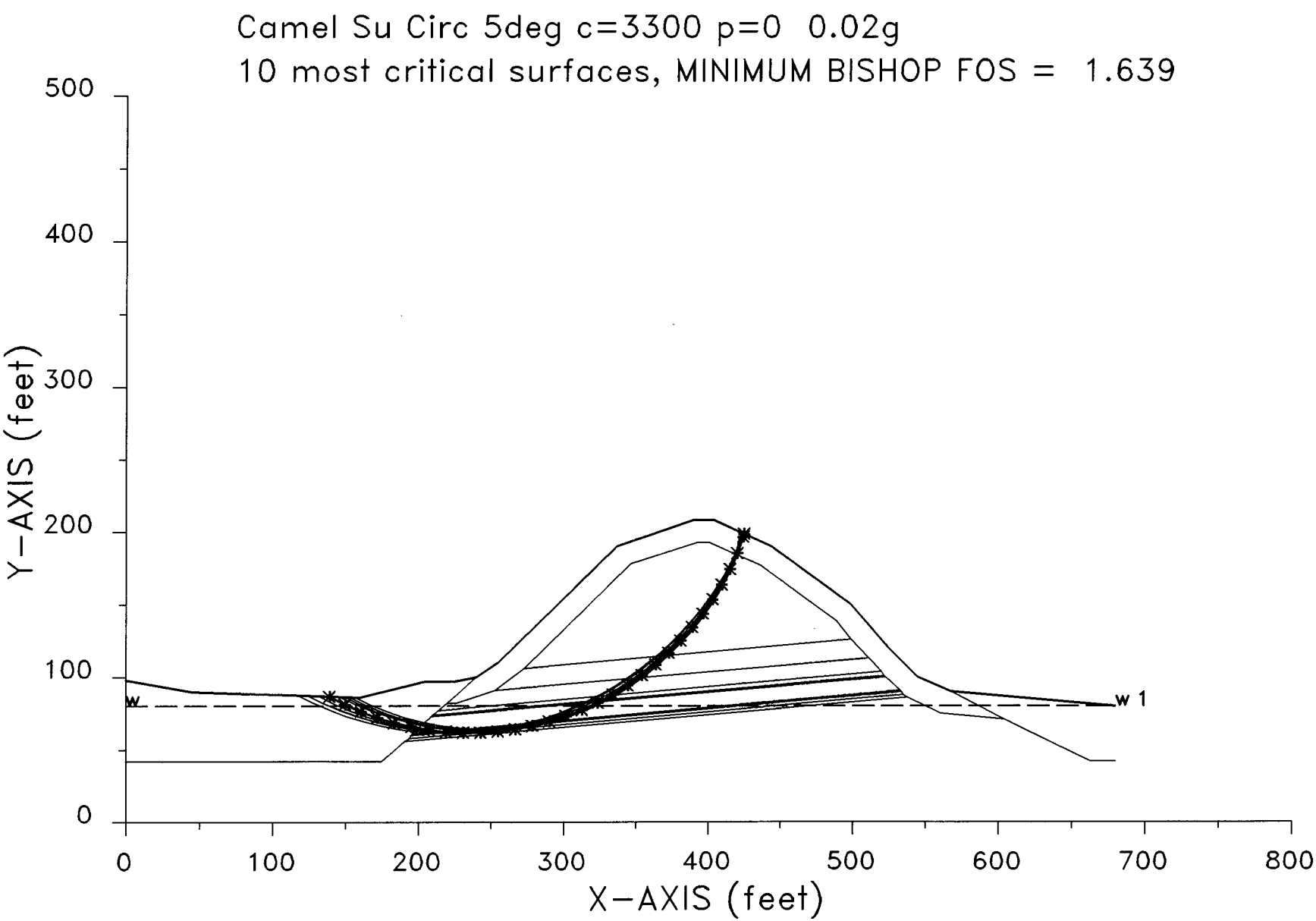

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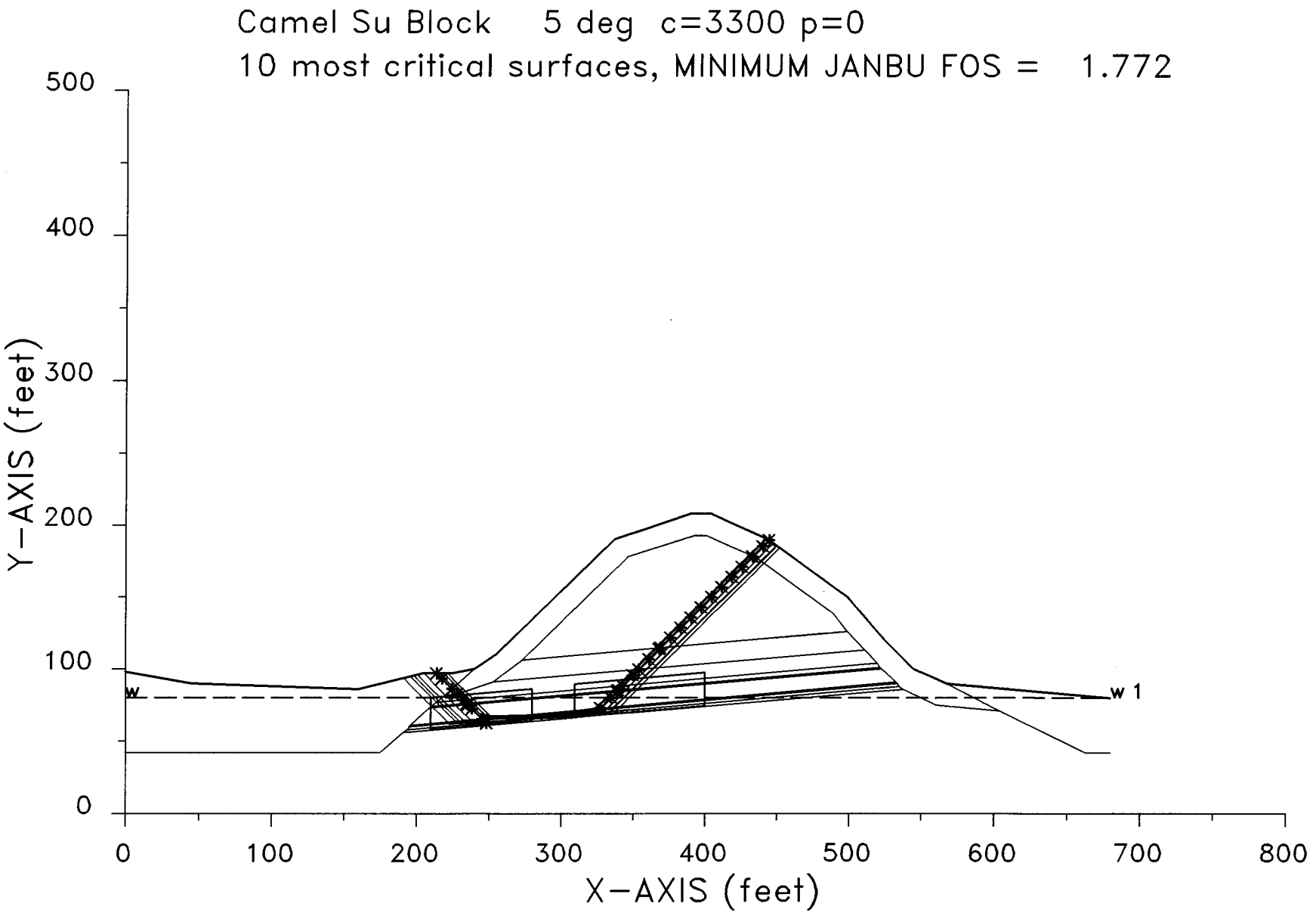

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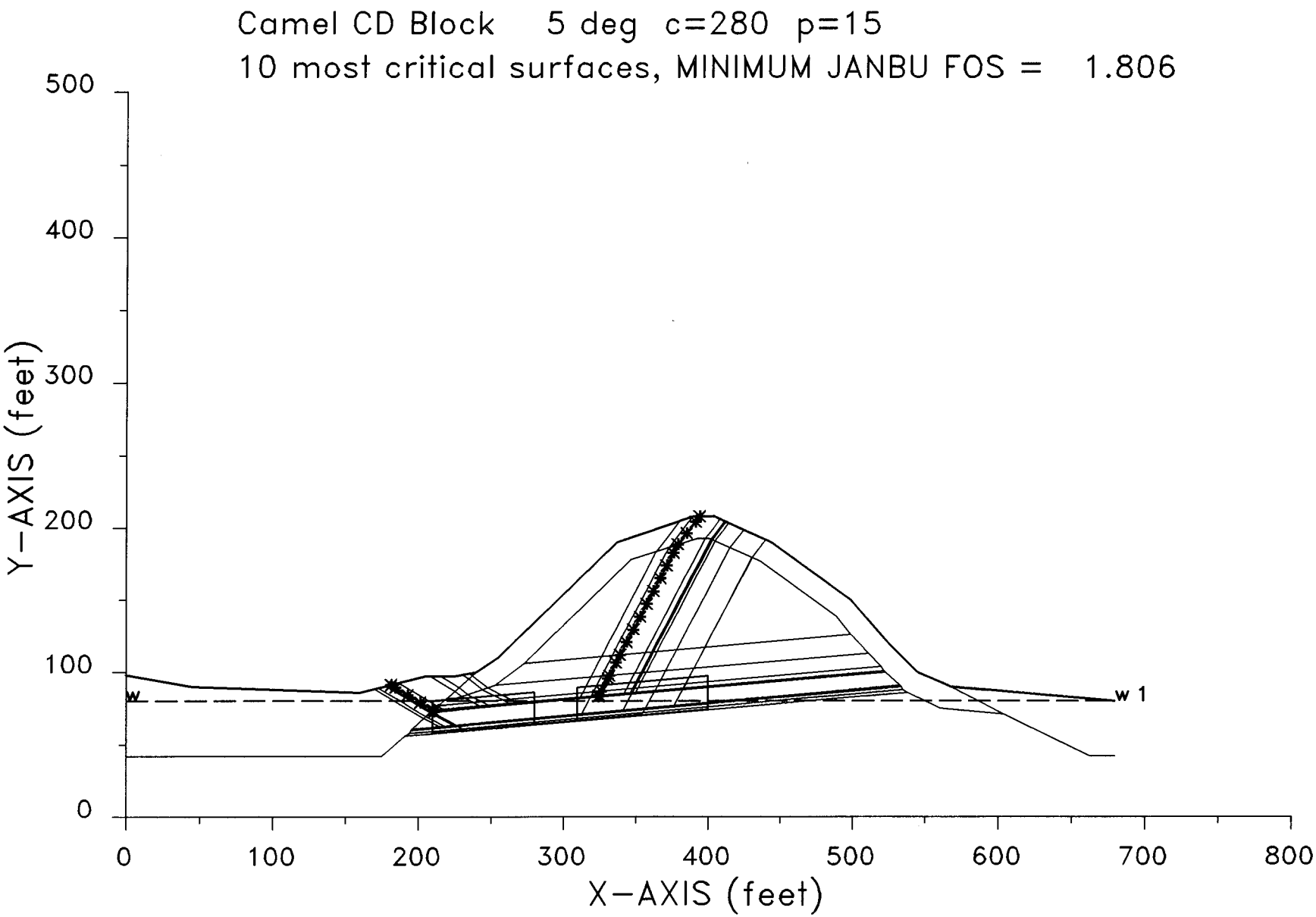

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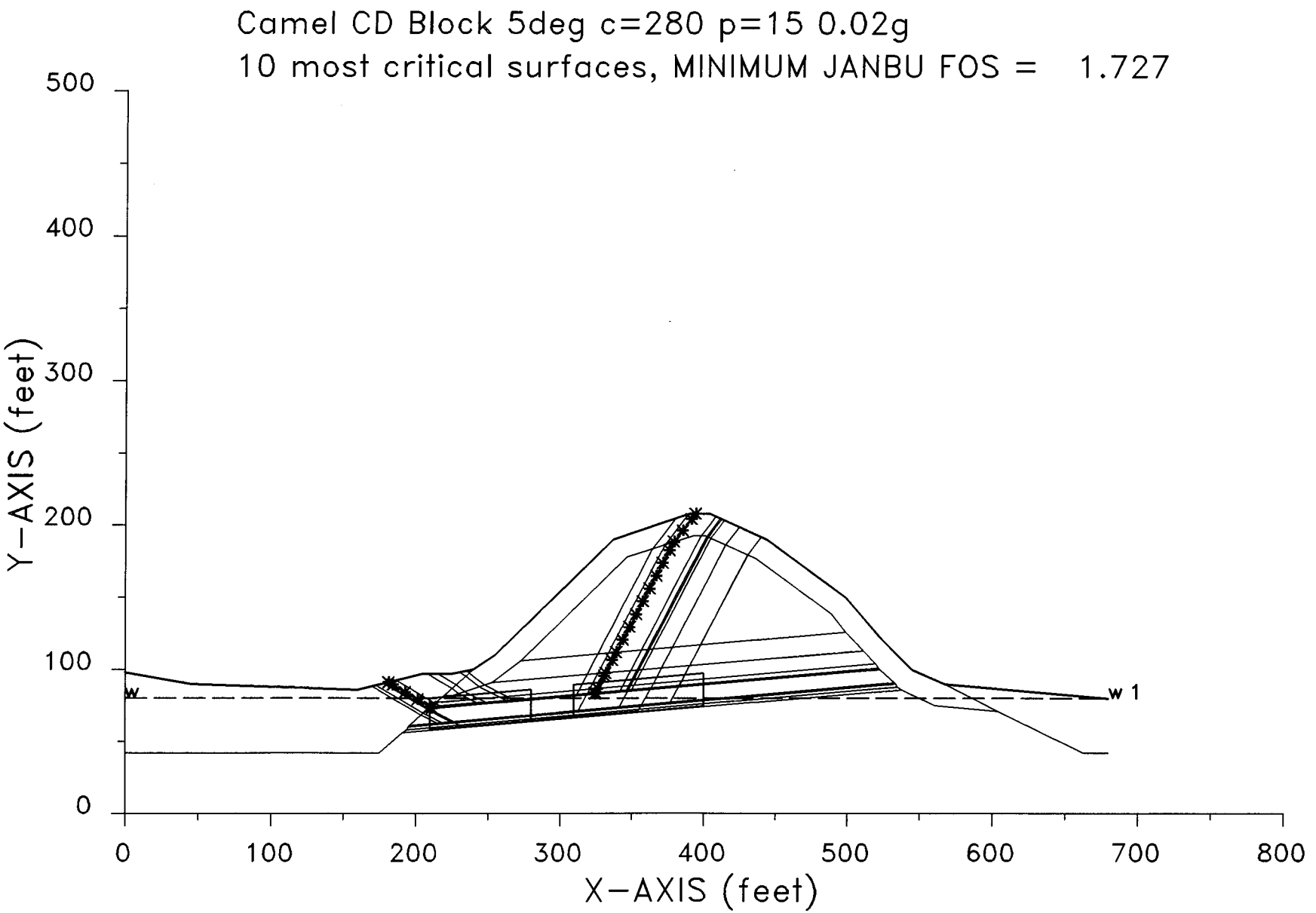

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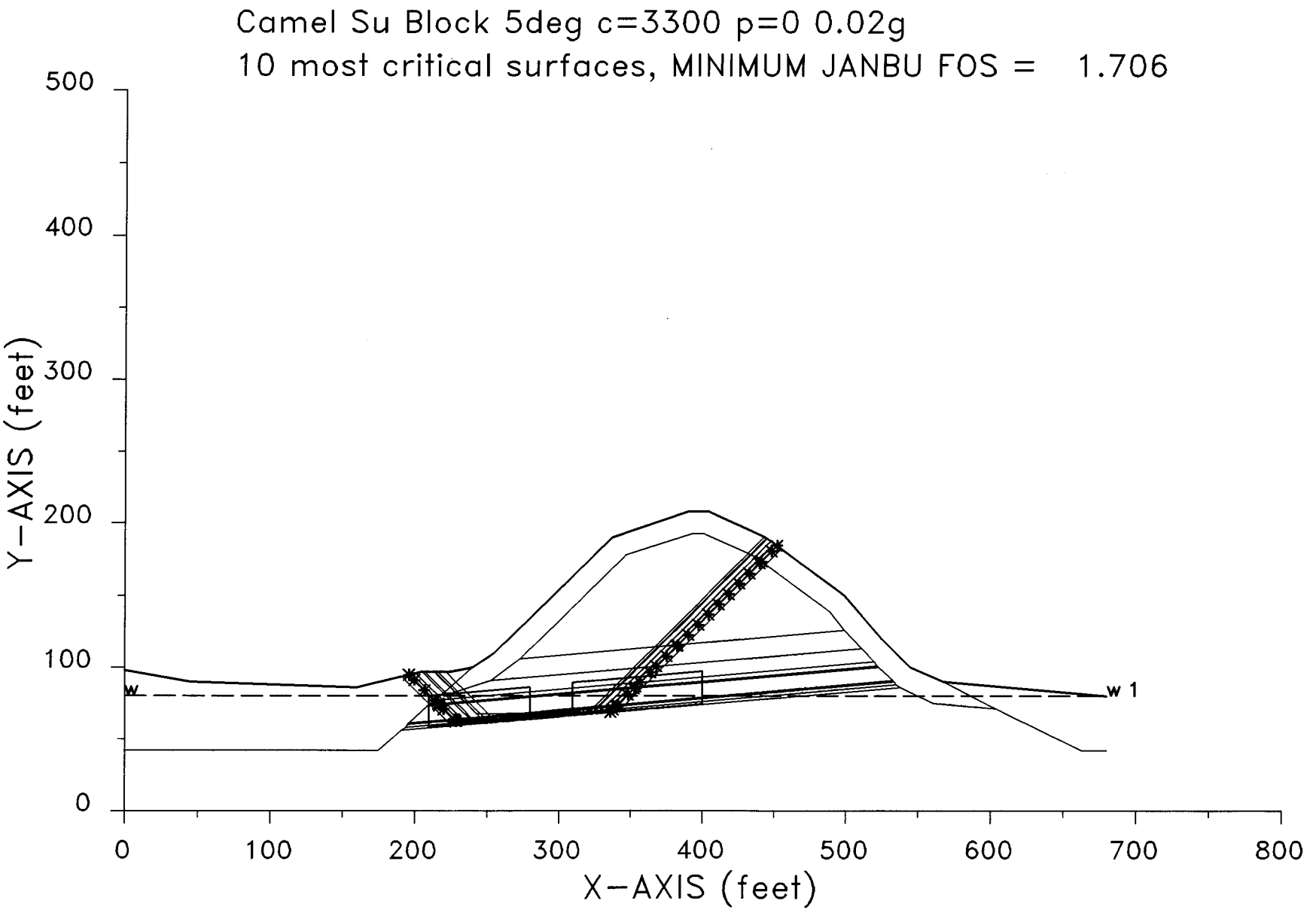

Appendix G

Programmatic Agreement

PROGRAMMATIC AGREEMENT AMONG THE SURFACE TRANSPORTATION BOARD, THE MONTANA STATE HISTORIC PRESERVATION OFFICER, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, U.S. ARMY CORPS OF ENGINEERS, THE U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT, THE U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE, THE MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, AND THE TONGUE RIVER RAILROAD COMPANY, INC. REGARDING CONSTRUCTION AND OPERATION BY THE TONGUE RIVER RAILROAD COMPANY, OF A RAIL LINE FROM MILES CITY TO DECKER IN CUSTER, ROSEBUD, POWDER RIVER AND BIGHORN COUNTIES, MONTANA

WHEREAS, the Surface Transportation Board (Board)[1], the lead Federal agency, has determined that construction and operation of a rail line by the Tongue River Railroad Company from Miles City to Decker in Custer, Rosebud, Powder River and Bighorn Counties, Montana may have an effect upon historic properties included on or eligible for inclusion on the National Register of Historic Places, and has consulted with the Montana State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (Council), the U.S. Army Corps of Engineers (COE), the U.S. Department of the Interior Bureau of Land Management (BLM), the U.S. Department of Agriculture Agricultural Research Service (ARS), the Montana Department of Natural Resources and Conservation (MT DNRC), and the Tongue River Railroad Company (TRRC, INC.) pursuant to Section 800.14 of the regulation (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act, 16. U.S.C. 470f (the Act); and,

WHEREAS, the Northern Cheyenne and Crow Tribal Councils, and the Northern Plains Resource Council have been invited to participate in development of, and concur in, this Agreement; and,

WHEREAS, the Board has contacted the Arapaho Business Council, Oglala Sioux Tribal Council, Shoshone Business Council and Standing Rock Sioux Tribal Council and invited them to concur in this Agreement and each Tribe has either not responded to Board's invitation or decided not to participate in the development of, or concur in, this Agreement; and,

WHEREAS, this Agreement embraces and replaces all earlier proposed agreements in this rail line construction and operation proceeding; and,

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[1] The Surface Transportation Board (Board) was created with the passage of the Interstate Commerce Commission Termination Act of 1995 (Pub. L. No. 104-88). The Board, an independent body within the U.S. Department of Transportation, is responsible for administering rail, pipeline, and certain adjudicatory functions involving motor and water carriers. These responsibilities are similar to those duties formerly administered by the Interstate Commerce Commission. The Board is the lead agency under NEPA for the Tongue River Railroad project.

WHERAS, the definitions of 36 CFR 800, and those attached in Appendix 1 are applicable through this Programmatic Agreement; and

WHEREAS, the consulting parties to this agreement have considered the applicable requirements of the Act, the American Indian Religious Freedom Act, 42 U.S.C. 1996 et. seq. (AIRFA), the Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001 et. seq. (NAGPRA), Executive Order 13007 – Indian Sacred Sites, and the Archaeological Resources Protection Act of 1979 (ARPA) in the course of consultation; and,

WHEREAS, a Class I Inventory[2] has been conducted for a 1500 foot area on either side of the proposed centerline and the reports on the results of the Class I Inventory have been provided to the Board through submission of various documents by TRRC, Inc.: and,

WHEREAS, the Board provided the relevant Class I Inventory documents to the signatory and concurring parties on June 11, 1999.

NOW, THEREFORE, the Board, SHPO, the Council, BLM, COE, ARS, MT DNRC, TRRC, INC.,, Northern Cheyenne and Crow tribes agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

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2 The Class I inventory has been published by the Board in the following documents: The draft and final Environmental Impact Statements (EIS) for Tongue River I, (Tongue River Railroad Company Rail Construction and Operation In Custer, Powder River and Rosebud Counties, Montana, Finance Docket No. 30186 (Miles City to Ashland) (not printed) (served Sept.4, 1985), modified, (not printed) (served May 9, 1986)), the draft EIS for Tongue River II (Tongue River Railroad Company Rail Construction and Operation Of An Additional Line from Ashland to Decker, Montana, Finance Docket No. 30186 (Sub. No. 2) (not printed) (served Nov. 8, 1996)), the Environmental Report submitted with the application for the Western Alignment (Tongue River Railroad Company Rail Construction and Operation Western Alignment In Rosebud and Big Horn Counties, Montana, Finance Docket No. 30186 (Sub. No. 3)), Analysis of Potential Changed Circumstances Related to the Environment and Proposed Action Along Original 89 Miles of the Tongue River Railroad Approved in 1989: 1985 to 1998 and Analysis of Potential Changed Circumstances Related to the Environment and Proposed Action along the Northern 21 Miles of the Proposed Tongue River Railroad Extension: 1996 to 1998, Exhibits 2 and 1 respectively to the Reply of Tongue River Railroad Company to Comments on the Scope of the Supplement to the Final EIS, Finance Docket No. 30186 (Sub. No.3) (filed with the Board Sept. 8, 1998); and the draft Supplement to the Final EIS, (Tongue River Railroad Company Rail Construction and Operation Western Alignment In Rosebud and Big Horn Counties, Montana (Finance Docket No. 30186 (Sub. No. 3)).

STIPULATIONS

The Board shall ensure that the following measures are carried out:

I. Identification and Evaluation of Historic Properties (Inventory Report)

a. The Area of Potential Effect (APE) is the geographic area within which the construction and operation of the railroad may cause changes in the character or use of historic properties. The parameters in this Agreement for conducting surveys and inventories have been designed to assess the potential effects of the undertaking on historic properties within the APE. These surveys and inventories are: (1) a windshield survey from publicly accessible roads of a one-mile wide corridor centered on the proposed railroad route, the results of which will be incorporated in the Class III Inventory Report(s) as described in Stipulations I.b. and I.c.; (2) a Class I Inventory of an area 1500 feet on either side of the centerline to guide the windshield survey and Class III Inventory efforts, and (3) a Class III Inventory of the right of way (ROW) plus a 200 foot buffer area on either side of the ROW to the extent the 200-foot buffer can be accessed by TRRC, Inc. for survey purposes or the buffer area up to 200 feet to which TRRC, Inc. obtains access for survey purposes. Any properties within the survey area that extend outside of the survey area will be recorded and evaluated to the extent that TRRC, Inc. has access to the property.

b. Prior to construction TRRC, Inc. will retain a Cultural Resource Use Permittee who has or will obtain a BLM-approved permit (hereafter Permittee) and who meets the professional qualifications standards provided in the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, 48 FR 44716-44742 (Secretary's Standards) to perform the windshield survey and the Class III Inventory described in Stipulation I.a. The Class III Inventory will be completed in conformance with the Secretary's Standards for identification (48 FR 44720-44723). Permittee will comply with the conditions of the Cultural Resource Use Permit.

c. The Class III Inventory will be performed for the entire alignment; however, the Class III Inventory may be performed in segments, such that once TRRC, Inc. has access to a segment of the alignment TRRC, Inc. may direct Permittee to perform a Class III Inventory for that segment and prepare the Class III Inventory Report for that segment. TRRC, Inc. will provide the signatory and concurring parties to this Agreement with a map of the area to be inventoried prior to performing each Class III Inventory. Once the Class III Inventory Report, as defined in Stipulation I.e., below, has been finalized for that segment pursuant to the requirements of this Stipulation I, the requirements of the other Stipulations set forth below including Treatment Plan Preparation, Data Recovery, Data Recovery Reports and Construction may be implemented for that segment even if a Class III Inventory has not been undertaken for the remaining segment(s).

d. Representatives of the Northern Cheyenne and Crow Tribes (the Tribes) will be invited by the Board to participate in the inventories to help identify, document, and evaluate properties to which they attach traditional religious and cultural significance within the APE. Traditional cultural significance will include all aspects of significance as outlined in National Register Bulletin 38 (National Park Service 1990) and those identified by the Tribe or other groups. Each Tribe will

designate a representative(s), to accompany the cultural resource inventory crew. In addition, during the Class III Inventory, the Tribes representative(s) will be invited by the Board to work with Permittee to identify and compile a list of traditionally-important plants that occur in the APE as well as the gathering sites and access points for these plants. The Tribes may require the assistance of a Tribal cultural expert(s) to participate in the inventories and evaluations required under this PA. If so, the Tribes shall identify to the Board the Tribal cultural expert(s) that will be assisting the Tribes so that appropriate documents can be provided to the Tribal cultural expert(s). TRRC, Inc. shall provide reasonable financial reimbursement for professional services[3] provided by the designated Tribal cultural expert(s).

e. Prior to construction Permittee will prepare and submit to the Board a report (hereafter Class III Inventory Report(s)) which (1) documents the results of the Class III Inventory, (2) identifies historic properties, which may be eligible for or listed on the National Register of Historic Places (National Register) including historic and prehistoric sites, traditional cultural properties as defined in National Register Bulletin 38 and the Tribal cultural expert(s), historic structures, and cultural landscapes located during the Class III Inventory, (3) makes recommendations regarding eligibility for those historic properties, and (4) makes recommendations on findings of effects. Permittee also will incorporate the results of the windshield survey in the Class III Inventory Report(s).

3 Reasonable financial reimbursement shall include payment for professional services (based on an agreed upon hourly rate), travel and miscellaneous expenses incurred by the Tribal cultural expert(s) during participation in the inventories and evaluations required under this PA.

f. The Board shall review each Inventory Report(s)[4] including recommendations for National Register eligibility and findings of effect, and provide copies to the signatory and concurring parties to this Agreement for their review and comment within 15 calendar days of receipt from Permittee. The signatory and concurring parties will have 15 calendar days after receipt to notify the Board in writing if information is missing from the report and recommendations. The Board will then have five calendar days to supply the missing information or to determine that such information is not required. The Board shall require the return of comments within 45 calendar days of receipt of the additional information or the determination that additional information is not required. If no additional information is requested, the parties have 60 calendar days from the receipt of the initial report to submit comments. A copy of the comments sent to the Board should be sent simultaneously to the SHPO. In consultation with the SHPO and federally-designated tribes that attach traditional religious and cultural significance to identified historic properties [800.5(a)], the Board shall seek to reach concurrence on all site eligibility recommendations and findings of effect in the Inventory Report within 45 calendar days of receipt of comments. The Board will finalize determinations of eligibility in a manner consistent with 36 CFR 800.4(c) and pertinent guidelines of the National Park Service, Council, and SHPO. The Board, in consultation with SHPO, shall assess the effects of the undertaking on any properties determined eligible for listing in the National Register within 40 calendar days of receipt of comments. The Board, in consultation with the SHPO, shall direct Permittee to make any required revisions to the Inventory Report.

g. Within 15 calendar days of its receipt of the revised Inventory Report from Permittee, the Board may approve the revised Inventory Report, send a copy of the final Inventory Report to the signatory and concurring parties to this Agreement, or require additional changes as necessary to ensure acceptability of the report.

II. Consultation on Treatment (to prepare a Treatment Plan)

a. The Board, in consultation with the SHPO, shall consult with the signatory and concurring parties to this Agreement to develop measures that avoid minimize or mitigate adverse effects identified in Stipulation I.f in a Treatment Plan. The Board shall invite representative(s) of the Arapaho and Sioux, as well as any other Tribe that has expressed interest in participating in the inventory process, to meet with the Board, Permittee, and Tribal representative(s) who participated in the inventory to discuss the inventory results and define how properties of traditional religious or cultural value can most respectfully be managed as part of the Treatment Plan. The Board shall notify parties of the proposed treatment options within 45 calendar days of the date of final Inventory Report.

b. Nothing in this Agreement shall preclude any signatory or concurring party from consulting with any other signatory or concurring party, or with any other person or entity, during any period of consultation specified in this Agreement or at any other time. If a signatory or concurring party does not respond to a request for its views within a time frame specified for such consultation by this Agreement, that party's silence shall be interpreted to constitute concurrence with the views of the party that requested such consultation. Copies of all reports and notices distributed by the Board to

4 The Inventory Report (s) shall include the results of the Windshield Survey, Class I and Class III Inventories, as well as information regarding National Register eligibility and findings of effect.

signatory and concurring parties under the terms of this Agreement shall in all cases be transmitted by overnight courier, U.S. Express Mail or more expeditious means which provides for verification of delivery.

III. Treatment Plan (for Eligible Resources--Native American and Non-Native American)

a. The Board will ensure that TRRC, Inc. prepares and implements a Treatment Plan(s) that will address the adverse effects of the proposed undertaking on historic properties. More than one Treatment Plan may be prepared for the railroad. A Treatment Plan may be prepared for a segment of the line provided that the Inventory Report for that segment has been completed and approved in accordance with Stipulation I. The Treatment Plan shall be amended, if necessary, after the finalization of any supplemental Inventory Report(s) (hereafter "Treatment Plan Amendment"). The plan shall (1) identify all eligible historic properties in the APE or segment thereof, (2) identify the nature of the effects to which each property will be subjected, and (3) identify the treatment strategies proposed to avoid, minimize or mitigate the effects of the undertaking. To the extent practicable, the Treatment Plan(s) will incorporate measures identified by tribal representatives as necessary for mitigation of adverse effects to properties that are determined to be significant for their traditional cultural values and protection of and continuing access to the gathering sites and access points of traditionally-important plants. If appropriate, TRRC, Inc. may attempt to negotiate access to public or private lands that are not currently accessible.

b. Whenever possible, in-place preservation shall be the preferred alternative. In consultation with the signatory and concurring parties to this Agreement, TRRC, Inc. shall develop specific procedures to preserve historic properties in-place. These procedures may include avoidance by re-routing the railroad alignment around the resource where feasible, and/or monitoring of historic properties by historians, archaeologists and Native American representatives during construction.

c. Where avoidance is not feasible and data recovery is determined by the Board in consultation with the signatories and concurring parties to this Agreement to be the most prudent and feasible treatment option, the research design proposed in the Treatment Plan(s) shall specify, at a minimum:

1. the historic properties to be affected and the nature of those effects;

2. the research questions to be addressed through data recovery, with an explanation of their relevance and importance;

3. The data needed to address specific research questions, the likelihood that this data can be recovered and how the data will be analyzed;

4. the fieldwork and analytical strategies to be employed, with an explanation of their relevance to the research question;

5. proposed methods of dealing with individual discovery situations;

6. methods to be used in data management and dissemination of data, including a schedule;

7. how findings will be presented to support the research design;

8. the proposed repatriation of recovered materials and records including the disposition of Native American sacred items, human remains and funerary items;

9. proposed methods for disseminating results of the work to the public;

10. proposed methods by which Native American representatives will be kept informed of the work and afforded an opportunity to participate; and

11. a proposed schedule for the submission of progress reports to the Board.

12. Proposed approach for the disposition and curation of data and materials (other than Native American items, human remains and funerary items as discussed under item 8 above) upon completion of data collection.

d. The data recovery plan shall be incorporated as part of the Treatment Plan(s) and shall be consistent with the Secretary's Standards for Archaeological Documentation (48 FR 44734-37) and take into account the Council's publication, Treatment of Archaeological Properties: A Handbook (Advisory Council on Historic Preservation 1980), subject to any pertinent revisions the Council may make in the publication prior to completion of the data recovery plan, and SHPO guidance. Permittee shall obtain all necessary cultural resource permits for data recovery including an excavation permit from BLM for any data recovery on BLM land, appropriate ARS permits for any recovery on ARS lands and appropriate State permits for any recovery on State lands.

IV. Review of Treatment Plan

a. Within 15 calendar days of receipt from Permittee, the Board will submit the Treatment Plan(s) to the signatory and concurring parties to this Agreement for review. Within 15 calendar days of its receipt a signatory or concurring party must notify the Board in writing of any deficiencies in the Treatment Plan. The Board then has 10 calendar days to provide the additional information or to determine that such information is not required. The signatory or concurring parties then have 45 calendar days from the receipt of the complete information or the determination that additional information is not required to comment on the Treatment Plan. If no additional information is requested, the parties have 60 calendar days from receipt of the initial plan to submit comments. A copy of any comments sent to the Board shall be sent simultaneously to the SHPO. If any party fails to submit their comments within 45 calendar days of the receipt of the complete information or 60 calendar days of receipt of the initial plan if it is complete, the Board shall assume that party's concurrence with the Treatment Plan. Based on the comments received during this review, the Board will direct Permittee to make any required revisions within 45 calendar days of the receipt of comments. The final decision on the acceptability of the Treatment Plan will be made by the Board, in consultation with the SHPO within 45 calendar days of receipt of the comments. A copy of the

final Treatment Plan will be provided by the Board to the signatories and concurring parties to this Agreement within 15 calendar days of receipt from Permittee.

b. The review process described in Stipulation VII.c. through VII.f. shall apply to any Treatment Plan Amendment.

V. Review of Data Recovery Reports

a. Reports resulting from the implementation of data recovery in accord with Stipulation III.c, will be submitted by Permittee to the Board for review. Within 15 calendar days of receipt of the draft report(s), the Board shall provide a copy(s) to the signatory and concurring parties to this Agreement for their review and comment. Within 15 calendar days of its receipt a signatory or concurring party must notify the Board in writing of any deficiencies in the Data Recovery Report. The Board then has 10 calendar days to provide the additional information or to determine that such information is not required. The signatory or concurring parties then have 45 calendar days from the receipt of the complete information or the determination that additional information is not required to comment on the data recovery report. If no additional information is requested, the parties shall have 60 calendar days from receipt of the report to submit comments. A copy of any comments shall be sent simultaneously to the SHPO.

b. Comments will be incorporated, as appropriate into the final report(s) prepared by Permittee at the direction of the Board in consultation with the SHPO. The final report(s) shall be prepared within 45 calendar days of receipt of comments. Permittee will ensure that reports are responsive to contemporary professional standards and to the Secretary's Standards for Archaeological Documentation (48 F.R. 44734-37). A copy of all final reports will be provided by the Board to the signatories and concurring parties to this Agreement within 15 calendar days of receipt from Permittee.

VI. Construction

a. Once the Board has agreed in consultation with the signatories and concurring parties to this agreement on the adequacy of the Inventory Report(s) as defined in Stipulation I.f., the Board will allow TRRC, Inc. to begin construction in those portions of the rail line for which do not contain National Register eligible historic properties within the Class I and Class III Inventory survey areas. Where eligible historic properties are present within the Class I and Class III Inventory survey areas, the Board will allow construction to proceed once the agreed upon data recovery fieldwork/treatment as specified in the Treatment Plan is completed and approved by the Board with the concurrence of the SHPO. Where eligible historic properties are present on BLM, ARS or State Lands, the Board will allow construction to proceed only after the agreed upon data recovery fieldwork/treatment is completed and approved by the BLM with respect to BLM-administered lands, by ARS with respect to ARS lands and by MT DNRC with respect to State lands, in addition to the Board approval with the concurrence of the SHPO.

b. TRRC, Inc. will notify the Board when data recovery fieldwork/treatment is completed for an area. Within 45 calendar days of notification, the Board, and the BLM if data recovery occurs on BLM-administered lands, ARS if data recovery occurs on ARS-administered land or the MT DNRC if data recovery occurs on State Lands, will inspect the site. Upon the Board and SHPO's concurrence and, if appropriate, BLM's, ARS's or MT DNRC's concurrence, that the data recovery fieldwork/treatment has been satisfactorily completed, the Board will allow construction to proceed in that area prior to the completion of the data recovery report. The data recovery report will be prepared in accordance with Stipulation V. Alternatively, issuance of a final data recovery report pursuant to Stipulation V will be considered approval of the data recovery fieldwork/treatment.

VII. Changes in the ROW/Other Ancillary Areas

a. If changes are made to the alignment after a Class III Inventory Report(s) is completed that place the alignment, staging areas, work camps, unimproved construction access routes, or other ancillary areas related to the undertaking outside of the areas previously surveyed in Stipulation I.b, then the Board shall direct Permittee to inventory the area(s) not previously surveyed and to prepare a supplemental Class III Inventory Report prior to construction of the previously unsurveyed area. The Board will review the supplemental Class III Inventory Report including the recommendations of eligibility and findings of effects and distribute it to the signatory and concurring parties to this Agreement within 10 calendar days of the receipt of the supplemental Class III Inventory Report. The Board shall require the return of comments within 30 calendar days. A copy of any comments should be sent simultaneously to the SHPO. In consultation with the SHPO and any tribe that attaches traditional religious or cultural significance to the property, the Board shall seek to reach concurrence on all site eligibility recommendations in the supplemental Class III Inventory Report within 30 calendar days of receipt of comments. The Board, in consultation with the SHPO, will finalize determinations of eligibility pursuant to the criteria in Stipulation I.f. within 45 calendar days of receipt of comments. In addition, the Board, in consultation with the SHPO, shall assess the effects of the undertaking as described in Stipulation I.f. within 45 calendar days of the receipt of comments. The Board, in consultation with the SHPO, shall direct Permittee to make any required revisions to the supplemental Class III Inventory Report.

b. A copy of the final supplemental Class III Inventory report will be provided by the Board to the signatory and concurring parties to this Agreement within 10 calendar days of receipt from Permittee.

c. The Board, in consultation with SHPO, shall consult with the signatory and concurring parties to this Agreement to avoid, minimize, or mitigate any adverse effects identified in Stipulation VII.a. above in a Treatment Plan Amendment. The Board shall invite representatives of the Crow, Arapaho, and Sioux, and any other Tribes that have expressed an interest in the inventories, to meet with the Board, Permittee and the Northern Cheyenne representative(s) who participated in the inventory to discuss how any historic properties of traditional cultural value could most respectfully be managed as part of the undertaking. The Board shall notify parties of the proposed treatment options within 45 calendar days of the final supplemental Class III Inventory Report.

d. The Board will ensure that TRRC, Inc. prepares and implements a Treatment Plan Amendment that will address the adverse effects of the proposed undertaking on historic properties and that balances the concerns of the parties to this Agreement. Such amendment shall (1) identify all eligible historic properties in the APE not previously identified, (2) identify the nature of the effects to which each property identified in the Treatment Plan Amendment will be subjected, and (3) identify the treatment strategies proposed to avoid, minimize or mitigate the effects of the undertaking. The Treatment Plan Amendment shall comply with the provisions in Stipulation III. To the extent practicable, the Treatment Plan Amendment will incorporate measures identified by Native American representatives as necessary for mitigation of adverse effects to properties that are determined to be significant for their traditional cultural values.

e. Within 10 calendar days of receipt of the Treatment Plan Amendment from Permittee, the Board will distribute copies of it to the signatory and concurring parties to this Agreement for a 30 calendar-day comment period. A copy of any comments sent to the Board should be sent simultaneously to SHPO. Within 10 calendar days of the conclusion of the comment period, the Board will direct Permittee to make any required changes. The final decision on the acceptability of the Treatment Plan Amendment will be made by the Board in consultation with SHPO within 30 calendar days of receipt of comments. A copy of the final Treatment Plan Amendment will be provided by the Board to the signatory and concurring parties to this agreement within 10 calendar days of receipt from Permittee.

f. The final amendment will be incorporated in the Treatment Plan.

g. Activities undertaken pursuant to this Stipulation VII shall not impact the ability of TRRC, Inc. to construct in any areas other than the areas not previously surveyed as described in Stipulation VII.a. Construction may not begin in the areas described in Stipulation VII.a. until the Board, in consultation with the signatory and concurring parties of this Agreement, determines that the supplemental Class III Inventory Report described in Stipulation VII.a. is adequate, at which time construction may begin in those areas described in Stipulation VII.a. that have been subjected to a Class III Inventory and do not contain eligible historic properties. Where eligible historic properties are present in those areas described in Stipulation VII.a, TRRC, Inc. will notify the Board when data recovery fieldwork/treatment is completed for an area. Within 45 calendar days of notification, the Board, and the BLM if data recovery occurs on BLM-administered lands, ARS if data recovery occurs on ARS-administered land, or the MT DNRC if data recovery occurs on Montana lands, will inspect the site. Upon the Board and SHPO's concurrence and, if appropriate, the BLM's, ARS's or MT DNRC's concurrence, that the data recovery fieldwork/treatment has been satisfactorily completed, the Board will allow construction to proceed in that area prior to the completion of the data recovery report. The data recovery report will be prepared in accordance with Stipulation V. Alternatively, issuance of a final data recovery report pursuant to Stipulation V will be considered approval of the data recovery fieldwork/treatment.

VIII. Discovery

a. A Discovery Plan for previously unencountered sites will be appended to the Treatment Plan. If a previously undiscovered historic property is encountered during construction, or previously known properties will be affected in an unanticipated manner, all work will cease within 200 feet in all directions until the Board can evaluate and, if necessary, authorize steps to mitigate impacts to the new discovery. Evaluation and mitigation will be carried out in consultation with the signatory and concurring parties to this Agreement as expeditiously as possible in accordance with 36 CFR § 800.13(a)(1).

b. If historic properties are encountered on Federal or State lands, the BLM, ARS or MT DNRC, depending on the agency that controls the land, will be consulted to develop appropriate mitigation measures. TRRC, Inc. will provide the construction contractor with written notification of the proper protocol for discovery of previously unencountered sites.

IX. Human Remains

a. If human remains and funerary objects, sacred object, or items of cultural patrimony associated with human remains are encountered on Federal lands, the Board or the appropriate Federal land management agency shall consult with the appropriate Tribe(s), or other appropriate groups to determine treatment and disposition measures consistent with applicable Federal and State laws (such as the Native American Graves Protection and Repatriation Act (NAGPRA) and Section 106 of the National Historic Preservation Act). If human remains and funerary objects, sacred objects, or items of cultural patrimony associated with human remains are encountered on State lands, the Board will consult with the SHPO and MT DNRC as to appropriate mitigation measures in accordance with, M.C.A.22-3-801 through 811. If human remains and funerary objects, sacred objects, or items of cultural patrimony associated with human remains are encountered on private lands, the Board will ensure that they are treated according to the provisions of the Montana Human Skeletal Remains and Burial Site Protection Act.

b. TRRC, Inc. will make every effort to avoid disturbing known human burial sites. Where avoidance is not possible, burials will be removed prior to construction and treated in accordance with procedures established by applicable Federal and State law and, where appropriate, tribal policy, and in accordance with procedures identified in the Treatment Plan.

c. In the case of inadvertent discovery of human remains during construction activities, the Board will attempt to identify the appropriate Native American tribe(s) or other ethnic group(s) affiliated with the burial, and consult with them over the treatment of remains in accordance with procedures identified in the Treatment Plan. All work will cease within 200 feet in all directions of the human remains until the requirements of federal and state laws are satisfied. TRRC, Inc. will provide the construction contractor with written notification of the proper protocol for discovery of human remains, funerary objects, sacred objects or objects of cultural patrimony.

X. Curation

a. The Board shall ensure curation of all records and other items resulting from identification and data recovery efforts is completed in accordance with 36 CFR Part 79, and the provisions of the NAGPRA. Documentation of the curation of these materials shall be prepared by Permittee and submitted to the Board. The Board shall provide copies of the documentation to the signatory and concurring parties to this Agreement within 15 calendar days of receipt from Permittee. All archaeological materials recovered from BLM lands shall be curated in accordance with BLM requirements at BLM's Billings Curation Center. All archeological materials recovered from ARS lands shall be curated in accordance with 36 CFR Part 79.

b. The Board will encourage private land owners to donate collections from their lands to an appropriate facility meeting the requirements of the Department of the Interior's Manual 411 on curation.[5] Permittee will provide private landowners with a list of all collected artifact finds from their lands. Materials from private lands to be returned to the private land owners shall be maintained in accordance with 36 CFR Part 79 until any specified analysis is complete. Documentation of the return of these materials to the private land owner shall be prepared by Permittee and submitted to the Board. The Board shall provide copies of the documentation to the signatory and concurring parties of this agreement within 15 calendar days of receipt from Permittee.

[5] Stipulation X. b. addresses the curation of cultural resources encountered during construction of the Tongue River Railroad on land owned by private party(ies) other than the Tongue River Railroad Company. Materials found on land owned by the Tongue River Railroad Company will be dontated to an appropriate facility meeting the requirements of the Department of the Interior's Manual 411 on curation.

c. The Board will ensure through consultation with the MT DNRC that all cultural and paleontologic materials discovered on State lands will be curated in accordance with M.C.A. 22-3-432.

XI. Dispute Resolution

a. Should any party to this agreement object within 30 calendar days to any actions pursuant to this agreement, the Board shall consult with the objecting party to resolve the objection. If the Board determines that the objection(s) cannot be resolved, the Board shall forward all documentation relevant to the dispute to the Council, unless the dispute involves site eligibility. Any unresolved issue regarding site eligibility shall be sent by the Board to the Keeper of the National Register.

b. For disputes not involving site eligibility the Council will, within 30 calendar days of receipt of all pertinent documentation, either:

1. provide the Board with recommendations, which the Board will take into account in reaching a final decision regarding the dispute; or

2. notify the Board that it will comment pursuant to 36 CFR Part 800.7(c)(1) through 36 CFR § 800.7 (c)(4)., and proceed to comment.

Should the Council not exercise one of the above options within 30 calendar days after receipt of all pertinent documentation the Board may assume the Council's concurrence with the Board's proposed response to the dispute."

Any Council comment provided in response to such a request will be taken into account by the Board in accordance with 36 CFR Part 800.7(c)(4) with reference to the subject of dispute.

c. For disputes regarding site eligibility the Board will send all pertinent documentation to the Keeper of the National Register to make a determination on issues regarding site eligibility.

d. Any recommendation or comment provided by the Council or the Keeper of the National Register will be understood to pertain only to the subject of the dispute; and no additional work shall occur which could affect the historic property(s) under dispute until resolution of said dispute. The Board's responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

e. Should any member of the public or tribal member raise a timely and substantive objection pertaining to the manner in which the terms of this Agreement are carried out, at any time during its implementation, the Board shall take the objection into account by consulting with the objector to resolve the objection. When the Board responds to an objection, it shall notify the parties to this Agreement of the objection and the manner in which it was resolved. The Board may request assistance of the Council to resolve objections

XII. Public Participation

The Board will ensure that an active public participation program be carried out. Modified version of reports required under this Agreement (locational information removed), will be made available for review to the general public on the Boards website at www.stb.dot.gov. The views of the parties to this Agreement, interested parties, and the general public will be considered by the Board with respect to the terms of this Agreement.

Consistent with Section 304 of the National Historic Preservation Act of 1966, as amended, and Executive Order 13007 (ARPA), the parties to this Agreement will withhold from disclosure to the public, information about the location, character, or ownership of a historic property of it is determined that disclosure may (1) cause a significant invasion of privacy, (2) risk harm to a historic property, or (3) impede the use of a traditional religious site by practitioners.

XIII. Effective Date

This Agreement shall become effective when executed by the authorized representatives of each party and implementation of the Agreement may begin.

XIV. Amendments

Any party to this Agreement may request that it be amended, whereupon the parties will consult in accordance with 36 CFR §800.00 to consider such amendment.

XV. Termination

Any signatory party to this Agreement may terminate it by providing thirty (45) calendar days notice, in writing, to the other parties, provided that the parties will consult during the period prior to termination to seek agreement or amendments or other action that would avoid termination. In the event of a termination, the Board will comply with 36 CFR Part 800.4 through 800.6 with regard to this undertaking.

XVI. Duration

This Agreement shall remain in effect for five (5) years after its execution by the signatories, at which time the Board will notify the parties within three months of its impending expiration and request to extend it for a specific time period. All signatories must respond affirmatively prior to the expiration date for the Agreement to remain in effect.

Execution and implementation of this Programmatic Agreement evidences that the Board has afforded the Council a reasonable opportunity to comment on the construction of the Tongue River Railroad.

SURFACE TRANSPORTATION BOARD

By:_____ Date:_____

MONTANA STATE HISTORIC PRESERVATION OFFICER

By:_____ Date:_____

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By:_____ Date:_____

U.S. ARMY CORPS OF ENGINEERS

By:_____ Date:_____

U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

By:_____ Date:_____

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE:

By:_____ Date:_____

MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

By:_____ Date:_____

TONGUE RIVER RAILROAD COMPANY, INC.

By:_____ Date:_____

Concurrence:

NORTHERN CHEYENNE TRIBE

By:_____ Date:_____

CROW TRIBE

By:_____ Date:_____

NORTHERN PLAINS RESOURCE COUNCIL

By:_____ Date:_____

Appendix 1
Definitions

Class I Inventory

A Class I Inventory is a professionally prepared study of existing cultural resource data from published and unpublished documents, BLM cultural resource inventory records, institutional site files, State and National registers, informant interviews and other information sources. The purpose of the Class I Inventory is to obtain sufficient information about the prehistoric and historic properties, cultural landscapes, and properties of traditional cultural value to determine if these properties may be affected by the undertaking.

Windshield Survey

Windshield survey involves review of a project area by qualified cultural resource specialists from publicly accessible roads. The focus of the survey is to identify potential visual, audible, and atmospheric effects, as well as other indirect effects on standing structures, cultural landscapes and properties of traditional cultural value that may be affected by the undertaking outside the APE.

Class III Inventory

A Class III Inventory is a professionally conducted intensive survey of an entire target area (except for any subareas determined very unlikely to contain discoverable cultural properties such as developed and previously disturbed areas) aimed at locating and recording all cultural properties that have surface and exposed profile indications, through systematic inspection commonly carried out by a professional archaeologists walking a series of close-interval parallel transects until the area has been thoroughly examined. The Class III survey will be conducted using transects no more than 30 meters apart. If necessary, test excavations will be conducted to locate and record cultural resources.

The Class III Inventory also will be conducted on any staging areas, work camps, unimproved construction access routes, and other ancillary areas related to the undertaking. Ancillary areas include all contractor supplied construction materials (e.g. gravel, ballast, fill borrow, etc.) that would result in ground disturbance that have not otherwise been surveyed and permitted separately (e.g. commercial sources of ballast or gravel).

Appendix H

Analysis of Changes in Environmental Regulations since Tongue River I and Tongue River II

APPENDIX H: ANALYSIS OF CHANGES IN ENVIRONMENTAL REGULATIONS/REQUIREMENTS SINCE TONGUE RIVER I AND TONGUE RIVER II

This section describes changes in environmental regulations and requirements that have occurred since preparation of Tongue River I in 1985 and Tongue River II in 1996. The Surface Transportation Board's (Board) Section of Environmental Analysis (SEA) concludes that the changes and additions to Federal, state, and local regulations would not significantly alter SEA's findings or conclusions presented in Tongue River I and Tongue River II. SEA however, has reviewed and considered these changes and they are listed below.

CHANGES IN FEDERAL AND/OR NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) REGULATIONS

The following section describes changes to, or new, Federal environmental regulations. The environmental analysis topic area for which the changed or new regulation would apply is identified in bold.

Land Use – Since 1985, the Natural Resource Conservation Service (NRCS) has modified the criteria for prime farmland designation in Montana. The criteria now state that prime farmlands are defined as having a Holding Capacity of four inches of water in the top 40 inches of soil.

Biological Resources – There have been a number of changes in the Endangered Species Act status of various animal species which may be present in the general vicinity of the proposed project. These changes are summarized below.

Bald Eagle

In 1995, the bald eagle was reclassified from "endangered" to "threatened" under the *Endangered Species Act* of 1973 (ESA), as amended. In 1999, USFWS proposed to delist the bald eagle. This action is still pending.

Pallid Sturgeon

This fish was listed as "endangered" under the ESA, as amended in 1990. A single specimen was captured in 1991 in the Yellowstone River near Miles City. SEA determined that spawning habitat could extend 20 miles up the Tongue River.

Sturgeon Chub

The sturgeon chub was placed on the candidate list in 1995 (L. Nordstrom, personal communication, September 1998). In 2001, USFWS published a determination that listing the species was not warranted (Federal Register 2001). This fish is reported to occur in the lower Tongue River near its confluence with the Yellowstone (Elser 1977, Brown 1971). The sturgeon chub was placed on the candidate list in 1995 (L. Nordstrom, personal communication, September 1998). Sturgeon chub were collected in the lower Tongue River in

the late 1970s and in nearby Powder River in 1997 and 1998 (Trenka 1999; Riggs, MT DFWP, personal communication, 1999; Brown 1971). Historically, the Powder River and the Tongue River have had very similar fish assemblages.

Mountain Plover
This bird was proposed for listing as a "threatened" species by the USFWS on February 16, 1999. On September 9, 2003, USFWS published a determination that the listing action was not warranted and withdrew the proposal (Federal Register 2003). There are no records of this species in the Tongue River Valley. However, its habitat in Montana is considered to be prairie dog colonies and heavily grazed short-grass prairie or shrub steppe habitat, both of which occurs in the project area.

Federal Register. 2001.50 CFR Part 17 Page 19910-19914. 12-month finding for a petition to list the sickle fin chub (Macrhybopis meeki) and the sturgeon chub (Macrhybopis gelida) as endangered. April 18, 2001 (Volume 66, Number 75).

Federal Register. 2001.50 CFR Part 17 Page 53083-53101. Withdrawal of the proposed rule to list the mountain plover as threatened. September 9, 2003 (Volume 68, Number 174).

SEA determined that there have been no changes to Council of Environmental Quality (CEQ) or Board regulations or guidances specific to biological analysis since 1985. However, the Corps now requires a Conceptual Habitat Mitigation Plan and Alternatives Analysis (404 (b)(1) Showing) for projects that would place fill in United States wetlands or waters. In response, SEA has directed TRRC's consultant to prepare a Conceptual Habitat Mitigation Plan and Draft Alternatives Analysis for the 1998 Alignment within Tongue River I, as well as for Tongue River II. This information is presented in Appendix D.

Soils and Geology – SEA has determined that since 1985 there have been no CEQ regulations or guidance issued that affect evaluation of soils and geology impacts. SEA also determined that there have not been any Board or NEPA changes specific to this topic.

Hydrology and Water Quality – SEA has determined that since 1985 there have been no changes to Federal regulations that would affect the existing analysis of water quality.

Cultural Resources – The Native American Graves Protection and Repatriation Act (NAGPRA) was enacted by the United States Congress in 1990 in part to protect Native American graves and related areas located in archeological sites on Federal and tribal lands. NAGPRA provides that any intentional excavation and removal of Native American human remains and other cultural items from Federal or tribal lands be conducted only with a permit issued pursuant to the Archeological Resources Protection Act and after consulting with the appropriate tribe. If an inadvertent discovery is made of Native American remains or objects in connection with an activity on Federal or tribal lands, the activity must cease in the area of the discovery, a reasonable effort must be made to protect the items discovered before resuming activity, and the appropriate Federal agency or tribal authority must be notified.

Activities may resume 30 days after receiving certification of notification from the appropriate Federal agency or tribal authority. The act also requires Federal agencies and museums to inventory their holdings of Native American cultural items and return such items to Indian tribes and other Native American groups. In addition, the law requires tribes of known or potential affiliation with noted grave sites and related areas to be consulted regarding their treatment and disposition. In addition to NAGPRA, there have been several other Federal regulations established since 1985 relative to the protection of cultural and Native American resources:

- *The National Historic Preservation Act* (NHPA) was amended in 1992, the *American Indian Religious Freedom Act* (AIRFA) was amended in 1993, and the *Religious Freedom Restoration Act* was enacted that same year.
- Issued in 1996, *Executive Order 13007* requires Federal agencies to ensure that their actions do not inhibit Native Americans from accessing traditional and sacred sites.

Montana Antiquities Act, as amended 1995

The Montana Antiquities Act addresses the responsibilities of the State Historic Preservation Office and other state agencies regarding historic and prehistoric sites including buildings, structures, paleontological sites, archaeological sites on state owned lands. Each state agency is responsible for establishing rules regarding historic resources under their jurisdiction, which address National Register eligibility, appropriate permitting procedures and other historic preservation goals. The Department of Natural Resources and Conservation (Trust Lands) and Montana Fish, Wildlife and Parks have written rules for implementing the Antiquities Act. All other agencies are responsible for following the administrative rules written by the State Historic Preservation Office in 1999. The State Historic Preservation Office also issues antiquities permits for the collection of archaeological or paleontological remains on state owned lands under the Act.

Montana Human Skeletal Remains and Burial Site Protection Act (1999)

The Human Skeletal Remains and Burial Site Protection Act is the result of years of work by Montana Tribes and state agencies and organizations interested in assuring that all graves within the State of Montana are adequately protected. The law provides legal protection to all unmarked burial sites regardless of age, ethnic origin or religious affiliation by preventing unnecessary disturbance and prohibiting unregulated display of human skeletal remains. Anyone who discovers human skeletal remains on public or private lands should immediately contact the county coroner. The Act created a thirteen- member Burial Preservation Board that determines the treatment and final disposition of any discovered human remains and associated burial materials. The Act establishes the preference that human remains be left undisturbed where they are found.

In March 1999, the BLM designated the public land portion of the Battle Butte Battlefield as an Area of Critical Environmental Concern (ACEC) in the BLM's Miles City District. The battlefield is located within the Tongue River II study area approximately four miles south of Birney, and comprises approximately 1,976 acres, 120 acres of which have been designated as an ACEC. The battlefield is

one of 12 major battlefields of the Great Sioux War (1876 through 1877). The war and associated sites are of major interest to Native American cultures of the Sioux, Crow, and Cheyenne, as well as national historians.

Transportation and Safety – SEA determined that since 1985 there have been no changes to Federal regulations that would affect the existing analysis of transportation and safety.

Air Quality – The EPA has published minimum air quality standards or *National Ambient Air Quality Standards* (NAAQS). Except for the standards related to particulate matter (PM_{10}), which included the establishment of a $PM_{2.5}$ standard, and ozone, all the NAAQS are unchanged since 1985. The State of Montana, however, has imposed more stringent ambient air quality standards since 1985. Table C-1 provides a summary of Federal and State Air Quality Standards according to the Montana Department of Environmental Quality.

Table C-1 – Federal and State Air Quality Standards

POLLUTANT	TIME PERIOD	FEDERAL (NAAQS)	MONTANA (MAAQS)	STANDARD TYPE
Carbon Monoxide (CO)	Hourly Average	35 ppm[1]	23 ppm[b]	Primary
	8-Hour Average	9 ppm[1]	9 ppm[b]	Primary
Fluoride in Forage	Monthly Average	–	50 µg/g[c]	--
	Grazing Season	--	35 µg/g[c]	--
Hydrogen Sulfide	Hourly Average	--	0.05 ppm[b]	--
Lead	90-Day Average	–	1.5 µg/m3[c]	--
	Quarterly Average	1.5 µg/m[3c]	--	Prim. & Sec.
Nitrogen Dioxide	Hourly Average	–	0.30 ppm[b]	--
	Annual Average	0.053 ppm[3d]	0.05 ppm[e]	Prim. & Sec.
Ozone	Hourly Average	0.12 ppm[f]	0.10 ppm[b]	Prim. & Sec.
	8-Hour Average	0.08 ppm[g]	--	Prim. & Sec.
PM-10	24-Hour Average	150 µg/m[3k]	150 µg/m[3k]	Prim. & Sec.
	Annual Average	50 µg/m[3l]	50 µg/m[3l]	Prim. & Sec.
PM-2.5	24-Hour Average	65 µg/m[3m]	–	Prim. & Sec.
	Annual Average	15 µg/m[3n]	--	Prim. & Sec.

POLLUTANT	TIME PERIOD	FEDERAL (NAAQS)	MONTANA (MAAQS)	STANDARD TYPE
Settleable Particulate	30 day Average	--	10 g/m^{2c}	--
Sulfur Dioxide	Hourly Average	--	0.50 ppm[h]	- -
	3-Hour Average	0.50 ppma	- -	Secondary
	24-Hour Average	0.14 ppm[a,i]	0.10 ppm[b,j]	Primary
	Annual Average	0.03 ppm[d]	0.02 ppm[e]	Primary
Visibility	Annual Average	--	3 x 10^{-5}/m[e]	--

1 Federal violation when exceeded more than once over any 12 consecutive months.
a Federal violation when exceeded more than once per calendar year.
b State violation when exceeded more than once over any 12 consecutive months.
c Not to be exceeded (ever) for the averaging time period as described in the state and/or federal regulation.
d Federal violation when the annual arithmetic mean concentration for a calendar year exceeds the standard.
e State violation when the arithmetic average over any four consecutive quarters exceeds the standard.
f Applies only to NA areas designated before the 8-hour standard was approved in July, 1997. Mt. has none.
g Federal violation when 3-year average of the annual 4th-highest daily max. 8-hour concentration exceeds standard.
h State violation when exceeded more than eighteen times in any 12 consecutive months.
i Federal standard is based upon a calendar day (midnight to midnight).
j State standard is based upon 24-consecutive hours (rolling).
k State and federal violation when more than one expected exceedance per calendar year, averaged over 3-years.
l State and Federal violation when the 3-year average of the arithmetic means over a calendar year at each monitoring site exceed the standard.
m Federal violation when 3-year average of the 98th percentile values at each monitoring site exceed the standard.
n Federal violation when 3-year average of the spatially averaged calendar year means exceed the standard.

Noise and Vibration – The Board revised its criteria of significance for noise increases to sensitive receptors. In 1985, the criteria for significance was a receptor located within the 65 decibel (dB) contour and experiencing a 4 dB increase in noise. SEA revised the criteria to include receptors within the 65 dB contour that experience a 3 dB increase in noise.

Socioeconomics – President Clinton signed *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* on February 11, 1994. The order and the accompanying memorandum require environmental justice analyses to be conducted as a part of NEPA documentation in environmental assessments (EAs) and EISs. The overall objective of the order is to avoid "disproportionately high and adverse human health or environmental effects on minority and low income populations." EPA's Office of Federal Activities issued its *Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* on September 30, 1997.

Executive Order 12898 explicitly refers to Native American populations as being subject to environmental justice considerations. Tongue River I did not specifically address environmental justice, but did include the type of data and analyses that could have been used to address environmental

justice, had the order been in affect at that time. For preparation of environmental justice analyses, SEA generally follows the USDOT guidelines in its 1997 *Environmental Justice Order*.

Recreation – SEA determined that no changes have occurred in Federal regulations pertaining to recreational activities or resources in the study area.

Aesthetics – SEA determined that no changes to Federal regulations have occurred that could result in new significant impacts with regard to aesthetics.

Energy – SEA determined that no changes to Federal regulations have occurred that could result in new significant impacts with regard to energy.

CHANGES IN LOCAL OR STATE REGULATIONS

The following section describes changes or new environmental regulations in the State of Montana or local jurisdictions (counties). The environmental analysis topic area for which the changed or new regulation would apply is identified in bold.

Land Use – There have been changes to the State of Montana Eminent Domain laws that could affect land use regulations within the project area. A new subdivision ordinance in Rosebud County (from which railroads are exempt) has also been implemented.

Biological and Aquatic Resources – SEA determined that since 1985 no changes have occurred to local or state regulations that would result in new significant impacts on biological or aquatic resources.

Soils and Geology – SEA has determined that since 1985 no state or local regulations or guidance were issued that affect evaluation of soils and geology impacts

Hydrology and Water Quality – The State of Montana has adopted a new process for measuring water quality: Total Maximum Daily Load (TMDL) analysis. The State prioritizes waterways for TMDL analysis so that waterways subject to suspended solid contaminants and sediment loading are higher on the priority list. In 1997, the Montana State Legislature amended the Montana Water Quality Act (MWQA)to introduce TMDL analysis with the goal of better monitoring water quality. The State has designated the Tongue River, Hanging Woman Creek, and Otter Creek as low priority for TMDL analysis. These waterways are not subject to the nutrient contaminants which have caused other waterways to be rated as medium or high under TMDL.

Cultural Resources – In 1991, the Montana State Legislature passed the *Montana Human Skeletal Remains and Burial Site Protection Act*, which provides legal protection to all unmarked graves or skeletal remains on public or private lands in Montana.

Transportation and Safety– The Montana Department of Highways' *Railroad Crossing Protection Policy* of 1973 was replaced in 1997 by the MT DOT *Railroad Administrative Rules of Montana*.

MT DOT uses a diagnostic review team to review each public at-grade crossing and then recommends the appropriate at grade crossing protection device. MT DOT review of the proposed rail line would ensure compliance with all applicable State legislation pertaining to railroad crossings.

Air Quality – Table 1 provides a summary of minor changes in both NAAQS and MAAQS.

Noise and Vibration – SEA determined that since 1985 no changes have occurred in state or local regulations pertaining to noise analyses or mitigation requirements in the study area.

Socioeconomics – There have been no changes in state or local regulations pertaining to socioeconomic issues in the study area.

Recreation – There have been no changes in state or local regulations pertaining to recreational activities or resources in the study area.

Aesthetics – SEA determined that no changes to state or local regulations have occurred that could result in new significant impacts with regard to aesthetics.

Energy – SEA determined that no changes to state or local regulations have occurred that could result in new significant impacts with regard to energy.

Appendix I

Revised Universal Soil Loss Equation

APPENDIX I: REVISED UNIVERSAL SOIL LOSS EQUATION

Gross estimates of soil erosion due to rainfall were made for the study area using the Revised Universal Soil Loss Equation (RUSLE). The original Universal Soil Loss Equation (USLE) was revised in recent years to reflect advances in the estimation of soil loss and to allow a more detailed analysis of site conditions (Renard, Laflen, Foster, and McCool, 1994). The components of both equations are the same; however, improvements were made in the estimation of the individual factors. The USLE/RUSLE is as follows:

$$A = R \times K \times LS \times C \times P$$

where:

A = Estimate of soil loss in tons/acre/year.

R = Rainfall-Runoff Erosivity Factor, representing the erosivity of the climate. Isoerodent maps have been generated, from which the R factor for a particular location in the United States may be taken. For the revised equation, the values of this factor for the western states were re-evaluated and corrected based on new considerations of how erosion occurs in this region. A range of R values for the area of the railway construction (both routes) of 18 to 19 was selected using both the isoerodent map from RUSLE and the NRCS RUSLE erosion prediction computer model v 1.06 (and associated database). The R-value range is the same for both baseline and construction conditions.

K =Soil Erodibility Factor, reflecting the exposed soil's inherent susceptibility to erosion under the standard condition of continuous fallow. Values typically range from about 0.10 to 0.45, but may go as high as 0.70, with high coarse sand and high clay having the lower values and high silt and high fine sand having the higher values. The Natural Resources Conservation Service (NRCS) has developed K values for many soils across the United States. Some of these values may be adjusted slightly under the RUSLE, with soils in arid areas tending to have lower K values than similar soils in wetter areas. An average K value of 0.32 was previously determined for the soils in the vicinity of the route (ICC 1983). However, this is representative of the surficial soils. Most of the exposed soils will be composited from a mixture of deeper soils ripped from the cut areas and deposited in the fill areas. This material is expected to have a significant percentage of rock and clinker mixed in, which will effectively reduce the erodibility. Some of the deeper soil horizons and less erodible surficial soils in the area have K values of approximately 0.10 - 0.20 (NRCS 1996). Furthermore, an erodible soil with a typical K value of 0.32 would be reduced to approximately 0.24 with the addition of 50 percent rock fragments (Leopold 1998). Therefore, considering the arid climate, the mixing of deeper soils and geologic strata, and the presence of a significant percentage of rock and clinker fragments, a range of 0.23 to 0.30 for baseline conditions and 0.20 to 0.34 for construction conditions has been assumed for both the proposed Western Alignment and the approved Four Mile Creek Alternative.

LS = Topographic Factor, accounting for the effect of the exposed slope lengths and their degree of slope on the rate of erosion. The average slope length and degree of slope associated with baseline conditions was estimated for the proposed Western Alignment and the approved Four

Mile Creek Alternative. The estimated average slope lengths for each alignment and the average slope gradients (25 percent for both alignments) were used to determine the baseline LS factor range of 3.97 to 4.21 for the proposed Western Alignment and 2.73 to 2.76 for the approved Four Mile Creek Alternative. The average slope length and degree of slope associated with the finished construction was then estimated for the proposed Western Alignment and the approved Four Mile Creek Alternative. The estimated average slope lengths for each alignment and the average slope gradients (50 percent for all alignments) were used to determine the LS factor range of 8.27 to 9.73 for the proposed Western Alignment and 6.4 to 6.87 for the approved Four Mile Creek Alternative.

C = Cover/Management Factor, representing conditions that can be managed to control erosion, mainly protection provided by ground cover and vegetation. The C factor range for the baseline condition was estimated at 0.086 to 0.13 for both alignments. To reflect a worst-case scenario for construction conditions, and assuming the site is freshly disturbed and no ground cover is available for protection, a C factor of 1.0 for bare soil was chosen for both the proposed Western Alignment and the approved Four Mile Creek Alternative.

P = Supporting Practices Factor, accounting for the effect of surface conditions on flow pathways and hydraulics. This factor is mainly used when agricultural practices such as contouring and tilling are going to be implemented. For baseline and to reflect a worst-case scenario for construction conditions, no such practices were assumed, and a P factor of 1.0 (no contouring/furrowing) was selected for the analysis of both the proposed Western Alignment and approved Four Mile Creek Alternative.

Appendix J

Adopted and Superceded Mitigation Measures from Tongue River I

APPENDIX J

TONGUE RIVER I - FD 31086 (Sub - No. 1)
ADOPTED MITIGATION MEASURES

In 1986, the ICC approved TRRC's proposed rail line from Miles City to Ashland, MT in Tongue River I and imposed as part of the approval decision the Master Mitigation Plan recommended in the EIS prepared for this proceeding. The Master Mitigation Plan for Tongue River I in its entirety is reproduced below.

In the margin is SEA's suggested disposition for each mitigation measure: recommended, recommended as modified, or recommended to be superceded. For those measures recommended to be modified, there is a reference to the appropriate chapter, Chapter 7, in the Draft Supplement where the mitigation measure or modified mitigation measure is set forth. The reasons explaining why SEA recommends that mitigation measures be superceded are discussed, in order, in the section immediately following the Master Mitigation Plan.

Master Mitigation Plan from Tongue River I and SEA's Suggested Disposition:

1.0 INTRODUCTION

Recommended to be superceded.

Environmental impacts associated with the construction and operation of the Tongue River Railroad are discussed in the environmental documentation prepared for this proceeding. Numerous suggested mitigation measures to be applied to avoid or lessen impacts are also presented in the documentation. It was recognized, during preparation of the Draft Environmental Impact Statement (DEIS), that final and more specific mitigative measures would have to await comments on the DEIS and testimony at the proceedings. With these aspects of the proceedings now completed, it is appropriate to consider specific mitigative measures that can be applied in this case. The purpose of this Master Mitigation Plan is to provide a more definitive framework for mitigation planning and to provide ultimately for the just compensation of economic and environmental loss due to the Tongue River Railroad Company (TRRC).

The plan is divided into various sections, conforming to the topics discussed in the environmental documentation. Potential impacts and suggested mitigative measures are discussed for each discipline. It should be noted that many of the topics presented during the proceedings relate to site-specific concerns of individual landowners. To the extent that these issues relate to environmental matters, they are discussed in this document. However, the Section on Energy and Environment *(SEE)* recognizes that many of the site-specific concerns will be the topics of negotiation between the Applicant and

affected landowners.

The Section of Energy and Environment emphasizes that this plan is not the only method available to protect the interests of the affected landowners or other affected parties. Many of the specific mitigation measures mentioned in the hearings and in comments on the draft mitigation plan are subject to negotiations for right-of-way purchase or easements. The State of Montana's (concerns have been addressed in this document. However, the State retains the right to expand these mitigation measures in granting easements across state lands.

Similarly, the areas subject to landowner/railroad negotiations have been identified in this and other documents and mechanisms have been suggested to facilitate right-of-way discussions. Montana statute protects the integrity of those negotiations. Montana law provides for the appointment of qualified, disinterested condemnation commissioners, should right-of-way negotiations between the parties be unsuccessful. The commissioners are required to assess compensation at current, fair, market value (MCA 70-30-207, 70-30-302). There is significant latitude available to the commissioners to provide compensation to the affected landowners to cover direct acquisition of land, severance, and depreciation damages for non-contiguous lands.[1]

A combination of provisions outlined in this mitigation plan and the negotiation process, protected by Montana law, will place the affected landowners on strong footing with regard to addressing the environmental impacts to their property.

2.0 LAND USE IMPACT MITIGATION

Recommended to be superceded.

Land use impacts can be divided into three groups for mitigation purposes:(1) impacts to agricultural operations; (2) impact to the Livestock and Range Research Station (LARRS); and (3) impacts to the Miles City Fish Hatchery. Many of the procedures and measures implemented under this topic will be useful under other disciplines, as well. As a result, Land Use is considered to be of primary importance in terms of both impact and mitigation. This is underscored by the primacy of agriculture as the regional land use and economic base, not only for the Tongue River/Otter Creek area, but on a regional and statewide basis. It should be noted that the level of specificity varies in terms of mitigation suggested for the three groups listed here. This is due in part to the varying requirements placed on the applicant by federal law.

The LARRS is federal property and subject to Department of Agriculture easement procedures and requirements. TRRC's easement application for the proposed crossing of LARRS was filed with the Department of Agriculture in January 1985. The application for an easement across the facility constitutes an independent permitting process and requires the level of detail presented in this Draft Master Mitigation Plan. Similar efforts will be undertaken with the State of Montana when easement applications are filed with the Department of State Lands and the Department of Fish

[1]Meagher County Newlan Creek Water District v.Walter,169 M 358, 547 P2d 850 (1976); State Highway Commission v. Renfro, 161 M 251, 505 P2d 403 (1973); State v. Hoblitt, 87 M !03, 288 P 181 0930).

Wildlife and Parks. The same specificity will undoubtedly result from negotiations with the 39 individual ranchers along the proposed right-of-way (ROW). As previously noted, that negotiation process is subject to provisions in Montana law concerning eminent domain. At this point, it would be inappropriate to bind either the railroad or an individual landowner to detailed measures that either party might want to change at some future date.

2.1. Agricultural Operations

2.1.1 General

Recommended to be superceded.

The major goal of all mitigation measures directed at individual agricultural operations should be to minimize the effect of the railroad on day-to-day operations of the existing ranches. The negotiations and planning process should focus on the following objectives:

(a) Maintaining the integrity of each operation as an independent agricultural enterprise.

(b) Maintaining the economic vitality and productivity of each operation at levels generally approximating the current situation developing and implementing measures which will preclude the necessity for significant time/labor increases due to the existence of the railroad.

(c) Identifying parcels which will no longer be economically viable for present uses, and developing alternative uses or appropriate compensation.

(d) Implementing measures to limit or preclude nuisance impacts of the railroad.

With these goals in mind, the Applicant should undertake negotiations with individual landowners during acquisition of the ROW. By law, the Applicant will be required to negotiate in good faith with the individual landowners. Firm commitments as to the specific measures to be taken to attain the above-stated goals will be made and documented by the parties. Areas of concern that should be addressed include, but are not limited to, the following items.[2]

[2] These areas of concern have been identified through review of the comments on the Draft EIS and supplement thereto, review of testimony delivered at hearings, and consultation with NPRC staff members. NPRC's suggested mitigation recommendations were attached to its post-hearing brief as Appendix 4.

(1) Direct and Indirect Land Loss.Each agricultural operation that is crossed by the Tongue River Railroad will experience some loss of agricultural land due to inclusion in the ROW. The mitigation for such loss is direct compensation. This compensation is properly negotiated on an individual basis between each landowner and the Applicant.

Recommended to be superceded.

Indirect land loss, clue to severance of parcels, will also occur in certain situations. The standards to be used in assessing that indirect loss will differ by landowner, and landowners will be given the opportunity to identify severed parcels in negotiations. It is possible to use some severed parcels for alternate agricultural purposes, thus mitigating to some extent the total loss. The Applicant should assist landowners in identifying and developing such uses where appropriate, and in applying a combination of such assistance and compensation, where necessary and agreed upon during ROW negotiations.

(2) Displacement of Capital Improvements. Where capital improvements such as fences, wells, corrals, and irrigation systems are displaced, the Applicant should relocate or replace these improvements where possible. Generally, these capital improvements can be replaced. In some instances, it may be necessary to provide compensation for such displacements. Specifically, fences should be reconstructed according to the design specifications previously existing on the ranch or to specifications requested by the landowner and agreed to during negotiation. Where parcels have been redesigned, the applicant should erect new fences to conform to the redesigned pasture parcel. Similarly, corrals, haysheds, etc., should be relocated within the redesigned land parcels.

Recommended to be superceded.

Where wells and springs are displaced, the Applicant should replace the existing improvements to the current standard. For instance, every effort should be made to assure the continued use of natural springs. Often, this can be accomplished by the installation of culverts of proper design and location. In instances where a well is displaced, the Applicant should construct a new well and insure that there will be no additional cost to the rancher for the operation of that well beyond the cost incurred with the previous well.

Where irrigation systems, whether they be gravity or mechanical, are disrupted or displaced, the first goal of the Applicant should be to assist the landowner in redesigning the system in order to continue its current use. For instance, culverts should be installed and ditches reconstructed for gravity systems. For sprinkler systems and other mechanical devices, all attempts should be made to substitute a redesigned system. Where this is not possible, the Applicant should negotiate with the landowner for a combination of compensation and reuse of the parcel for some other purpose.

(3) ROW Fencing. The Applicant should construct IM fencing along the entire line according to specifications most suitable to the landowners and consistent with industry standards. If special fencing needs or specifications are requested on individual ranches, it will become a matter for negotiation. Likewise, if, in some cases, landowners would prefer to forego fencing of the ROW in order to provide easier access for livestock across the rail line, the Applicant should consider such a request. It should be noted that such a request could be honored only after matters of safety and liability are considered.

Recommended to be superceded.

(4) Access Restrictions. The Applicant has tentatively identified 77 cattle passes that would be installed along the ROW. These cattle passes would consist of an oval, corrugated metal structure, roughly 12 ft. high and 11.5 ft. wide at the base. The proposed locations for these cattle passes were developed by the engineering consultants, using aerial photography, on-the-ground inspection, and information from individual landowners. The locations of these cattle passes were indicated in second phase engineering plan and profile sheets, which were provided to the individual landowners for comment. The Applicant should work with landowners during third phase engineering and ROW negotiations to identify the locations of any additional cattle passes and to finalize the placement of those previously identified. In addition, locations for grade crossings for equipment, etc., will also be determined through negotiations and engineering practicality.

Recommended to be superceded.

In some cases, landowners may prefer a different type of cattle pass than that currently proposed by the Applicant, e.g., box culvert, trestle, etc. Recognizing that different types of cattle passes could be far more costly than those currently proposed, the Applicant should work with the individual landowners to develop an acceptable alternative. For instance, one alternative might be to install a trestle-type structure in lieu of two or three corrugated metal culverts. In such a case, the cost of the trestle could be basically the same as the culverts, and thus an acceptable compromise. In other instances, such as where the placement of a cattle pass is not feasible from an engineering standpoint due to an extensive cut, the Applicant should discuss with the landowner the possibility of a bridge over the railroad to provide access for cattle.

(5) Impacts During Construction. During third phase engineering, the Applicant should work with individual landowners to avoid unnecessary conflict between construction-related activities and ranching operations, such as moving cattle between pastures during certain seasons of the year. However, it is recognized that inconvenience to the ranchers cannot always be avoided if a construction schedule is to be maintained. Temporary inconvenience to the rancher from construction related activities should be considered during ROW negotiations.

Recommended to be superceded.

All construction-related activities should be confined to the purchased or

leased ROW, and to the construction camps located along the rail line. The specific location of construction camps should be solely a matter of negotiation between individual landowners and the Applicant.

Construction of the rail line will require bonding for Applicant's contractors. In the event of contractor-caused damage to a landowner's property, lengthy negotiations between the individual landowner and the contractor's bonding agent could ensue. In order to speed this process of negotiation, the Applicant should require its contractors to place sufficient funds in an escrow account to pay for incidental damages incurred during construction. Payment could be advanced from this fund, pending resolution of any liability on the part of the contractor for the damages incurred. Specifics of such a plan, including definitions of liability, would have to be negotiated between the parties, ICC, TRRC and affected landowners, prior to construction.

The Applicant should require its contractors to police construction camps during operation, to control the personnel in camps, and limit those personnel to workers directly involved in the project. Upon completion of construction, the camps should be reclaimed to their previously existing use.

The Applicant should appoint a railroad representative to work with the prime and subcontractors and the landowners to resolve any problems developing during construction. This individual should have direct access to the management of the Tongue River Railroad Company.

(6) Impacts from Operation. Although every effort has been made to identify impacts from operation of the Tongue River Railroad, unanticipated problems could develop once the line has been constructed. In order to address these problems, the Applicant should appoint a representative to meet with landowners to discuss these problems after the railroad has become operational. The Applicant's representative should work with individual landowners to resolve any unforeseen problems that develop and to establish good landowner/railroad relations.

Recommended as modified, see Chapter 7

2.2. Impacts to Fort Keogh Livestock and Range Research Station (LARRS)

2.2.1. General

The potential impacts to LARRS have been explored in detail, both by the ICC's consultants and by LARRS personnel. LARRS personnel have taken an active role in development of the proposed route in coordination with the Applicant's engineers. In addition, LARRS personnel have examined the proposed route in detail and have developed a series of mitigation needs and procedures that were submitted to the Applicant. Those measures to which the Applicant has committed are included here. It is expected that these and other mitigation measures will be attached to a final easement agreement for ROW across the facility.

Recommended to be superceded.

2.2.2. Specific Mitigation Concerns and Resolutions

(1) LARRS has requested a grade-separated crossing for primary access to the southeast portion of the station Access is currently obtained through a box-type culvert beneath U.S. Interstate 94. The alignment, as detailed in the proposed Branum Lake Option, calls for crossing under I-A. If this option is utilized, the Applicant will provide a non-blocked, grade-separated crossing from LARRS to insure adequate access to the southeast portion of the station. The Applicant is currently exploring the possibility of bridging over 1-94 at this point. If this plan is feasible, then existing access would not be affected or altered by the railroad.

Recommended to be superceded.

(2) LARRS has requested that sufficient flood drainage be provided north of the Camel's Back. The Applicant will provide drainage with culverts (designated to pass 100-year design floods.

Recommended to be superceded.

(3) LARRS has requested that a grade-separated crossing be located on the Burlington Northern Railroad (BN) ROW adjacent to the LARRS headquarters facilities. The Applicant has agreed to provide a grade-separated crossing at this location.

Recommended to be superceded.

(4) LARRS has requested two wells in the No. 3 pasture. One well is located in Section 13 and the other in Section 12. The Applicant has agreed to construct two new, non-electrified, wells or one non-electrified well and a pipeline, whichever is most appropriate.

Recommended to be superceded.

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[3] LARRS staff have assumed responsibility for electrifying these and other wells, should they so desire.

(5) LARRS has requested two railroad crossings in the No. 3 pasture. Underpasses would be desirable; however, crossings over the track would work. One is located from Section 13 to 18 and the other from Section 12 to 7. A road (all weather) from the Section 12 to 7 crossing along the track to Section 18 would also work. The Applicant has agreed to provide at least one separated grade crossing. The other crossing would be at grade. **Recommended to be superceded.**

(6) LARRS has requested rip-rapping along the river in Section 6 in the 2C Bend pasture, if necessary. The Applicant plans to provide all necessary rip-rapping to insure the integrity of the railroad embankment. **Recommended to be superceded.**

(7) LARRS has requested an underpass for cattle movement in Section 6. The Applicant has agreed to provide this underpass. **Recommended to be superceded.**

(8) LARRS has requested a vehicle pass 0804 ft. in Section 36 near the existing road to allow access to Lower 2C Bend. The Applicant has agreed to a cattle underpass and an at-grade crossing for equipment at this location. **Recommended to be superceded.**

(9) LARRS requests a track crossing for equipment where the track crosses Paddy Fay Creek. This concern should be resolved by Applicant's commitment to construct a bridge at Paddy Fay Creek. **Recommended to be superceded.**

(10) LARRS requests an access road along the river from Section 23 (Lower Flood) to Section 25, 25 and 36 (2C Bend). The Applicant has agreed to provide a road parallel to the railroad ROW for access. **Recommended to be superceded.**

(11) LARRS requests that the Applicant relocate the water tank and pipeline in Lower 2C Bend and locate a new tank in the north end of Lower 2C Bend. Applicant has agreed to relocate the existing water tank as well as to locate a new tank in the north end of Lower 2C Bend. **Recommended to be superceded.**

(12) LARRS requests that the proposed alignment be located as close to the hill between Upper and Lower 2C Bend as possible to eliminate the waste land. The alignment submitted to the ICC in June 1983 incorporates this suggestion and is incorporated as the Applicant's proposed action. **Recommended to be superceded.**

(13) LARRS requests rip-rap along the river in the North Tongue River Bend. The Applicant has agreed to rip-rap along the river in the North Tongue River Bend, and has initiated 404 applications for this site with the U.S. Army Corps of Engineers. **Recommended to be superceded.**

(14) LARRS requests that the TRRC relocate the well in North-South Tongue River fence line to water both pastures. The Applicant has agreed to **Recommended to be superceded.**

relocate this well.

(15) LARRS requests a vehicle underpass 18 ft. wide by 14 ft. high on the road from Lower Flood to North Tongue River Bend. After considerable discussion with LARRS, it was determined that a cattle pass under the tracks with an equipment crossing "at grade" with the tracks could be used in place of the 18 x 14 ft. underpass. **Recommended to be superceded.**

(16) LARRS requests that the Applicant relocate the well between Lower Flood and Lower Flood Bend. (Pipeline system to serve Lower Flood, Lower Flood Bend, South Lower Flood Bend, and Middle Flood.) The Applicant has agreed to relocate the well between Lower Flood and Lower Flood Bend. **Recommended to be superceded.**

(17) LARRS requests that the TRRC relocate the fence between Lower Flood and Lower Flood Bend pastures. The Applicant has agreed to relocate the fence. **Recommended to be superceded.**

(18) LARRS requests that the Applicant place culverts under the track through Lower Flood to accommodate the flood dike system. Applicant has agreed to place culverts under the trackage through the Lower Flood area which will accommodate the flood dike system. **Recommended to be superceded.**

(19) LARRS requests a road along the east side of Hill pasture, and a vehicle pass to North Tongue River pasture. The Applicant has agreed to these requests. **Recommended to be superceded.**

(20) LARRS requests a vehicle pass by old Lone Pine road to access Lower Flood Bend. The Applicant has agreed to construct a vehicle pass adequate for pickups and cattle, with an at-grade crossing for larger equipment. **Recommended to be superceded.**

(21) LARRS requests that, where the railroad meets and removes the all-weather road in Hill Pasture, provisions for new road be provided. The Applicant has agreed to replace this road. **Recommended to be superceded.**

(22) LARRS requests that an underpass be provided where the railroad crosses the gravel road in Hill Pasture. The Applicant has agreed to provide a grade-separated crossing. **Recommended to be superceded.**

(23) LARRS requests that a well be located in Hill Pasture to replace pit reservoir. The Applicant has agreed to provide a non-electrified well. **Recommended to be superceded.**

(24) LARRS requests that the Applicant relocate the tank between Russian wildrye and Hill Pasture in Section 9. The Applicant has agreed to relocate the tank. **Recommended to be superceded.**

(25) LARRS requests an 1804 ft. vehicle underpass for access to highway tube and 3C Bend Pasture. The Applicant has agreed to provide a grade-separated crossing at this location.

Recommended to be superceded.

(26) LARRS requests that a well for 3C Bend and fish hatchery be provided. The Applicant has agreed to provide a non-electrified well at this location.

Recommended to be superceded.

(27) LARRS staff noted that they may need a well relocated if the track is too close in the Nursery area. Should the proposed action be constructed, a relocation of the well would be provided by the Applicant. However, under the Branum Lake option, the Nursery will not be affected or disturbed.

Recommended to be superceded.

Further discussion with LARRS personnel is expected, and it is likely that further detail and clarification will be required. This does not constitute a final easement agreement.

2.3. Impacts to the Miles City Fish Hatchery

Recommended to be superceded.

The Supplement to the DEIS presents a discussion of potential impacts to the Miles City Fish Hatchery. Since the issuance of that document, the State of Montana has completed further studies related to future development of the hatchery and adjacent lands. Expansion of the hatchery would conflict with the proposed routing of the Tongue River Railroad. It should be noted that acquisition of ROW across State of Montana property requires a formal application process that affords adequate safeguards and mechanisms to assure that the hatchery, either in its present form or after expansion, will not be adversely affected.

The proper forum for detailed mitigation plans and commitments regarding the hatchery will be the State of Montana easement application process. The state is fully empowered to delineate the terms or conditions under which it will allow a railroad ROW across state property.

(1) If the Branum Lake Option is built, it will require that the Fish Hatchery expansion plans be altered, either by moving a portion or all of the facility. In doing so, new plans will have to be prepared for the project. The Applicant should assist the Department of Fish Wildlife and Parks in the revised planning process, specifically as the new plans would focus on effects of the railroad on hatchery operations, e.g. noise, vibration, potential fuel leaks, etc.

(2) The Applicant should continue to confer with the Department of Fish,

Wildlife, and Parks in regard to expansion plans for the hatchery. Every effort should be made by both parties to inform the other as to continuing developments.

3.0 SOCIAL AND ECONOMIC IMPACT MITIGATION

3.1. General

The environmental documentation provides detailed information on those social and economic changes that are associated with development of the Tongue River Railroad. The projections contained in the documents cannot be expected to reflect perfectly every possible impact, but the data will serve to provide state and community planning agencies and personnel with the necessary information to meet the demands for increases in public facilities, personnel, and services.

Recommended to be superceded.

The environmental documentation demonstrates how, in most cases, the increase in tax revenues accruing to local governments will more than offset increases in the costs of providing increased services and new or expanded public facilities. Local government planning agencies will be able to incorporate this information in their short term and long range planning efforts, thus assuring that proper planning and effective mitigation will be in place prior to the incurrence of impact.

In certain cases, local government and, thus, planning capabilities do not exist in any form capable of addressing the problems that could be presented by the construction and operation of a railroad and accompanying mining development. The community of Ashland, in particular, is not prepared to confront the changes and problems that will occur there. Of particular importance to Ashland will be population growth in the community and the corresponding increased demand for community services.

Recommended as modified, see Chapter 7

The Applicant should consult with the county and local governments for the purpose of assisting impacted communities in addressing the problems they face. Among the goals of such an effort would be to:

(1) Assist the community of Ashland in developing a community organization representative of diverse opinion and point of view, for the purpose of addressing and dealing with railroad-related social and economic impacts.

Recommended, see Chapter 7

(2) Assist planning agencies and community groups in interpretation and understanding of the data developed in the environmental documentation. The ultimate goal of this task would be to make the information useful on an individual level for businesses and agencies. As the information is updated, for one reason or another, by state or federal agencies, the new information would be made available to these local

Recommended, see Chapter 7

groups.

(3) Assist planning agencies and community groups in identifying those resources available to them to help deal with anticipated impacts, and as a follow-up, to assist these groups in taking advantage of those resources as appropriate. A prime example of such a resource would be monies generated by the Montana Coal Severance Tax, administered by the Montana Coal Board. Numerous other resources and avenues of dealing with problems exist, and the individual would provide guidance in identifying same.

Recommended, see Chapter 7

To accomplish these goals, the TRRC will provide all practical assistance to those government planning agencies involved. Of primary importance will be making available the social and economic data generated in baseline studies. This should be quite useful if understood and practically applied by planning agencies.

Recommended, see Chapter 7

4.0 TRANSPORTATION IMPACT MITIGATION

4.1. General

Impacts to local transportation systems and facilities that will occur its a result of the development of the proposed Tongue River Railroad can be divided into two general categories. The first category is impacts that will occur during construction of the rail line. The second category is impacts that will result from actual train traffic over the line. Much of the mitigation that will occur for the anticipated impacts will result from ROW negotiations between the Applicant and private landowners or governmental agencies. Some of these anticipated impacts are discussed in the Land Use section, already presented. Most important in terms of this discussion are those impacts that will directly affect public roadways and other existing affected public roadways and other existing transportation systems.

Recommended to be superceded.

4.2. Construction Impacts

Construction-related impacts will generally involve either increases in vehicular traffic on local public roadways, with the attendant likelihood of greater inconvenience and increased likelihood of accidents, or direct disruption of normal traffic patterns due to construction activities across a road or highway.

Recommended to be superceded.

The Applicant could mitigate the problem of increased vehicular traffic on local public roads and highways by implementing the following measures during construction activities:

(1) During construction, contractors should be encouraged to provide transportation to the work site from some central location on a daily basis. This central location may be one of the work camps, a point near the northern terminus at Miles City, or some predesignated point

Recommended to be superceded.

elsewhere along the line, selected to prevent an unnecessary traffic on public roads in the area. Details should be worked out with contractors based on final design criteria, specific tasks or phase of construction, numbers of personnel and equipment and work site.

(2) To the greatest extent possible, all construct ion-related traffic, including worker transportation as well as equipment movement should be confined to the "pioneer road" that will be developed within the ROW. In instances where it is not practical to confine all traffic to this road, the Applicant or the individual contractors should make necessary arrangements with the appropriate landowners or agencies to gain access from private or public roadways which will minimize traffic impacts to the greatest extent possible. (The "pioneer" road would be used only during construction of the railroad grade and would be replaced by the grade prior to the placement of track).

Recommended to be superceded.

(3) All Applicant vehicles and equipment, and vehicles and equipment owned and operated by contractors working on the project, should strictly adhere to speed limits and other applicable laws and regulations when operating such vehicles and equipment on public roadways.

Recommended, see Chapter 7

(4) In cases where traffic along a public roadway may be disrupted during construction of the railroad, the Applicant should comply with all requirements of the Montana Department of Highways or other appropriate agency. In the absence of such requirements, the Applicant should endeavor to maintain at least one open lane of traffic at all times. Specific plans should be developed by the Applicant, and adhered to by contractors, to assure the quick passage of emergency vehicles. These plans should be coordinated through appropriate local agencies. All construction plans affecting public roadways will have to be submitted to the Montana Department of Highways for review and approval.

Recommended to be superceded.

(5) The Montana Department of Highways will provide various guidelines and stipulations for crossing such highways as Interstate 94 and U.S. 212. Maintaining normal traffic flows on these roadways throughout construction should be the principal goal of mitigation planning. When this is not possible, the Applicant should provide temporary detours and comply with mitigation measures required by state or local agencies.

Recommended as modified, see Chapter 7

(6) In those instances where the disruption of normal traffic patterns or the temporary blockage of important roads or highways is inevitable, the Applicant should work with the Montana Department of Highways or other appropriate agencies and the contractors to develop plans to time construction activities to coincide with periods of least impact. This may include such measures as working through the night time hours, or perhaps around the clock to speed construction in some locations.

Recommended to be superceded.

(7) All signing and work zone safety shall be in accordance with the Manual

Recommended to be superceded.

of Uniform Traffic Control Devices.

4.3. Operational Impacts

A significant impact from operation of trains along the new railroad line will be traffic delays at crossings which are not grade separated. Just as important, but less frequent, is the possibility of accidents involving trains and vehicles or pedestrians. To address that impact, the Applicant should undertake the following:

Recommended to be superceded.

(1) All grade crossings of the new rail line by public roadways should be equipped with warning signs and devices in compliance with current state and federal regulations, requirements and suggestions. To determine the appropriate warning devices for each new crossing, the policy for Railroad Crossing Protection of the Montana Department of Highways should be applied to each crossing, and the appropriate measures implemented.

Recommended to be superceded.

(2) A combination of Tongue River Railroad and BNSF traffic immediately downline from the connection at Miles City may require the elimination of certain at-grade crossings and their replacement with grade-separated structures. The Applicant should commit to working with BNSF, the Montana Department of Highways, and the Town of Miles City to alleviate any traffic problems in the future. Data developed by the Applicant and the commission on the eventual problem at crossings in Miles City could be used as a starting point in these discussions.

Recommended as modified, see Chapter 7

(3) The Applicant should adhere to all state and federal regulations regarding train operations. Such regulations provide for maximum durations of crossing blockage, speed limits within and outside of incorporated areas, candlepower for train lighting, etc.

Recommended as modified, see Chapter 7

It should be noted that the State of Montana RDW easement process discussed under 2.3 affords the opportunity to apply specific stipulations and requirements to the TRRC, thus safeguarding the public interest as regards traffic safety.

Recommended to be superceded.

5.0 AIR QUALITY IMPACT MITIGATION

5.1. General

Impacts to stir quality resulting from construction and operation of a new rail Line will fall into two general categories. These categories include: (1) the introduction of air pollutants in the form of the products of combustion, generated by construction equipment and railroad engines; (2) the generation of increased quantities of fugitive dust into the air as a result of devegetation, earth moving, general equipment operation, wind; and (3) increased vehicular traffic on unpaved roadways. Simple techniques are available

Recommended to be superceded.

to mitigate these impacts. Since these techniques are universally applicable, and it is not necessary to delineate those that will be used only during construction. The Applicant should commit to the application of the following measures, either as company operational policy or as stipulations for contractors during construction:

(1) All heavy equipment and vehicles used in the construction, operation, and maintenance of the railroad should be subjected to regular inspection and maintenance to ensure that operation is in compliance with manufacturer's specifications and that equipment is running as cleanly and efficiently as possible.

Recommended to be superceded.

(2) Strict speed limits should be established and adhered to on all access roads and within the ROW, to assure that fugitive dust emissions will be minimized.

Recommended to be superceded.

(3) The Applicant should recommend to the individual contractors that they provide group transportation (as discussed under transportation impacts) to minimize vehicular traffic on unpaved roads in the area.

Recommended to be superceded.

(4) When vegetation is removed from the ROW during the early stages of construction, the cleared areas should be kept to the minimum necessary. This will aid in the mitigation of the problems caused by wind erosion and vehicle borne fugitive dust.

Recommended to be superceded.

(5) In areas where devegetation has taken place, revegetation efforts should commence at the earliest possible opportunity. In those areas where immediate revegetation is not possible, alternative stabilization measures should be implemented. These measures could include matting, mulching, and even mulching with seed and fertilizer. (More details on revegetation are presented section 10.3 of this Master Mitigation Plan.

Recommended to be superceded.

(6) Dust suppression at all work areas within the RDW and at work camps, staging areas, etc., should be accomplished with the use of water trucks. Arrangements for the acquisition of water should be made with either local landowners, agencies or associations. It is anticipated that such activities would occur regularly and frequently during the driest periods.

Recommended to be superceded.

(7) Any open burning required for the purpose of slash disposal or for any other reason during construction or operation of the rail line should be conducted in strict accordance with local regulations. All necessary permits should be obtained and all necessary safety precautions observed.

Recommended to be superceded.

6.0 NOISE IMPACT MITIGATION

6.1. General

Recommended to be superceded.

Noise impacts that are likely to occur as a result of construction and operation of a new railroad fall into two distinct categories. The first category is noise associated with construction activities, heavy equipment operation, a variety of vehicular traffic, etc. The second category is the noise that will result from trains operating along the new rail line. Several mitigation strategies listed here can be employed to mitigate construction noise impacts. It should be noted that the level to which construction noise impacts will occur to sensitive receptors is dependent upon route selection and final centerline location. More specific measures will be apparent at that time. Mitigation of noise impacts from train traffic is difficult, and is dependent to some degree upon volume of traffic as well as volume of downline traffic of all types on the BN mainline. As a result, most of the measures suggested here would require negotiations between the Applicant and the BN for any final implementation.

(1) When feasible, all major noise-producing activities during construction should be scheduled

Recommended to be superceded.

to occur during the weekday and daylight hours.

(2) In cases where such activities as the normal school day would be interrupted by noise interference, the Applicant should make every attempt to schedule the activities in a manner most acceptable to those impacted. This could include weekend or evening work in some cases. If this is not possible, consultation with school officials may result in workable solutions. This concern is specific to the Ashland area and St. Labre school.

Recommended, see Chapter 7

(3) The Applicant should require all contractors to use internal combustion equipment only if properly installed mufflers are provided. Further, all equipment used for construction should comply with all applicable federal, state, and local noise regulations which reflect the current feasibility and practicality of equipment and activity noise reduction.

Recommended as modified, see Chapter 7

(4) During operation, Tongue River Railroad trains will have to observe standard regulations regarding speed limits in incorporated areas to limit noise impacts. The Applicant should observe those same speed limits while trains are passing through the unincorporated community of Ashland due to the proximity of numerous dwellings.

Recommended as modified, see Chapter 7

(5) The TRRC rail corridor extends through primarily rural and sparsely populated areas. Most of the dwellings in these areas are outside of the threshold for significant disturbance from noise. However, specific areas in Ashland and Miles City could experience interruptions from noise associated with TRRC trains. A, noise monitoring program should be established at these locations to measure the noise levels as train traffic increases during later years of operation. This information would assist the TRRC and community officials in developing noise abatement strategies as they are needed.

Recommended to be superceded

(6) In special cases, more direct noise abatement measures may be required. For example, the Applicant has agreed to provide a tree buffer between the Spotted Eagle Lake recreation area and the ROW. This buffer would serve the dual purpose of easing the impact of noise upon those pursuing recreational activities and also moderating the visual impact to that area. Similar measures may be required on certain private holdings along the ROW. These would be identified during negotiations between the individual landowners and the Applicant.

Recommended, as modified, see Chapter 7

7.0 SAFETY IMPACT MITIGATION

7.1. General

Recommended to be superceded.

The heading Safety Impacts encompasses several broad areas of potential impacts. The first consideration under this heading is the prevention of construct ion-related accidents. A second consideration is the public safety as it relates to such occurrences as derailments, fuel spills, other toxic material spills, and other catastrophic events. A third general category includes the prevention and suppression of railroad-caused wildfire. Concerns regarding the potential for and response to train/vehicle and train/pedestrian crossing accidents are also topics considered here.

7.2. Construction Safety

Adherence, to, normal construction safety practices will minimize the potential for construct ion-related accidents. All contractors should hold safety meetings for, their workers and assure that each person is cognizant of the safety measures and procedures expected in each work situation. Other 4;tipns which will enhance the overall safety situation include:

Recommended to be superceded.

(1) Contractors should be encouraged to provide group transportation to the job site, as discussed under that heading.

Recommended to be superceded.

(2) Speed limits for all construction vehicles and equipment, both on and out of the ROW, should be enforced

Recommended to be superceded.

7.3. Emergency Situations.

A variety of events here classified as “emergency situations” could occur along the ROW, during either construction or operation of the railroad. These include such things, as derailments, oil spills, and toxic substance spills. The Applicant should implement a number of general measures that can be used to initiate specific actions in response to emergency situations.

Recommended to be superceded.

(1) Planning Framework. The Applicant should develop an internal emergency, response plan, which is consistent with Montana State plans authorized under Title 10, Montana Code Annotated (MCA), in an effort to avoid duplication. Such plans could include:

Recommended to be superceded.

a. Emergency notification plan whereby a priority list of agencies and individuals to be notified in a specific emergency is prepared. The plan would include names and phone numbers of individuals to be contacted in case of such events as an herbicide spill fuel spill, range fire, and medical emergency.

b. Procedures to be followed by railroad operation and maintenance personnel in case of such an event, including specific responsibilities by individual.

c. Directions for most timely response and fastest emergency vehicular access to any particular section of the rail line.

d. Locations and inventories of all emergency equipment, and any standard operational equipment which may be useful in dealing with emergencies.

(2) Cooperative Planning/Contacts. The Applicant should establish cooperative relationships with all local and state agencies that have responsibilities for disaster/ emer3ency planning and response. The Applicant should provide operation plans and copies of the response plans noted in item (1) above to such agencies for review and suggestions. Comments from these organizations should be incorporated as necessary. These state and local agencies are to include, but are not limited to:

Recommended to be superceded.

a. Fire departments in Miles City, Broadus, Ashland, and other rural units along the route.

b. Local ambulance and emergency medical services, as well as air evacuation services in Billings.

c. Disaster and Emergency Services Division of the Department of Military Affairs, Helena. This is likely the most important contact in case of' a major emergency in terms of developing a coordinated response.

d. The Montana Department of Health and Environmental Sciences (especially the Water Quality Board).

e. The Montana Department of Fish, Wildlife, and Parks.

f. The Montana Department of State Lands, Land Administration Bureau.

g. The Montana Department of Natural Resources and Conservation, Water Resources Bureau.

h. U.S. Department of Agriculture, Fort Keogh Livestock and Range Research Station.

i. U.S. Bureau of Land Management or U.S. Forest Service (recent reorganization proposals may transfer local segments of the Custer National Forest to the BLM for management).

j. Other local agencies or groups which are identified as key to disaster.

(3) Fire Prevention and Suppression. The Applicant should develop a wildfire suppression and control plan for fires occurring on the ROW as a result of traffic or undetermined causes. The following considerations should be included in the plan.

Recommended to be superceded.

a. The plan should be developed after final engineering and overall operation plans are complete. This will afford planners the benefit of special information regarding exact location of centerline, access points, and equipment and personnel which might be of use in case such an event occurs.

b. State-of-the-art techniques for fire prevention and suppression should be evaluated and included in the plan as applicable. Where an industry-wide standard exists, it should be adhered to or improved upon.

c. During third phase engineering, the Applicant should attempt to provide the greatest possible access to all portions of the ROW, in terms of grade crossings and gates, in an effort to minimize response time. Certain areas adjacent to the ROW are more accessible than others. The Applicant should recognize topographic differences in providing access for emergency vehicles crossing the rail line. While there are no industry standards for determining the preferable distance between crossing points, it should be shorter in rougher terrain than it would be in more accessible areas. The Applicant should consult other railroads to ascertain the appropriate distance between access points.

d. Since the Applicant will be a significant taxpaying entity, it can be assumed that the emergency assistance of the various tax-supported fire districts will be an integral part of this plan [see item (2) above]. It should be noted, however, that many rural fire districts operate on a strictly volunteer, unfunded basis. In such cases, the Applicant should develop relationships with these local organizations for the purpose of implementing funding agreements. A formula should be established, based on criteria applied by other railroads in the region, to determine the amount of funding per group.

e. The Applicant should commit to all reasonable efforts to protect property, livestock, and the general public from damage due to Tongue River Railroad-caused fires. In addition, the Applicant

should make every effort to assure adequate access to all areas on all sides of the ROW. All serious concerns and suggestions should be explored for practicality, usefulness, economic considerations, etc.

f. The Applicant should observe all applicable operational regulations promulgated by the Federal Railroad Administration. This will also serve to minimize the potential for railroad-caused fires.

(4) Oil Spill Prevention and Control Plan. The Applicant should develop, in concert with the appropriate agencies and private concerns, plans to prevent spills of oil or other petroleum products, both during construction and operation and maintenance. The plans developed should include those stipulations that would be imposed on firms involved in construction of the rail line. An aspect of such plans would be the emergency notification procedures, discussed in item (1) above. Other items that would be included are:

Recommended to be superceded.

a. Procedures for reporting spills.

b. Definition of what constitutes a spill.

c. Methods of containing, recovering, and cleaning up spilled oil.

d. A list of needed equipment and locations of same.

e. A list of all agencies and management personnel to be contacted, as in item (2) above.

f. Assurances that techniques and procedures to be employed in cleanup are representative of the best technology currently available.

In addition to the items listed here, the stipulations to be followed during construction would be developed, in the form of guidelines based on the tasks to be accomplished by the individual contractors. Among the stipulations that could be employed are:

a. Care during refueling to guard against overflows.

b. Storage of fuel only in metal storage tanks surrounded by impervious dikes capable of containing greater than the capacity of the tank.

c. Removal of waste oil to appropriate sites, away from the ROW.

d. Keeping equipment in good running order and conducting routine maintenance activities at locations removed from the ROW.

Specifics of these plans should be discussed and refined with the appropriate agencies, and the plans should be in force at the start of construction.

(5) Toxic Materials Spills. It is not anticipated that the Applicant will be involved with the transport of toxic materials. This consideration is included to account for the possibility that herbicides may be accidentally introduced to other than the designated portions of the ROW. (See vegetation discussion of noxious weed control.) The same general approach discussed under items (3) and (40 above should be taken, with immediate notification of the appropriate agencies and personnel being given priority equal to immediate containment. Procedures should comply with the law, regulatory guidelines, and the best technology currently available. Application of herbicides is a licensed activity and is done under strict supervision, and as such, response should be nearly instantaneous.

Recommended to be superceded.

8.0 HYDROLOGY AND WATER QUALITY IMPACT MITIGATION

8.1. General

A wide variety of state and federal regulations and permit processes are in place to assure that overall water quantity and quality is not altered or diminished by activities such as the proposed Tongue River Railroad. Detailed permit applications are submitted to various agencies for the purpose of assuring that construction and operational activities on or near any waterways are conducted in such a manner as to provide minimal impact to those areas. Permit processes in which the Applicant is currently involved include:

Recommended to be superceded.

(1) U.S. Army Corps of Engineers "404" Permit process for all bridges and other structures occurring on designated streams (perennial). This process is required for each major bridge crossing of the Tongue River and Otter Creek as well as each area where rip-rap is to be installed. This process requires detailed environmental data as well as construction data. Permits are issued with accompanying stipulations to limit environmental impact to the greatest degree possible.

Recommended to be superceded.

(2) The "310" Permit process, jointly administered by the local Conservation Districts and the Water Quality Bureau of the Montana Department of Health and Environmental Sciences. This process is very similar to the "404" process previously discussed. Similar procedures for attaching

stipulations to a permit also are followed.

(3) Temporary Discharge or "Turbidity Exemption" permits are being sought from the Water Quality Bureau of the Montana Department of Health and Environmental Sciences. These permits are required wherever construction activities may cross any streambed or bank (ephemeral or perennial). In a result, each crossing of a streambed, dry or not, requires such a permit.

Recommended to be superceded.

(4) Since the State of Montana holds title to the stream bed of the Tongue River, the bridge crossing will require additional authorization under the easement application process. The regulatory authority of the state, administered by the Department of State Lands, will further safeguard the public interest and the affected resource.

Recommended to be superceded.

In addition to these very detailed permit processes, a number of other safeguards can be built into the final design of the rail line. Some of these include:

(1) All culverts and other drainage structures installed at ephemeral and perennial stream crossings will be designed to pass the projected 100-year flood.

Recommended to be superceded.

(2) Where possible, the proposed route is designed to avoid the flood plain. Where the railroad grade does infringe upon the flood plain, drainage structures should be installed to assure that the grade does not restrict or re-route the 100-year flood.

Recommended to be superceded.

(3) To prevent unnecessary degradation of water quality due to erosion, revegetation efforts should begin as soon as possible after construction is complete in a given area. (See revegetation section, 10.3.)

Recommended to be superceded.

(4) Spills of fuel or other toxic or hazardous substances which may affect water quality should be addressed in the manner described in the section on safety.

Recommended to be superceded.

(5) Construction of all stream crossings, including bridges and culverts and such activities as require stream bank encroachments (rip-rap, for example), should be timed to occur during periods of low or no flow in the streams affected. The vast majority of streambeds traversed by the railroad are dry most of the year, so such scheduling should not be difficult.

Recommended to be superceded.

Recommended to be superceded.

It also should be noted that a study has been conducted to determine the extent to which the Tongue River Railroad would constrict the floodwaters from a disaster such as a breach of the Tongue River Dam. The study shows that the railroad grade would, to

some extent, alter the inundation pattern, but would not lead to any increase in damages to humans, livestock or property. Further, it would not appreciably affect the disaster plans as discussed in the Tongue River Dam Emergency Warning and Evacuation Plan, published by the Montana Department of Natural Resources and Conservation.

9.0 AQUATIC ECOLOGY IMPACT MITIGATION

9.1. General

Impacts to aquatic resources from the proposed Tongue River Railroad are likely to occur only in those areas where the railroad grade directly infringes upon the stream bank or streambed. Such places include river crossings requiring bridge construction and areas where rip-rap is required for stream bank stabilization. In coordination with state agencies, primarily the Department of Fish, Wildlife, and Parks (MFWP), the Applicant should proceed with detailed, site-specific inventory work of potential impact sites, upon the completion of third phase engineering. Based upon the results of the work, specific mitigative measures can be determined and applied. The biologist conducting the work would be subject to the approval of MFWP personnel.

Recommended to be superceded.

(1) Aquatic Resource Sampling. For those locations where the proposed Tongue River Railroad would cross the Tongue River, or where extensive rip-rapping would occur, a three-part plan of study should be undertaken to identify aquatic resources. The results of the study would be utilized in the development of mitigation plans. The three-part plan of study includes: (a) a stream habitat survey to identify existing habitat features and values; (b) benthic macroinvertebrate sampling to identify community composition and numbers; and (c) fish spawning survey to determine the importance of the area to spawning of game fish.

Recommended to be superceded.

a. Stream Habitat Survey. The stream habitat survey should utilize methods described in "Methods for Evaluating Stream, Riparian, and Biotic Conditions."[4] Stream transects would be established in appropriate locations to evaluate existing conditions and to monitor changes during construction. Along each transect, the following variables would be measured:

Recommended to be superceded.

1. stream width
2. stream shore depth
3. stream average depth
4. pool (ft.)

[4] William S. Platts, Walter F. Megahan, and G. Wayne Minshall, "Methods for Evaluating Stream, Riparian, and Biotic Conditions,'' General Technical Report Int-138, Intermountain Forest Range and Research Experiment Station, Ogden, Utah.

(a) quality
(b) forming feature

5. riffle (ft.)
6. run (ft.)
7. substrate
   (a) boulder (greater than 12 inches)
   (b) cobble (12-2.5 inches)
   (c) coarse gravel (2.4-.5 inches)
   (d) fine gravel (.4-.1 inches)
   (e) sand
   (f) clay
8. stream bank soil alteration rating
9. stream vegetative stability rating
10. stream bank undercut and angle
11. vegetation overhang
12. embeddedness

b. Benthic Macroinvertebrates. Quantitative samples of benthic macroinvertebrates should be collected immediately upstream and downstream of each proposed location of disturbance. The collected specimens should then be counted and identified at least to genus and to species where possible. The composition of the community should be described.

Recommended as modified, see Chapter 7

c. Fish Spawning Survey. Several species of game fish spawn in the Tongue River, including sauger, walleye, channel catfish, smallmouth bass, and sturgeon. A game fish spawning potential survey should be conducted at each proposed bridge location as well as areas of proposed extensive rip-rapping. Sampling periods for the spawning survey would be early spring after ice breakup, after peak runoff, and in the fall. Collection methods would include electroshock, seining, trap netting, and fry sampling.

Recommended to be superceded.

(2) Mitigation Techniques. Once sampling has been completed and detailed data on the aquatic resource to be affected have been obtained, mitigative measures can be delineated. Some of the measures that could become necessary include:

Recommended to be superceded.

a. Preparation of a construction schedule which provides for instream work at those times least critical to the specific fishery or aquatic resource occurring at a site, as well as the period least conducive to sediment transport. Such periods differ by stream and species affected.

b. Developing special procedures for handling of displaced materials and petroleum products to prevent introduction of such materials

into the aquatic system. The procedures referred to here would be dictated by site-specific geographic and construction criteria.

c. Running silty water through settling pond systems when dewatering for footing construction is required.

d. Assuring that backfill at crossing and rip-rap sites is washed and essentially silt-free.

e. Double-shifting at crossing sites to minimize the duration of construction activities in or near stream banks.

It should be further noted that all sampling activities have been suggested by and would be coordinated with the Montana Department of Fish, Wildlife, and Parks. It is likely that MFWP personnel will be responsible for any electrofishing aspects of the inventory.

10.0 TERRESTRIAL ECOLOGY IMPACT MITIGATION

10.1. General

Two areas of concern are addressed under the overall heading of terrestrial ecology -- wildlife and vegetation. The thrust of the terrestrial mitigation plan will be to provide additional information and options for avoiding unnecessary impacts to vegetation and wildlife. All individuals conducting further wildlife or vegetation studies will be qualified individuals, as is the policy of the ICC. If necessary, these individuals will be approved by the MFWP.

Recommended to be superceded.

It should also be noted that the State of Montana has expressed an interest in the possibility of some form of compensation for habitat loss due to ROW construction. Through the Department of Fish, Wildlife and Parks, the State of Montana has suggested five additional areas that could be considered by the TRRC as part of final ROW negotiations with individual landowners. These are:

(1) The participation by the TRRC in the development of a "compensation" program for lost wildlife habitat along the rail line. Compensation could include the purchase by the TRRC of "cut-off" land parcels containing good wildlife habitat, and the donation of these lands to the Department of Fish, Wildlife and Parks for beneficial wildlife management.

Recommended as modified, see Chapter 7

(2) The construction of wildlife-related ponds adjacent to, or using the railroad grade as a dam. These could include "dugout" type ponds, and "bypass" ponds designed to be filled during high flows.

Recommended to be superceded.

(3) The providing of public access, in appropriate locations, along the rail line

Recommended to be superceded.

ROW.

(4) The granting of conservation easements by the TRRC along the rail line. Recommended, see Chapter 7

(5) Fencing that would not restrict the movement of big game animals wishing to cross the railroad ROW. Recommended as modified, see Chapter 7

Implementation of any of these measures would have to await ROW negotiations with affected landowners. Therefore, it is not possible or desirable to suggest adoption of any of the specific measures listed at this time. It should be noted that the State of Montana's regulatory authority over easements across state lands would provide a vehicle for addressing the DFWP's concerns.

The TRRC should work with the Montana Department of Fish, Wildlife and Parks to evaluate the feasibility of these actions. Some measures, such as conservation easements, public access, etc. might conflict with adjacent landowner wishes. Implementation of these measures, therefore, would have to be reasonable, practicable, and take into account the concerns of all parties.

10.2. Wildlife

The kinds and amounts of habitats that will be lost during construction of the Tongue River Railroad were identified in the environmental documentation. Avoidance by wildlife of normal use areas adjoining the construction site is considered to be a short term impact that will be mitigated by the completion of construction; wildlife will simply reoccupy those areas where their normal use patterns have been disrupted. Mitigation of other impacts, however, requires identification of those sites where impacts may occur. Once sites are identified, numerous mitigation techniques can be developed and applied to deal with specific cases. The following methods can be used to identify those sites: Recommended to be superceded.

(1) An updated aerial survey should be conducted during the winter before construction begins. An aerial survey may identify new winter ranges, as well as locate any new prairie dog colonies along the route. Recommended to be superceded.

(2) A thorough ground reconnaissance should be conducted between April 15th and May 15th. During this period, grouse leks will be active, raptors will be nesting, and winter ranges may still be identifiable. The entire ROW should be covered, preferably by walking. In some areas it will be possible to cover the ROW by vehicle, but much of the route will be accessible only on foot. Recommended to be superceded.

(3) The purpose of reconnaissance will be to locate IQ game winter range based on evidence, such as animal remains, hair, pellet groups, etc.; locate any prairie dog colonies that were not recorded during the aerial survey; Recommended to be superceded.

locate sage grouse and sharp-tailed grouse leks; and locate raptor nests, particularly golden eagles and prairie falcons. Evidence of threatened or endangered species, such as black-footed ferrets and peregrine falcons, would also be sought during the reconnaissance.

(4) Any specific use sites that are located during the reconnaissance should be mapped, described in field notes, and photographed. Nesting raptors should not be disturbed, but nests should be described as active or inactive.

Recommended to be superceded.

(5) Sage and sharp-tailed grouse leks should be located by listening for displaying males at dawn. Lek locations should be mapped. If possible, at count of the displaying males should be made. If lek sites are discovered later in the day after displaying has ceased and/or birds have left the site, the site should be revisited the following morning or as soon as possible.

Recommended to be superceded.

(6) Prairie dog colonies that are intersected by the ROW should be mapped to their approximate size on 1:24,000 USGS topographic maps. Following the field reconnaissance, the size of these colonies should be planimetered and a rough estimate of the existing population should then be made by comparison with results reported in the literature.

Recommended to be superceded

(7) Prairie dog colonies also should be searched for evidence of black-footed ferrets, following the methods outlined in "Handbook of Methods for Locating Black-footed Ferrets."[5] Ferret presence is most easily detected in late summer and during winter (December 1-April 15). The search along the Tongue River Railroad ROW should occur during the winter period, when evidence is most easily discerned.

Recommended to be superceded

Colonies affected by the right-of-way should be searched at least once and preferably three times. All colonies should be surveyed on foot, by walking transects spaced approximately 50 m apart back and forth across the colony. Any evidence of ferrets, such as digging, tracks, scats, skulls, etc., should be photographed and, where appropriate, collected. Scats and skulls should be identified following the keys in the "Handbook." If ferret evidence is found, the proper authorities should be notified following procedures of the Endangered Species Act.

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5. T.W. Clark, T.M. Campbell III, M.H. Schroeder, and L. Richardson, "Handbook of Methods for Locating Black-footed Ferrets," U.S. Bureau of Land Management, Wildlife Technical Bulletin No. 1 (1983), Cheyenne, Wyoming.

(8) Similarly, although it is highly unlikely that nesting peregrine falcons will be found along the ROW, any occurrence of nesting activity should be properly recorded and reported. Recommended to be superceded

10.2.1. Mitigative Measures

The TRRC should commit to implementing all reasonable and practical measures that result from studies conducted during third phase engineering. These may include some of the following measures: Recommended to be superceded.

(1) Construction Timing. The primary method of impact mitigation for wildlife is timing construction activities. All reasonable attempts should be made to avoid construction at big game wintering sites from December through March. Recommended to be superceded.

(2) Fawning Sites. Timing of construction may be less effective in mitigating disturbance at "fawning sites," because this term cannot be consistently applied to a given geographic location. That is, a site where deer or antelope fawns are born in one year may not be used in the following year. Recommended to be superceded.

Most fawns are born during the period May 15 - June 30. Late in the reconnaissance period, any single female deer or antelope that are observed should be assumed to be at or near a potential fawning site. The locations of these individuals should be mapped. On an individual basis, it may be possible for construction activities to avoid these sites during the fawning period. However, if construction cannot be delayed, the resulting impact (displacement (of pregnant females to another location) should not significantly affect these species.

(3) Black-footed Ferrets. If black-footed ferrets or their evidence are found in any affected prairie dog colony, appropriate regulatory authorities should be consulted. It will probably be necessary to examine these sites on several occasions to determine whether or not ferrets are currently present in the colony. If a ferret population is present, the proper authorities should be consulted to determine the probable long term impact to ferrets if construction proceeds through the colony. Since ferrets are primarily nocturnal and may not be particularly disturbed by human presence, it may be possible to time construction activities during the day when ferrets are least active. Recommended to be superceded.

(4) Raptors. It is highly unlikely that eyries of the endangered peregrine falcon or bald eagle will be encountered along the ROW. If such nests are found, the appropriate authorities should the contacted. Any active golden eagle or prairie falcon eyries located during the reconnaissance Recommended to be superceded

should be mapped. If the ROW passes adjacent to such eyries, construction in the affected area should be timed to avoid the critical incubation and early rearing period (April 1-June 30).

10.3. Vegetation

Vegetation concerns related to the Tongue River Railroad are primarily divided into two categories, reclamation and noxious weed control. Reclamation of devegetated areas is important for a variety of reasons, including the prevention of erosion, limitation of air pollution by fugitive dust, contribution to the stability of the railroad grade, and the importance of providing wildlife habitat. Noxious weed control is an area of great concern to local agricultural operations and should be a priority of Applicant operation and maintenance personnel.

Recommended to be superceded.

(1) Reclamation. Reclamation or revegetation of the ROW should commence at the earliest possible time after clearing has been completed. In most cases, such revegetation cannot begin until construction is complete. But, wherever possible, it should be expedited. The following are general concerns and practices that should be employed in the process:

Recommended to be superceded.

a. Preconstruction Planning. Successful reclamation begins with thorough preconstruction planning. Elements of such planning should contain the following:

Recommended, see Chapter 7

1. Designation of sensitive areas.
2. Proposed time schedule of construction activities.
3. ROW clearing and site preparation plans.
4. Erosion and sediment control plans.
5. Waste disposal plan.
6. Restoration, reclamation, and revegetation plan.

b. Restoration/Reclamation Plan. Elements of an adequate restoration and reclamation plan include:

Recommended to be superceded.

1. Starting reclamation immediately after construction ends, with the goal of rapidly re-establishing ground cover on disturbed soils, with all cut and fill slopes mulched and seeded as they are completed.

2. Avoiding reclamation when soil moisture is high or ground frozen.

3. Analyzing site soil requirements and seasonal precipitation

patterns to identify planting dates for optimal revegetation success.

4. Use of rapidly establishing plant species for thorough and rapid ground surface protection.

5. Providing a reclamation specialist to determine specific procedures for arias with reclamation problems such as on steep slopes or locations near waterways.

c. Revegetation Success Assurances. To ensure revegetation success, the following measures should be taken:

Recommended as modified, see Chapter 7

1. Determination of type and quantity of seed, kind of fertilizer, and other soil amendments based on soil chemical and physical properties should be made, with emphasis on native species where possible.

2. Topsoil should be segregated from subsoil and stockpiled for later application on the reclaimed ROW.

3. Only seed of registered quality and germination success should be utilized.

4. Appropriate seeding techniques should be used, such as drill seeding on level terrain and broadcast or hydroseeding on slopes to ensure distribution of seed mixture on individual microenvironments.

5. The Applicant should use mulch material, such as straw and woodchips, as a temporary erosion measure and to minimize soil temperature fluctuations and soil moisture loss. Mulch should be applied more heavily on slopes than on level terrain and nitrogen levels adjusted to reflect the increased demand during mulch decomposition.

6. The seeded area should be covered and compacted following seeding.

7. A minimum of 20 lbs./acre of pure live seed should be used throughout the route.

8. For slopes and construction areas near waterways, a variety of methods including sediment raps, berms, slope drains, toeslope ditches, diversion channels, sodding, and

mulching should be used.

9. Reclamation should be monitored, and regrading eroded surfaces and revegetating areas not successfully reclaimed should be undertaken.

d. Provisions for Areas of Special Concern

Recommended to be superceded.

1. Stream Crossings. Banks should be stabilized with naturally occurring trees, shrubs, and grass. Riprap or gabions should be used only as a supplement or where such methods would improve fish habitat, or in cases where engineering -requirements so dictate.

2. Construction Sites. All litter, debris, and soils associated with petroleum spills should be removed prior to reclamation. An approved landfill may be used.

3. Slopes Greater Than 3:1. On cut and fill slopes steeper than 3: 1 but less than 2:1, serrations should be code parallel to the slope to act as stable seed beds and sediment traps. Mulching and seeding should be conducted using hydroseeding/mulching equipment. Every attempt should be made to minimize foot traffic on the reclaimed slopes until vegetation is well established.

(2) Noxious Weed Control. The first step in the control of noxious weeds is reclamation of disturbed land along the railroad construction corridor before use by the railroad. This will limit bare soil required for optimal weed colonization. Following establishment of revegetation species and coincident with the beginning of rail transport, a noxious weed control program should be implemented. This program is intended to control all Montana's designated noxious weeds. It is not intended to control invader grass species.

Recommended to be superceded.

The program should consist of a spray program using 2-4D at one pound per acre beginning June 1st and at monthly intervals until late September. "Ws formulation should be used on all areas of the ROW except near waterways, where Weedar 64 (a nontoxic form of 2-41) amine) should be substituted. The spray sequence has been chosen to ensure that weed plants do not reach maturity and therefore seed dispersal before being eradicated by the herbicide. All precautions normally used around herbicides should be followed and it is recommended that 2-41) amine, rather than 2-4D ester, be used because of its lower volatility. Records of application dates should be kept and referenced to ensure that program goals are fulfilled.

All activities should be conducted according to applicable regulations and guidelines, and should be coordinated with local weed control districts. In all cases, only trained, licensed, personnel should be involved in applications. Coordination with local ranchers would be an acceptable element of the overall plan, at the request of those individuals.

The Applicant should work with the local weed control districts to establish schedules for herbicide applications. In establishing the schedule, a provision should be made that, if the Applicant does not apply the measures by an agreed date, the weed control district would have the authority to implement the appropriate measures and to be reimbursed by the Applicant for those efforts.

(3) Threatened and Endangered Plant Species. As of 1984, a document prepared by the Montana Rare Plant Project and titled Vascular Plants of Limited Distribution in Montana contains listings of plants that are currently or likely to become legally protected.[6] As a result of this effort, species that might occur in southeastern Montana have been identified. During the course of other activities, biologists will be aware of potential habitats for the species listed in the document cited. If examples of any such species are encountered, appropriate actions will be determined through consultation with governmental authorities.

Recommended to be superceded.

11.0 CULTURAL RESOURCES IMPACT MITIGATION

11.1. General

Construction of the Tongue River Railroad will have an effect upon cultural resources (historic, prehistoric archeological, and architectural) that may be on or eligible for nomination to the National Register of Historic Places (NRHP). After selecting and surveying an alignment, but prior to the initiation of third phase engineering, a Memorandum of Agreement (MOA) should be developed in consultation with appropriate authorities.

Recommended to be superceded.

The (MOA) would detail: (1) the survey boundaries and methods to be followed in conducting an intensive pedestrian survey of the alignment; and (2) the steps and plans to be followed in treating cultural resources that are determined to be eligible for listing on the NRHP and that may be adversely impacted by the construction and operation of the railroad. The (MOA) should take into account, but not be restricted by, the guidelines set forth in Section 106 and 110f of the National Historic Preservation Act (16 U.S.C. 470) and its implementing regulations, "Protection of Historic and Cultural

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[6] P. Lesica, G. Moore, K.M. Peterson, and J.H. Rumely, "Vascular Plants of Limited Distribution in Montana," Monograph No. 2, Montana Academy of Sciences, Supplement to the Proceedings 43(1984):11-12, 18, 21.

Properties" (36 C.F.R. 800).

During the preparation of the environmental documentation for the proposed railroad, a number of cultural resources were tentatively identified. A preliminary determination of eligibility was node for each site. The pedestrian survey conducted according to the terms of the SIIAP would provide the TRRC with more complete information about the presence of cultural resources in the study area. Utilizing the SIIAP, the Applicant should provide the following information regarding cultural resources:

(1) Identification. The pedestrian survey should accurately locate all historic, prehistoric, and architectural sites located within the ROW and buffer area. In addition to locating all cultural resources, Applicant should photograph each site, prepare site maps and written descriptions, and document the development of each site, based on records research and oral interviews.

(2) Evaluation. Each cultural resource site should be assessed using the criteria for evaluation (36 C.F.R. 60.6) to determine whether the site meets the eligibility requirements for listing on the NRHP.

(3) Impact Assessment. Based on the above evaluations, the Applicant, in consultation with appropriate authorities, should determine whether eligible cultural resource site-~ will be impacted, directly or indirectly, by construction and/or operation of the railroad.

(4) Mitigation. The SIIAP should contain 11 detailed procedure that should be followed if an eligible cultural resource site will be adversely impacted by the construction and/or operation of the railroad. The mitigation measures should include but not be limited to those set forth in the ACHP's "Manual of Mitigation Measures (MOMM)."[7]

The Applicant should prepare a cultural resource technical report that will detail the results of the field survey. The report should contain information on all sites identified, an evaluation of each site, and a recommendation for further work on all eligible sites that may be impacted during construction and/or operation of the railroad. The report also should contain recommendations for mitigating impacts to each site.

12.0 SUMMARY

[7] Department of the Interior, National Park Service, Advisory Council on Historic Preservation, "Manual of Mitigation Measures (MOMM)," October 12, 1982.

The successful mitigation of impacts associated with the Tongue River Railroad will require cooperation and coordination among a wide variety of individuals, state and federal agencies, and local governments. A complex body of regulations applies to most aspects of construction and operation of such a project. In order to comply with the regulatory requirements imposed upon the Applicant, it may become necessary to adjust non-regulated aspects of the suggested mitigation procedures. It is safe to assume that certain conflicting mitigation concerns will occur. In such cases, it is important that lines of communication be maintained between all parties.

Recommended to be superceded.

A number of tasks remain to be accomplished in terms of development of the Final Mitigation Plan. Most of these tasks are presently constrained by the permitting process itself, but will be accomplished once a decision to proceed is made. These tasks include, but are not limited to:

(1) Individual ROW negotiations with landowners, to include site-specific mitigation provisions.

(2) Easement negotiations with the U.S. Department of Agriculture for the ROW through LARRS, to include detailed mitigation stipulations.

(3) Easement: negotiations with the Montana Department of State Lands, the Montana Department of Fish, Wildlife, and Parks, and the U.S. Bureau of Land Management for ROW across lands under the control of those agencies. It is assumed that numerous site-specific mitigation stipulations will be included in resulting agreements.

(4) Development of a detailed construction traffic control plan.

(5) Development of construction mitigation stipulations to be required of all contractors providing services to the Applicant.

(6) Conduct field studies of impacted aquatic habitat.

(7) Conduct field wildlife surveys.

(8) Develop site-specific revegetation and weed control plans.

(9) Develop cultural resources management plans.

Where the specific requirements of these various planning instruments come into conflict, certain priorities must be established to resolve differences. In all cases, regulatory requirements should take precedence over matters of convenience, either to the Applicant or to other parties. In cases where the public health or welfare is at issue, such concerns should take precedence over matters of economic, spatial, or temporal convenience.

[7] LARRS staff have assumed responsibility for electrifying these and other wells, should they so desire.

SUPERCEDED MITIGATION CONDITIONS

TONGUE RIVER I

Condition 1.0: INTRODUCTION

Environmental impacts associated with the construction and operation of the Tongue River Railroad are discussed in the environmental documentation prepared for this proceeding. Numerous suggested mitigation measures to be applied to avoid or lessen impacts are also presented in the documentation. It was recognized, during preparation of the Draft Environmental Impact Statement (DEIS), that final and more specific mitigative measures would have to await comments on the DEIS and testimony at the proceedings. With these aspects of the proceedings now completed, it is appropriate to consider specific mitigative measures that can be applied in this case. The purpose of this Master Mitigation Plan is to provide a more definitive framework for mitigation planning and to provide ultimately for the just compensation of economic and environmental loss due to the Tongue River Railroad Company (TRRC).

The plan is divided into various sections, conforming to the topics discussed in the environmental documentation. Potential impacts and suggested mitigative measures are discussed for each discipline. It should be noted that many of the topics presented during the proceedings relate to site-specific concerns of individual landowners. To the extent that these issues relate to environmental matters, they are discussed in this document. However, the Section on Energy and Environment *(SEE)* recognizes that many of the site-specific concerns will be the topics of negotiation between the Applicant and affected landowners.

The Section of Energy and Environment emphasizes that this plan is not the only method available to protect the interests of the affected landowners or other affected parties. Many of the specific mitigation measures mentioned in the hearings and in comments on the draft mitigation plan are subject to negotiations for right-of-way purchase or easements. The State of Montana's (concerns have been addressed in this document. However, the State retains the right to expand these mitigation measures in granting easements across state lands.

Similarly, the areas subject to landowner/railroad negotiations have been identified in this and other documents and mechanisms have been suggested to facilitate right-of-way discussions. Montana statute protects the integrity of those negotiations. Montana law provides for the appointment of qualified, disinterested condemnation commissioners, should right-of-way negotiations between the parties be unsuccessful. The commissioners are required to assess compensation at current, fair, market value (MCA 70-30-207, 70-30-302). There is significant latitude available to the commissioners to provide compensation to the affected landowners to cover direct acquisition of land, severance, and depreciation

damages for non-contiguous lands.[1]

A combination of provisions outlined in this mitigation plan and the negotiation process, protected by Montana law, will place the affected landowners on strong footing with regard to addressing the environmental impacts to their property.

Reason Superceded: This general introduction does not contain mitigation conditions and is unnecessary.

Condition 2.0: LAND USE IMPACT MITIGATION

Land use impacts can be divided into three groups for mitigation purposes:(1) impacts to agricultural operations; (2) impact to the Livestock and Range Research Station (LARRS); and (3) impacts to the Miles City Fish Hatchery. Many of the procedures and measures implemented under this topic will be useful under other disciplines, as well. As a result, Land Use is considered to be of primary importance in terms of both impact and mitigation. This is underscored by the primacy of agriculture as the regional land use and economic base, not only for the Tongue River/Otter Creek area, but on a regional and statewide basis. It should be noted that the level of specificity varies in terms of mitigation suggested for the three groups listed here. This is due in part to the varying requirements placed on the applicant by federal law.

The LARRS is federal property and subject to Department of Agriculture easement procedures and requirements. TRRC's easement application for the proposed crossing of LARRS was filed with the Department of Agriculture in January 1985. The application for an easement across the facility constitutes an independent permitting process and requires the level of detail presented in this Draft Master Mitigation Plan. Similar efforts will be undertaken with the State of Montana when easement applications are filed with the Department of State Lands and the Department of Fish Wildlife and Parks. The same specificity will undoubtedly result from negotiations with the 39 individual ranchers along the proposed right-of-way (ROW). As previously noted, that negotiation process is subject to provisions in Montana law concerning eminent domain. At this point, it would be inappropriate to bind either the railroad or an individual landowner to detailed measures that either party might want to change at some future date.

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

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[1]Meagher County Newlan Creek Water District v.Walter,169 M 358, 547 P2d 850 (1976); State Highway Commission v. Renfro, 161 M 251, 505 P2d 403 (1973); State v. Hoblitt, 87 M !03, 288 P 181 0930).

Condition 2.1.1: LAND USE IMPACT MITIGATION, Agricultural Operations, General

The major goal of all mitigation measures directed at individual agricultural operations should be to minimize the effect of the railroad on day-to-day operations of the existing ranches. The negotiations and planning process should focus on the following objectives:

(a) Maintaining the integrity of each operation as an independent agricultural enterprise.

(b) Maintaining the economic vitality and productivity of each operation at levels generally approximating the current situation.

(c) Developing and implementing measures which will preclude the necessity for significant time/labor increases due to the existence of the railroad.

(d) Identifying parcels which will no longer be economically viable for present uses, and developing alternative uses or appropriate compensation.

(e) Implementing measures to limit or preclude nuisance impacts of the railroad.

With these goals in mind, the Applicant should undertake negotiations with individual landowners during acquisition of the ROW. By law, the Applicant will be required to negotiate in good faith with the individual landowners. Firm commitments as to the specific measures to be taken to attain the above-stated goals will be made and documented by the parties. Areas of concern that should be addressed include, but are not limited to, the following items.[2]

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 2.1.1(1): LAND USE IMPACT MITIGATION, Agricultural Operations, General

Direct and Indirect Land Loss. Each agricultural operation that is crossed by the

[2]These areas of concern have been identified through review of the comments on the Draft EIS and supplement thereto, review of testimony delivered at hearings, and consultation with NPRC staff members. NPRC's suggested mitigation recommendations were attached to its post-hearing brief as Appendix 4

Tongue River Railroad will experience some loss of agricultural land due to inclusion in the ROW. The mitigation for such loss is direct compensation. This compensation is properly negotiated on an individual basis between each landowner and the Applicant.

Indirect land loss, due to severance of parcels, will also occur in certain situations. The standards to be used in assessing that indirect loss will differ by landowner, and landowners will be given the opportunity to identify severed parcels in negotiations. It is possible to use some severed parcels for alternate agricultural purposes, thus mitigating to some extent the total loss. The Applicant should assist landowners in identifying and developing such uses where appropriate, and in applying a combination of such assistance and compensation, where necessary and agreed upon during ROW negotiations.

Reason Superceded: The same basic measure was adopted in Tongue River II (subsequently referred to as "TRRC II") as Land Use Mitigation Condition No. (1). SEA proposes using the language from TRRC II because it is more succinct and allows the private negotiations between TRRC and the landowner to resolve the issue, as is appropriate.

Condition 2.1.1(2): LAND USE IMPACT MITIGATION, Agricultural Operations, General

Displacement of Capital Improvements. Where capital improvements such as fences, wells, corrals, and irrigation systems are displaced, the Applicant should relocate or replace these improvements where possible. Generally, these capital improvements can be replaced. In some instances, it may be necessary to provide compensation for such displacements. Specifically, fences should be reconstructed according to the design specifications previously existing on the ranch or to specifications requested by the landowner and agreed to during negotiation. Where parcels have been redesigned, the Applicant should erect new fences to conform to the redesigned pasture parcel. Similarly, corrals, haysheds, etc., should be relocated within the redesigned land parcels.

Where wells and springs are displaced, the Applicant should replace the existing improvements to the current standard. For instance, every effort should be made to assure the continued use of natural springs. Often, this can be accomplished by the installation of culverts of proper design and location. In instances where a well is displaced, the Applicant should construct a new well and insure that there will be no additional cost to the rancher for the operation of that well beyond the cost incurred with the previous well.

Where irrigation systems, whether they be gravity or mechanical, are disrupted or displaced, the first goal of the Applicant should be to assist the landowner in redesigning the system in order to continue its current use. For instance, culverts should be installed and ditches reconstructed for gravity systems. For sprinkler systems and other

mechanical devices, all attempts should be made to substitute a redesigned system. Where this is not possible, the Applicant should negotiate with the landowner for a combination of compensation and reuse of the parcel for some other purpose.

Reason Superceded: The same basic measure was adopted in TRRC II as Land Use Mitigation Condition No. (2). SEA proposes using the language from TRRC II because it is more succinct.

Condition 2.1.1(3): LAND USE IMPACT MITIGATION, Agricultural Operations, General

ROW Fencing. The Applicant should construct ROW fencing along the entire line according to specifications most suitable to the landowners and consistent with industry standards. If special fencing needs or specifications are requested on individual ranches, it will become a matter for negotiation. Likewise, if, in some cases, landowners would prefer to forego fencing of the ROW in order to provide easier access for livestock across the rail line, the Applicant should consider such a request. It should be noted that such a request could be honored only after matters of safety and liability are considered.

Reason Superceded: The same basic measure was adopted in TRRC II as Land Use Mitigation Condition No. (3). We propose using the language from TRRC II because it is more succinct and allows the private negotiations between TRRC and the landowner to resolve the issue, as is appropriate.

Condition 2.1.1(4): LAND USE IMPACT MITIGATION, Agricultural Operations, General

Access Restrictions. The Applicant has tentatively identified 77 cattle passes that would be installed along the ROW. These cattle passes would consist of an oval, corrugated metal structure, roughly 12 ft. high and 11.5 ft. wide at the base. The proposed locations for these cattle passes were developed by the engineering consultants, using aerial photography, on-the-ground inspection, and information from individual landowners. The locations of these cattle passes were indicated in second phase engineering plan and profile sheets, which were provided to the individual landowners for comment. The Applicant should work with landowners during third phase engineering and ROW negotiations to identify the locations of any additional cattle passes and to finalize the placement of those previously identified. In addition, locations for grade crossings for equipment, etc., will also be determined through negotiations and engineering practicality.

In some cases, landowners may prefer a different type of cattle pass than that currently proposed by the Applicant, e.g., box culvert, trestle, etc. Recognizing that

different types of cattle passes could be far more costly than those currently proposed, the Applicant should work with the individual landowners to develop an acceptable alternative. For instance, one alternative might be to install a trestle-type structure in lieu of two or three corrugated metal culverts. In such a case, the cost of the trestle could be basically the same as the culverts, and thus an acceptable compromise. In other instances, such as where the placement of a cattle pass is not feasible from an engineering standpoint due to an extensive cut, the Applicant should discuss with the landowner the possibility of a bridge over the railroad to provide access for cattle.

Reason Superceded: The same basic measure was adopted in TRRC II as Land Use Mitigation Condition No. (4). SEA proposes using the language from TRRC II because it is more succinct and allows the private negotiations between TRRC and the landowner to resolve the issue, as is appropriate.

Condition 2.1.1(5): LAND USE IMPACT MITIGATION, Agricultural Operations, General

Impacts During Construction. During third phase engineering, the Applicant should work with individual landowners to avoid unnecessary conflict between construction-related activities and ranching operations, such as moving cattle between pastures during certain seasons of the year. However, it is recognized that inconvenience to the ranchers cannot totally be avoided if a construction schedule is to be maintained. Temporary inconvenience to the rancher from construction-related activities should be considered during ROW negotiations.

All construction-related activities should be confined to the purchased or leased ROW, and to the construction camps located along the rail line. The specific location of construction camps should be solely a matter of negotiation between individual landowners and the Applicant.

Construction of the rail line will require bonding for Applicant's contractors. In the event of contractor-caused damage to a landowner's property, lengthy negotiations between the individual landowner and the contractor's bonding agent could ensue. In order to speed this process of negotiation, the Applicant should require its contractors to place sufficient funds in an escrow account to pay for incidental damages incurred during construction. Payment could be advanced from this fund, pending resolution of any liability on the part of the contractor for the damages incurred. Specifics of such a plan, including definitions of liability, would have to be negotiated between the parties, ICC, TRRC and affected landowners, prior to construction.

The Applicant should require its contractors to police construction camps during operation, to control the personnel in camps, and limit those personnel to workers directly involved in the project. Upon completion of construction, the camps should be reclaimed to their previously existing use.

The Applicant should appoint a railroad representative to work with the prime and subcontractors and the landowners to resolve any problems developing during construction. This individual should have direct access to the management of the Tongue River Railroad Company.

Reason Superceded: The same basic measures were adopted in TRRC II as Land Use Mitigation Condition Nos. (5)-(8). SEA proposes using the language from TRRC II because it is more succinct and allows the private negotiations between TRRC and the landowner to resolve the issue, as is appropriate.

Condition 2.2.1: LAND USE IMPACT MITIGATION, Impacts to Fort Keogh Livestock and Range Research Station (LARRS), General

The potential impacts to LARRS have been explored in detail, both by the ICC's consultants and by LARRS personnel. LARRS personnel have taken an active role in development of the proposed route in coordination with the Applicant's engineers. In addition, LARRS personnel have examined the proposed route in detail and have developed a series of mitigation needs and procedures that were submitted to the Applicant. Those measures to which the Applicant has committed are included here. It is expected that these and other mitigation measures will be attached to a final easement agreement for ROW across the facility.

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 2.2.2: LAND USE IMPACT MITIGATION, Impacts to Fort Keogh Livestock and Range Research Station (LARRS), Specific Mitigation Concerns and Resolutions

(1) LARRS has requested a grade-separated crossing for primary access to the southeast portion of the station. Access is currently obtained through a box-type culvert beneath U.S. Interstate 94. The alignment, as detailed in the proposed Branum Lake Option, calls for crossing under I-94. If this option is utilized, the Applicant will provide a non-blocked, grade-separated crossing from LARRS to insure adequate access to the southeast portion of the station. The Applicant is currently exploring the possibility of bridging over I-94 at this point. If this plan is feasible, then existing access would not be affected or altered by the railroad.

(2) LARRS has requested that sufficient flood drainage be provided north of the Camel's Back. The Applicant will provide drainage with culverts designated to pass 100-year design floods.

(3) LARRS has requested that a grade-separated crossing be located on the Burlington Northern Railroad (BN) ROW adjacent to the LARRS headquarters

facilities. The Applicant has agreed to provide a grade-separated crossing at this location.

(4) LARRS has requested two wells in the No. 3 pasture. One well is located in Section 13 and the other in Section 12. The Applicant has agreed to construct two new, non-electrified, wells or one non-electrified well and a pipeline, whichever is most appropriate.[3]

(5) LARRS has requested two railroad crossings in the No. 3 pasture. Underpasses would be desirable; however, crossings over the track would work. One is located from Section 13 to 18 and the other from Section 12 to 7. A road (all weather) from the Section 12 to 7 crossing along the track to Section 18 would also work. The Applicant has agreed to provide at least one separated grade crossing. The other crossing would be at grade.

(6) LARRS has requested rip-rapping along the river in Section 6 in the 2C Bend pasture, if necessary. The Applicant plans to provide all necessary rip-rapping to insure the integrity of the railroad embankment.

(7) LARRS has requested an underpass for cattle movement in Section 6. The Applicant has agreed to provide this underpass.

(8) LARRS has requested a vehicle pass (18x14 ft.) in Section 36 near the existing road to allow access to Lower 2C Bend. The Applicant has agreed to a cattle underpass and an at-grade crossing for equipment at this location.

(9) LARRS requests a track crossing for equipment where the track crosses Paddy Fay Creek. This concern should be resolved by Applicant's commitment to construct a bridge at Paddy Fay Creek.

(10) LARRS requests an access road along the river from Section 23 (Lower Flood) to Section 25, 25 and 36 (2C Bend). The Applicant has agreed to provide a road parallel to the railroad ROW for access.

(11) LARRS requests that the Applicant relocate the water tank and pipeline in Lower 2C Bend and locate a new tank in the north end of Lower 2C Bend. Applicant has agreed to relocate the existing water tank as well as to locate a new tank in the north end of Lower 2C Bend.

(12) LARRS requests that the proposed alignment be located as close to the hill between Upper and Lower 2C Bend as possible to eliminate the waste land. The alignment submitted to the ICC in June 1983 incorporates this suggestion and is

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[3] LARRS staff have assumed responsibility for electrifying these and other wells, should they so desire.

incorporated as the Applicant's proposed action.

(13) LARRS requests rip-rap along the river in the North Tongue River Bend. The Applicant has agreed to rip-rap along the river in the North Tongue River Bend, and has initiated 404 applications for this site with the U.S. Army Corps of Engineers.

(14) LARRS requests that the TRRC relocate the well in North-South Tongue River fence line to water both pastures. The Applicant has agreed to relocate this well.

(15) LARRS requests a vehicle underpass 18 ft. wide by 14 ft. high on the road from Lower Flood to North Tongue River Bend. After considerable discussion with LARRS, it was determined that a cattle pass under the tracks with an equipment crossing "at grade" with the tracks could be used in place of the 18 x 14 ft. underpass.

(16) LARRS requests that the Applicant relocate the well between Lower Flood and Lower Flood Bend. (Pipeline system to serve Lower Flood, Lower Flood Bend, South Lower Flood Bend, and Middle Flood.) The Applicant has agreed to relocate the well between Lower Flood and Lower Flood Bend.

(17) LARRS requests that the TRRC relocate the fence between Lower Flood and Lower Flood Bend pastures. The Applicant has agreed to relocate the fence.

(18) LARRS requests that the Applicant place culverts under the track through Lower Flood to accommodate the flood dike system. Applicant has agreed to place culverts under the trackage through the Lower Flood area which will accommodate the flood dike system.

(19) LARRS requests a road along the east side of Hill pasture, and a vehicle pass to North Tongue River pasture. The Applicant has agreed to these requests.

(20) LARRS requests a vehicle pass by old Lone Pine road to access Lower Flood Bend. The Applicant has agreed to construct a vehicle pass adequate for pickups and cattle, with an at-grade crossing for larger equipment.

(21) LARRS requests that, where the railroad meets and removes the all-weather road in Hill Pasture, provisions for new road be provided. The Applicant has agreed to replace this road.

(22) LARRS requests that an underpass be provided where the railroad crosses the gravel road in Hill Pasture. The Applicant has agreed to provide a grade-separated crossing.

(23) LARRS requests that a well be located in Hill Pasture to replace pit reservoir. The Applicant has agreed to provide a non-electrified well.

(24) LARRS requests that the Applicant relocate the tank between Russian wildrye and Hill Pasture in Section 9. The Applicant has agreed to relocate the tank.

(25) LARRS requests an 18x14 ft. vehicle underpass for access to highway tube and 3C Bend Pasture. The Applicant has agreed to provide a grade-separated crossing at this location.

(26) LARRS requests that a well for 3C Bend and fish hatchery be provided. The Applicant has agreed to provide a non-electrified well at this location.

(27) LARRS staff noted that they may need a well relocated if the track is too close in the Nursery area. Should the proposed action be constructed, a relocation of the well would be provided by the Applicant. However, under the Branum Lake option, the Nursery will not be affected or disturbed.

Further discussion with LARRS personnel is expected, and it is likely that further detail and clarification will be required. This does not constitute a final easement agreement.

Reason Superceded: TRRC and USDA have entered an agreement which provides TRRC access to the proposed ROW crossing the LARRS facility. USDA has informed TRRC that it would like to modify the existing mitigation conditions in TRRC I relating to the LARRS crossing and that USDA is in the process of preparing new mitigation conditions that would apply to the ROW on USDA land. To avoid any inconsistency between the USDA/TRRC easement and the mitigation conditions proposed by SEA, TRRC proposes the removal of the previously approved mitigation relating to the LARRS facility.

Condition 2.3: LAND USE IMPACT MITIGATION, Impacts to the Miles City Fish Hatchery

The Supplement to the DEIS presents a discussion of potential impacts to the Miles City Fish Hatchery. Since the issuance of that document, the State of Montana has completed further studies related to future development of the hatchery and adjacent lands. Expansion of the hatchery would conflict with the proposed routing of the Tongue River Railroad. It should be noted that acquisition of ROW across State of Montana property requires a formal application process that affords adequate safeguards and mechanisms to assure that the hatchery, either in its present form or after expansion, will not be adversely affected.

The proper forum for detailed mitigation plans and commitments regarding the hatchery will be the State of Montana easement application process. The State is fully empowered to delineate the terms or conditions under which it will allow a railroad ROW

across state property.

(1) If the Branum Lake Option is built, it will require that the Fish Hatchery expansion plans be altered, either by moving a portion or all of the facility. In doing so, new plans will have to be prepared for the project. The Applicant should assist the Department of Fish Wildlife and Parks in the revised planning process, specifically as the new plans would focus on effects of the railroad on hatchery operations, e.g. noise, vibration, potential fuel leaks, etc.

(2) The Applicant should continue to confer with the Department of Fish, Wildlife, and Parks in regard to expansion plans for the hatchery. Every effort should be made by both parties to inform the other as to continuing developments.

Reason Superceded: Additional fish hatchery studies have been prepared by TRRC at the request of the MT Department of Fish, Wildlife, and Parks who is the state agency that manages the Hatchery. SEA has reviewed these studies. The studies have also been provided to the MT Department of Fish, Wildlife, and Parks For their review. In addition, the Miles City Fish Hatchery has expanded since the TRRC I mitigation conditions were imposed. Based on discussions with MT Department of Fish, Wildlife and Parks, TRRC will seek approval of an easement from Montana Department of Fish, Wildlife, and Parks to cross Miles City Fish Hatchery lands. As a result, SEA is recommending a new mitigation measure that would require TRRC to comply with the requirements of any easement granted by the MT Department of Fish, Wildlife, and Parks to cross the Fish Hatchery.

Condition 3.1: SOCIAL AND ECONOMIC IMPACT MITIGATION, General

The environmental documentation provides detailed information on those social and economic changes that are associated with development of the Tongue River Railroad. The projections contained in the documents cannot be expected to reflect perfectly every possible impact, but the data will serve to provide state and community planning agencies and personnel with the necessary information to meet the demands for increases in public facilities, personnel, and services.

The environmental documentation demonstrates how, in most cases, the increase in tax revenues accruing to local governments will more than offset increases in the costs of providing increased services and new or expanded public facilities. Local government planning agencies will be able to incorporate this information in their short term and long range planning efforts, thus assuring that proper planning and effective mitigation will be in place prior to the incurrence of impact.

In certain cases, local government and, thus, planning capabilities do not exist in any form capable of addressing the problems that could be presented by the construction and operation of a railroad and accompanying mining development. The community of Ashland, in particular, is not prepared to confront the changes and problems that will occur there. Of particular importance to Ashland will be population growth in the community and the corresponding increased demand for community services.

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 4.1: TRANSPORTATION IMPACT MITIGATION, General

Impacts to local transportation systems and facilities that will occur its a result of the development of the proposed Tongue River Railroad can be divided into two general categories. The first category is impacts that will occur during construction of the rail line. The second category is impacts that will result from actual train traffic over the line. Much of the mitigation that will occur for the anticipated impacts will result from ROW negotiations between the Applicant and private landowners or governmental agencies. Some of these anticipated impacts are discussed in the Land Use section, already presented. Most important in terms of this discussion are those impacts that will directly affect public roadways and other existing affected public roadways and other existing transportation systems.

Reason Superceded: This general introduction does not contain mitigation conditions and is unnecessary.

Condition 4.2: TRANSPORTATION IMPACT MITIGATION, Construction Impacts

Construction-related impacts will generally involve either increases in vehicular traffic on local public roadways, with the attendant likelihood of greater inconvenience and increased likelihood of accidents, or direct disruption of normal traffic patterns due to construction activities across a road or highway.

The Applicant could mitigate the problem of increased vehicular traffic on local public roads and highways by implementing the following measures during construction activities:

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 4.2(1): TRANSPORTATION IMPACT MITIGATION, Construction Impacts

During construction, contractors should be encouraged to provide transportation to the work site from some central location on a daily basis. This central location may be one of the work camps, a point near the northern terminus at Miles City, or some predesignated point elsewhere along the line, selected to prevent an unnecessary traffic on public roads in the area. Details should be worked out with contractors based on final design criteria, specific tasks or phase of construction, numbers of personnel and equipment and work site.

Reason Superceded: The same basic measure was adopted in TRRC II as Transportation Mitigation Condition No. (1). SEA proposes using the language from TRRC II because it is more current and succinct.

Condition 4.2(2): TRANSPORTATION IMPACT MITIGATION, Construction Impacts

To the greatest extent possible, all construct ion-related traffic, including worker transportation as well as equipment movement should be confined to the "pioneer road" that will be developed within the ROW. In instances where it is not practical to confine all traffic to this road, the Applicant or the individual contractors should make necessary arrangements with the appropriate landowners or agencies to gain access from private or public roadways which will minimize traffic impacts to the greatest extent possible. (The "pioneer" road would be used only during construction of the railroad grade and would be replaced by the grade prior to the placement of track).

Reason Superceded: The same basic measure was adopted in TRRC II as Transportation Mitigation Condition No. (2). SEA proposes using the language from TRRC II because it is more current and succinct.

Condition 4.2(4): TRANSPORTATION IMPACT MITIGATION, Construction Impacts

In cases where traffic along a public roadway may be disrupted during construction of the railroad, the Applicant should comply with all requirements of the Montana Department of Highways or other appropriate agency. In the absence of such requirements, the Applicant should endeavor to maintain at least one open lane of traffic at all times. Specific plans should be developed by the Applicant, and adhered to by contractors, to assure the quick passage of emergency vehicles. These plans should be coordinated through appropriate local agencies. All construction plans affecting public roadways will have to be submitted to the Montana Department of Highways for review and approval.

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Transportation Mitigation Condition No. (3). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 4.2(6): TRANSPORTATION IMPACT MITIGATION, Construction Impacts

In those instances where the disruption of normal traffic patterns or the temporary blockage of important roads or highways is inevitable, TRRC should work with the Montana Department of Highways or other appropriate agencies and the contractors to develop plans to time construction activities to coincide with periods of least impact. This may include such measures as working through the night time hours, or perhaps around the clock to speed construction in some locations.

Reason Superceded: SEA concludes that this measure is unnecessary. Mitigation measure 4.1(5), above, requires TRRC to comply with the guidelines and stipulations provided by the Montana Department of Transportation as well as any mitigation measures regarding traffic flow imposed by relevant state or local agencies and, therefore, addresses the situation addressed by this mitigation measure.

Condition 4.2(7): TRANSPORTATION IMPACT MITIGATION, Construction Impacts

All signing and work zone safety shall be in accordance with the Manual of Uniform Traffic Control Devices.

Reason Superceded: The same basic measure was adopted in TRRC II as Transportation Mitigation Condition No. (4). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 4.3: TRANSPORTATION IMPACT MITIGATION, Operational Impacts

A significant impact from operation of trains along the new railroad line will be traffic delays at crossings which are not grade separated. Just as important, but less frequent, is the possibility of accidents involving trains and vehicles or pedestrians. To address that impact, the Applicant should undertake the following:

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 4.3(1): TRANSPORTATION IMPACT MITIGATION, Operational Impacts

All grade crossings of the new rail line by public roadways should be equipped with warning signs and devices in compliance with current state and federal regulations, requirements and suggestions. To determine the appropriate warning devices for each new crossing, the policy for Railroad Crossing Protection of the Montana Department of Highways should be applied to each crossing, and the appropriate measures implemented.

Reason Superceded: The same basic measure was adopted in TRRC II as Transportation Mitigation Condition No. (5). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 4.3: TRANSPORTATION IMPACT MITIGATION, Operational Impacts

It should be noted that the State of Montana RDW easement process discussed under 2.3 affords the opportunity to apply specific stipulations and requirements to the TRRC, thus safeguarding the public interest as regards traffic safety.

Reason Superceded: This conclusive language, located after mitigation measure 4.3(3), does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 5.1: AIR QUALITY IMPACT MITIGATION, General

Impacts to stir quality resulting from construction and operation of a new rail Line will fall into two general categories. These categories include: (1) the introduction of air pollutants in the form of the products of combustion, generated by construction equipment and railroad engines; (2) the generation of increased quantities of fugitive dust into the air as a result of devegetation, earth moving, general equipment operation, wind; and (3) increased vehicular traffic on unpaved roadways. Simple techniques are available to mitigate these impacts. Since these techniques are universally applicable, and it is not

necessary to delineate those that will be used only during construction. The Applicant should commit to the application of the following measures, either as company operational policy or as stipulations for contractors during construction:

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 5.1(1): AIR QUALITY IMPACT MITIGATION, General

All heavy equipment and vehicles used in the construction, operation, and maintenance of the railroad should be subjected to regular inspection and maintenance to ensure that operation is in compliance with manufacturer's specifications and that equipment is running as cleanly and efficiently as possible.

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Air Quality Condition No. (1). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 5.1(2): AIR QUALITY IMPACT MITIGATION, General

Strict speed limits should be established and adhered to on all access roads and within the ROW, to assure that fugitive dust emissions will be minimized.

Reason Superceded: This measure duplicates existing measures 4.1(3) and 6.0(4), above, and therefore SEA concludes that it is unnecessary.

Condition 5.1(3): AIR QUALITY IMPACT MITIGATION, General

The Applicant should recommend to the individual contractors that they provide group transportation (as discussed under transportation impacts) to minimize vehicular traffic on unpaved roads in the area.

Reason Superceded: This measure duplicates existing measure 4.1(1), above, and therefore SEA concludes that it is unnecessary.

Condition 5.1(4): AIR QUALITY IMPACT MITIGATION, General

When vegetation is removed from the ROW during the early stages of

construction, the cleared areas should be kept to the minimum necessary. This will aid in the mitigation of the problems caused by wind erosion and vehicle borne fugitive dust.

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Air Quality Condition No. (2). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 5.1(5): AIR QUALITY IMPACT MITIGATION, General

In areas where devegetation has taken place, revegetation efforts should commence at the earliest possible opportunity. In those areas where immediate revegetation is not possible, alternative stabilization measures should be implemented. These measures could include matting, mulching, and even mulching with seed and fertilizer. (More details on revegetation are presented section 10.3 of this Master Mitigation Plan.)

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Air Quality Condition No. (3). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 5.1(6): AIR QUALITY IMPACT MITIGATION, General

Dust suppression at all work areas within the ROW and at work camps, staging areas, etc., should be accomplished with the use of water trucks. Arrangements for the acquisition of water should be made with either local landowners, agencies or associations. It is anticipated that such activities would occur regularly and frequently during the driest periods.

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Air Quality Condition No. (4). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 5.1(7): AIR QUALITY IMPACT MITIGATION, General

Any open burning required for the purpose of slash disposal or for any other reason during construction or operation of the rail line should be conducted in strict accordance with local regulations. All necessary permits should be obtained and all necessary safety precautions observed.

Reason Superceded: The same measure with slightly different wording was adopted in

TRRC II as Air Quality Condition No. (5). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 6.1: NOISE IMPACT MITIGATION, General

Noise impacts that are likely to occur as a result of construction and operation of a new railroad fall into two distinct categories. The first category is noise associated with construction activities, heavy equipment operation, a variety of vehicular traffic, etc. The second category is the noise that will result from trains operating along the new rail line. Several mitigation strategies listed here can be employed to mitigate construction noise impacts. It should be noted that the level to which construction noise impacts will occur to sensitive receptors is dependent upon route selection and final centerline location. More specific measures will be apparent at that time. Mitigation of noise impacts from train traffic is difficult, and is dependent to some degree upon volume of traffic as well as volume of downline traffic of all types on the BN mainline. As a result, most of the measures suggested here would require negotiations between the Applicant and the BN for any final implementation.

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 6.1(1): NOISE IMPACT MITIGATION, General

When feasible, all major noise-producing activities during construction should be scheduled to occur during the weekday and daylight hours.

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Noise Condition No. (1). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 6.1(5): NOISE IMPACT MITIGATION, General

The TRRC rail corridor extends through primarily rural and sparsely populated areas. Most of the dwellings in these areas are outside of the threshold for significant disturbance from noise. However, specific areas in Ashland and Miles City could experience interruptions from noise associated with TRRC trains. A, noise monitoring program should be established at these locations to measure the noise levels as train traffic increases during later years of operation. This information would assist the TRRC and community officials in developing noise abatement strategies as they are needed.

Reason Superceded: The Tongue River I alignment has been refined to avoid populated areas of Miles City. All potential receptors in Miles City would be located outside of the 65 dB contour.

Condition 7.1: SAFETY IMPACT MITIGATION, General

The heading Safety Impacts encompasses several broad areas of potential impacts. The first consideration under this heading is the prevention of construct ion-related accidents. A second consideration is the public safety as it relates to such occurrences as derailments, fuel spills, other toxic material spills, and other catastrophic events. A third general category includes the prevention and suppression of railroad-caused wildfire. Concerns regarding the potential for and response to train/vehicle and train/pedestrian crossing accidents are also topics considered here.

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 7.2: SAFETY IMPACT MITIGATION, Construction Safety

Adherence to normal construction safety practices will minimize the potential for construction-related accidents. All contractors should hold safety meetings for their workers and assure that each person is cognizant of the safety measures and procedures expected in each work situation.

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Safety Condition No. (1). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 7.2(1): SAFETY IMPACT MITIGATION, Construction Safety

Contractors should be encouraged to provide group transportation to the job site, as discussed under that heading.

Reason Superceded: This measure duplicates existing measure 4.1(1), above, and is, therefore, unnecessary.

Condition 7.2(2): SAFETY IMPACT MITIGATION, Construction Safety

Speed limits for all construction vehicles and equipment, both on and out of the ROW, should be enforced.

Reason Superceded: This measure duplicates existing measure 4.1(3), above, and is, therefore, unnecessary.

Condition 7.3: SAFETY IMPACT MITIGATION, Emergency Situations

A variety of events here classified as "emergency situations" could occur along the ROW, during either construction or operation of the railroad. These include such things, as derailments, oil spills, and toxic substance spills. The Applicant should implement a number of general measures that can be used to initiate specific actions in response to emergency situations.

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 7.3(1): SAFETY IMPACT MITIGATION, Emergency Situations

Planning Framework. The Applicant should develop an internal emergency, response plan, which is consistent with Montana State plans authorized under Title 10, Montana Code Annotated (MCA), in an effort to avoid duplication. Such plans could include:

a. Emergency notification plan whereby a priority list of agencies and individuals to be notified in a specific emergency is prepared. The plan would include names and phone numbers of individuals to be contacted in case of such events as an herbicide spill, fuel spill, range fire, and medical emergency

b. Procedures to be followed by railroad operation and maintenance personnel in case of such an event, including specific responsibilities by individual.

c. Directions for most timely response and fastest emergency vehicular access to any particular section of the rail line.

d. Locations and inventories of all emergency equipment, and any standard operational equipment which may be useful in dealing with emergencies.

Reason Superceded: The same basic measure was adopted in TRRC II as Safety Mitigation Condition No. (2). SEA proposes using the language from TRRC II because it is more succinct and allows TRRC to prepare the plan in accordance with the

governing state regulations, as is appropriate.

Condition 7.3(2): SAFETY IMPACT MITIGATION, Emergency Situations

Cooperative Planning/Contacts. The Applicant should establish cooperative relationships with all local and state agencies that have responsibilities for disaster/ emergency planning and response. The Applicant should provide operation plans and copies of the response plans noted in item (1) above to such agencies for review and suggestions. Comments from these organizations should be incorporated as necessary. These state and local agencies are to include, but are not limited to:

a. Fire departments in Miles City, Broadus, Ashland, and other rural units along the route.

b. Local ambulance and emergency medical services, as well as air evacuation services in Billings.

c. Disaster and Emergency Services Division of the Department of Military Affairs, Helena. This is likely the most important contact in case of' a major emergency in terms of developing a coordinated response.

d. The Montana Department of Health and Environmental Sciences (especially the Water Quality Board).

e. The Montana Department of Fish, Wildlife, and Parks.

f. The Montana Department of State Lands, Land Administration Bureau.

g. The Montana Department of Natural Resources and Conservation, Water Resources Bureau.

h. U.S. Department of Agriculture, Fort Keogh Livestock and Range Research Station.

i. U.S. Bureau of Land Management or U.S. Forest Service (recent reorganization proposals may transfer local segments of the Custer National Forest to the BLM for management).

j. Other local agencies or groups which are identified as key to disaster.

Reason Superceded: The same basic measure was adopted in TRRC II as Safety Mitigation Condition No. (3). SEA proposes using the language from TRRC II because it is more succinct and includes the most current list of relevant agencies.

Condition 7.3(3): SAFETY IMPACT MITIGATION, Emergency Situations

Fire Prevention and Suppression. The Applicant should develop a wildfire

suppression and control plan for fires occurring on the ROW as a result of traffic or undetermined causes. The following considerations should be included in the plan.

a. The plan should be developed after final engineering and overall operation plans are complete. This will afford planners the benefit of special information regarding exact location of centerline, access points, and equipment and personnel which might be of use in case such an event occurs.

b. State-of-the-art techniques for fire prevention and suppression should be evaluated and included in the plan as applicable. Where an industry-wide standard exists, it should be adhered to or improved upon.

c. During third phase engineering, the Applicant should attempt to provide the greatest possible access to all portions of the ROW, in terms of grade crossings and gates, in an effort to minimize response time. Certain areas adjacent to the ROW are more accessible than others. The Applicant should recognize topographic differences in providing access for emergency vehicles crossing the rail line. While there are no industry standards for determining the preferable distance between crossing points, it should be shorter in rougher terrain than it would be in more accessible areas. The Applicant should consult other railroads to ascertain the appropriate distance between access points.

d. Since the Applicant will be a significant taxpaying entity, it can be assumed that the emergency assistance of the various tax-supported fire districts will be an integral part of this plan [see item (2) above]. It should be noted, however, that many rural fire districts operate on a strictly volunteer, unfunded basis. In such cases, the Applicant should develop relationships with these local organizations for the purpose of implementing funding agreements. A formula should be established, based on criteria applied by other railroads in the region, to determine the amount of funding per group.

e. The Applicant should commit to all reasonable efforts to protect property, livestock, and the general public from damage due to Tongue River Railroad-caused fires. In addition, the Applicant should make every effort to assure adequate access to all areas on all sides of the ROW. All serious concerns and suggestions should be explored for practicality, usefulness, economic considerations, etc.

f. The Applicant should observe all applicable operational regulations promulgated by the Federal Railroad Administration. This will also serve to minimize the potential for railroad-caused fires.

Reason Superceded: The same basic measure was adopted in TRRC II as Safety Mitigation Condition No. (4). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 7.3(4): SAFETY IMPACT MITIGATION, Emergency Situations

Oil Spill Prevention and Control Plan. The Applicant should develop, in concert with the appropriate agencies and private concerns, plans to prevent spills of oil or other petroleum products, both during construction and operation and maintenance. The plans developed should include those stipulations that would be imposed on firms involved in construction of the rail line. An aspect of such plans would be the emergency notification procedures, discussed in item (1) above. Other items that would be included are:

a. Procedures for reporting spills.

b. Definition of what constitutes a spill.

c. Methods of containing, recovering, and cleaning up spilled oil.

d. A list of needed equipment and locations of same.

e. A list of all agencies and management personnel to be contacted, as in item (2) above.

f. Assurances that techniques and procedures to be employed in cleanup are representative of the best technology currently available.

In addition to the items listed here, the stipulations to be followed during construction would be developed, in the form of guidelines based on the tasks to be accomplished by the individual contractors. Among the stipulations that could be employed are:

g. Care during refueling to guard against overflows.

h. Storage of fuel only in metal storage tanks surrounded by impervious dikes capable of containing greater than the capacity of the tank.

i. Removal of waste oil to appropriate sites, away from the ROW.

j. Keeping equipment in good running order and conducting routine maintenance activities at locations removed from the ROW.

Specifics of these plans should be discussed and refined with the appropriate agencies, and the plans should be in force at the start of construction.

Reason Superceded: The same basic measure was adopted in TRRC II as Safety Mitigation Condition No. (8). SEA proposes using the language from TRRC II because it is more succinct and allows TRRC and the relevant agencies to develop an oil spill plan, as is appropriate.

Condition 7.3(5): SAFETY IMPACT MITIGATION, Emergency Situations

Toxic Materials Spills. It is not anticipated that the Applicant will be involved with the transport of toxic materials. This consideration is included to account for the possibility that herbicides may be accidentally introduced to other than the designated portions of the ROW. (See vegetation discussion of noxious weed control.) The same general approach discussed under items (3) and (4) above should be taken, with immediate notification of the appropriate agencies and personnel being given priority equal to immediate containment. Procedures should comply with the law, regulatory guidelines, and the best technology currently available. Application of herbicides is a licensed activity and is done under strict supervision, and as such, response should be nearly instantaneous.

Reason Superceded: The same basic measure was adopted in TRRC II as Safety Mitigation Condition No. (10). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 8.1: HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

A wide variety of state and federal regulations and permit processes are in place to assure that overall water quantity and quality is not altered or diminished by activities such as the proposed Tongue River Railroad. Detailed permit applications are submitted to various agencies for the purpose of assuring that construction and operational activities on or near any waterways are conducted in such a manner as to provide minimal impact to those areas. Permit processes in which the Applicant is currently involved include:

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 8.1(1): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

U.S. Army Corps of Engineers "404" Permit process for all bridges and other structures occurring on designated streams (perennial). This process is required for each major bridge crossing of the Tongue River and Otter Creek as well as each area where rip-rap is to be installed. This process requires detailed environmental data as well as construction data. Permits are issued with accompanying stipulations to limit environmental impact to the greatest degree possible.

Reason Superceded: The same basic measure was adopted in TRRC II as Hydrology Mitigation Condition No. (1). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 8.1(2): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

The "310" Permit process, jointly administered by the local Conservation Districts and the Water Quality Bureau of the Montana Department of Health and Environmental Sciences. This process is very similar to the "404" process previously discussed. Similar procedures for attaching stipulations to a permit also are followed.

Reason Superceded: The same basic measure was adopted in TRRC II as Hydrology Mitigation Condition No. (1). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 8.1(3): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

Temporary Discharge or "Turbidity Exemption" permits are being sought from the Water Quality Bureau of the Montana Department of Health and Environmental Sciences. These permits are required wherever construction activities may cross any streambed or bank (ephemeral or perennial). In a result, each crossing of a streambed, dry or not, requires such a permit.

Reason Superceded: The same basic measure was adopted in TRRC II as Hydrology Mitigation Condition No. (1). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 8.1(4): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

Since the State of Montana holds title to the streambed of the Tongue River, the

bridge crossing will require additional authorization under the easement application process. The regulatory authority of the state, administered by the Department of State Lands, will further safeguard the public interest and the affected resource.

Reason Superceded: The same basic measure was adopted in TRRC II as Hydrology Mitigation Condition No. (2). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 8.1(1): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

In addition to these very detailed permit processes, a number of other safeguards can be built into the final design of the rail line. Some of these include:

(1) All culverts and other drainage structures installed at ephemeral and perennial stream crossings will be designed to pass the projected 100-year flood.

Reason Superceded: A similar measure was adopted in TRRC II as Hydrology Mitigation Condition No. (4). However, the TRRC II mitigation condition required that the culverts be designed to pass a projected 25-year flood rather than a 100-year flood. SEA proposes using the language from TRRC II because it reflects the current state requirements for culvert design.

Condition 8.1(2): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

Where possible, the proposed route is designed to avoid the flood plain. Where the railroad grade does infringe upon the flood plain, drainage structures should be installed to assure that the grade does not restrict or re-route the 100-year flood.

Reason Superceded: A similar measure was adopted in TRRC II as Hydrology Mitigation Condition No. (5). However, the TRRC II mitigation condition required that the drainage structures be designed to pass a projected 25-year flood rather than a 100-year flood. SEA proposes using the language from TRRC II because it reflects the current state requirements for culvert design.

Condition 8.1(1): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

To prevent unnecessary degradation of water quality due to erosion, revegetation efforts should begin as soon as possible after construction is complete in a given area. (See revegetation section, 10.3.)

Reason Superceded: SEA concludes that this measure duplicates mitigation measure in Vegetation Section (10.3) and, thus, is unnecessary. No such measure appeared in the Hydrology and Water Quality mitigation section in TRRC II because this was addressed in Condition A.9.3.2(1) in the Vegetation Section.

Condition 8.1(4): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

Spills of fuel or other toxic or hazardous substances which may affect water quality should be addressed in the manner described in the section on safety.

Reason Superceded: SEA concludes that this measure duplicates mitigation measure 7.3(4) in the Safety Section and, thus, is unnecessary. No such measure appeared in the Hydrology and Water Quality mitigation section in TRRC II. It was addressed as Safety Condition 8.

Condition 8.1(5): HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

Construction of all stream crossings, including bridges and culverts and such activities as require stream bank encroachments (rip-rap, for example), should be timed to occur during periods of low or no flow in the streams affected. The vast majority of streambeds traversed by the railroad are dry most of the year, so such scheduling should not be difficult.

Reason Superceded: The same basic measure was adopted in TRRC II as Hydrology Mitigation Condition No. (6). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 8.1: HYDROLOGY AND WATER QUALITY IMPACT MITIGATION, General

It also should be noted that a study has been conducted to determine the extent to which the Tongue River Railroad would constrict the floodwaters from a disaster such as

a breach of the Tongue River Dam. The study shows that the railroad grade would, to some extent, alter the inundation pattern, but would not lead to any increase in damages to humans, livestock or property. Further, it would not appreciably affect the disaster plans as discussed in the Tongue River Dam Emergency Warning and Evacuation Plan, published by the Montana Department of Natural Resources and Conservation.

Reason Superceded: This general language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 9.1: AQUATIC ECOLOGY IMPACT MITIGATION, General

Impacts to aquatic resources from the proposed Tongue River Railroad are likely to occur only in those areas where the railroad grade directly infringes upon the stream bank or streambed. Such places include river crossings requiring bridge construction and areas where rip-rap is required for stream bank stabilization. In coordination with state agencies, primarily the Department of Fish, Wildlife, and Parks (MFWP), the Applicant should proceed with detailed, site-specific inventory work of potential impact sites, upon the completion of third phase engineering. Based upon the results of the work, specific mitigative measures can be determined and applied. The biologist conducting the work would be subject to the approval of MFWP personnel.

Reason Superceded: This introductory language does not contain mitigation conditions, ~~and SEA~~ concludes that it is unnecessary.

Condition 9.1(1): AQUATIC ECOLOGY IMPACT MITIGATION, General

Aquatic Resource Sampling. For those locations where the proposed Tongue River Railroad would cross the Tongue River, or where extensive rip-rapping would occur, a three-part plan of study should be undertaken to identify aquatic resources. The results of the study would be utilized in the development of mitigation plans. The three-part plan of study includes: (a) a stream habitat survey to identify existing habitat features and values; (b) benthic macroinvertebrate sampling to identify community composition and numbers; and (c) fish spawning survey to determine the importance of the area to spawning of game fish.

Reason Superceded: The same basic measure was adopted in TRRC II as Aquatic Mitigation Condition No. A.9.2(1). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 9.1(1)a.: AQUATIC ECOLOGY IMPACT MITIGATION, General

Stream Habitat Survey. The stream habitat survey would utilize methods described in "Methods for Evaluating Stream, Riparian, and Biotic Conditions."[4] Stream transects would be established in appropriate locations to evaluate existing conditions and to monitor changes during construction. Along each transect, the following variables would be measured:

1. stream width
2. stream shore depth
3. stream average depth
4. pool (ft.)
   (a) quality
   (b) forming feature
5. riffle (ft.)
6. run (ft.)
7. substrate
   (a) boulder (greater than 12 inches)
   (b) cobble (12-2.5 inches)
   (c) coarse gravel (2.4-.5 inches)
   (d) fine gravel (.4-.1 inches)
   (e) sand
   (f) clay
8. stream bank soil alteration rating
9. stream vegetative stability rating
10. stream bank undercut and angle
11. vegetation overhang
12. embeddedness

Reason Superceded: The same basic measure was adopted in TRRC II as Aquatic Condition A.9.2(1)(a). The only difference between this measure and the measure adopted in TRRC II is that this measure includes substrate categories 7(a)-(f); the measure in TRRC II has no substrate categories. Since this mitigation measure was adopted in the mid-1980s, substrate categories have changed so the categories listed in this measure are no longer current. SEA proposes using the language from TRRC II because it does not contain the outdated substrate categories.

Condition 9.1(1)c.: AQUATIC ECOLOGY IMPACT MITIGATION, General

Fish Spawning Survey. Several species of game fish spawn in the Tongue River, including sauger, walleye, channel catfish, smallmouth bass, and sturgeon. A game fish

[4] William S. Platts, Walter F. Megahan, and G. Wayne Minshall, "Methods for Evaluating Stream, Riparian, and Biotic Conditions,'' General Technical Report Int-138, Intermountain Forest Range and Research Experiment Station, Ogden, Utah.

spawning potential survey should be conducted at each proposed bridge location as well as areas of proposed extensive rip-rapping. Sampling periods for the spawning survey would be early spring after ice breakup, after peak runoff, and in the fall. Collection methods would include electroshock, seining, trap netting, and fry sampling.

Reason Superceded: The same basic measure was adopted in TRRC II as Aquatic Mitigation Condition No. A.9.2(1)(c). SEA proposes using the language from TRRC II because it is more succinct and current.

Condition 9.1(2): AQUATIC ECOLOGY IMPACT MITIGATION, General

Mitigation Techniques. Once sampling has been completed and detailed data on the aquatic resource to be affected have been obtained, mitigative measures can be delineated. Some of the measures that could become necessary include:

a. Preparation of a construction schedule which provides for instream work at those times least critical to the specific fishery or aquatic resource occurring at a site, as well as the period least conducive to sediment transport. Such periods differ by stream and species affected.

b. Developing special procedures for handling of displaced materials and petroleum products to prevent introduction of such materials into the aquatic system. The procedures referred to here would be dictated by site-specific geographic and construction criteria.

c. Running silty water through settling pond systems when dewatering for footing construction is required.

d. Assuring that backfill at crossing and rip-rap sites is washed and essentially silt-free.

e. Double-shifting at crossing sites to minimize the duration of construction activities in or near stream banks.

It should be further noted that all sampling activities have been suggested by and would be coordinated with the Montana Department of Fish, Wildlife, and Parks. It is likely that MFWP personnel will be responsible for any electrofishing aspects of the inventory.

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Aquatic Condition A.9.2(2). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 10.1: TERRESTRIAL ECOLOGY IMPACT MITIGATION, General

Two areas of concern are addressed under the overall heading of terrestrial ecology -- wildlife and vegetation. The thrust of the terrestrial mitigation plan will be to provide additional information and options for avoiding unnecessary impacts to vegetation and wildlife. All individuals conducting further wildlife or vegetation studies will be qualified individuals, as is the policy of the ICC. If necessary, these individuals will be approved by the MFWP.

It should also be noted that the State of Montana has expressed an interest in the possibility of some form of compensation for habitat loss due to ROW construction. Through the Department of Fish, Wildlife and Parks, the State of Montana has suggested five additional areas that could be considered by the TRRC as part of final ROW negotiations with individual landowners. These are:

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 10.1(2): TERRESTRIAL ECOLOGY IMPACT MITIGATION, General

The construction of wildlife-related ponds adjacent to, or using the railroad grade as a dam. These could include "dugout" type ponds, and "bypass" ponds designed to be filled during high flows.

Reason Superceded: The same measure with slightly different wording was adopted in TRRC II as Terrestrial Condition A.9.3(2). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 10.1(3): TERRESTRIAL ECOLOGY IMPACT MITIGATION, General

The providing of public access, in appropriate locations, along the rail line ROW.

Reason Superceded: The same basic measure was adopted in TRRC II as Terrestrial Mitigation Condition No. A.9.3(3). SEA proposes using the language from TRRC II because it is the more current formulation.

Condition 10.1: TERRESTRIAL ECOLOGY IMPACT MITIGATION, General

Implementation of any of these measures would have to await ROW negotiations with affected landowners. Therefore, it is not possible or desirable to suggest adoption of any of the specific measures listed at this time. It should be noted that the State of Montana's regulatory authority over easements across state lands would provide a vehicle for addressing the DFWP's concerns.

The TRRC should work with the Montana Department of Fish, Wildlife and Parks to evaluate the feasibility of these actions. Some measures, such as conservation easements, public access, etc. might conflict with adjacent landowner wishes. Implementation of these measures, therefore, would have to be reasonable, practicable, and take into account the concerns of all parties.

Reason Superceded: This conclusive language, found directly after mitigation measure 10.1(5) does not contain mitigation conditions and, SEA concludes that it is unnecessary.

Condition 10.2: TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

The kinds and amounts of habitats that will be lost during construction of the Tongue River Railroad were identified in the environmental documentation. Avoidance by wildlife of normal use areas adjoining the construction site is considered to be a short term impact that will be mitigated by the completion of construction; wildlife will simply reoccupy those areas where their normal use patterns have been disrupted. Mitigation of other impacts, however, requires identification of those sites where impacts may occur. Once sites are identified, numerous mitigation techniques can be developed and applied to deal with specific cases. The following methods can be used to identify those sites:

Reason Superceded: This introductory language does not contain mitigation conditions, ~~and SEA~~ concludes that it is unnecessary.

Condition 10.2(1): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

An updated aerial survey should be conducted during the winter before construction begins. An aerial survey may identify new winter ranges, as well as locate any new prairie dog colonies along the route.

Reason Superceded: The same condition with slightly different wording was adopted in TRRC II as Wildlife Condition A.9.3.1(1). SEA proposes using the language from

TRRC II because it is the most current formulation.

Condition 10.2(2): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

A thorough ground reconnaissance should be conducted between April 15th and May 15th. During this period, grouse leks will be active, raptors will be nesting, and winter ranges may still be identifiable. The entire ROW should be covered, preferably by walking. In some areas it will be possible to cover the ROW by vehicle, but much of the route will be accessible only on foot.

Reason Superceded: The same condition with slightly different wording was adopted in TRRC II as Wildlife Condition A.9.3.1(2). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.2(3): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

The purpose of reconnaissance will be to locate big game winter range based on evidence, such as animal remains, hair, pellet groups, etc.; locate any prairie dog colonies that were not recorded during the aerial survey; locate sage grouse and sharp-tailed grouse leks; and locate raptor nests, particularly golden eagles and prairie falcons. Evidence of threatened or endangered species, such as black-footed ferrets and peregrine falcons, would also be sought during the reconnaissance.

Reason Superceded: The same basic condition was adopted in TRRC II as Wildlife Condition A.9.3.1(2)(a). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.2(4): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

Any specific use sites that are located during the reconnaissance should be mapped, described in field notes, and photographed. Nesting raptors should not be disturbed, but nests should be described as active or inactive.

Reason Superceded: The same condition with slightly different wording was adopted in TRRC II as Wildlife Condition A.9.3.1(2)(b). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.2(5): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

Sage and sharp-tailed grouse leks should be located by listening for displaying males at dawn. Lek locations should be mapped. If possible, at count of the displaying males should be made. If lek sites are discovered later in the day after displaying has ceased and/or birds have left the site, the site should be revisited the following morning or as soon as possible.

Reason Superceded: The same basic measure (without the last two sentences) was adopted in TRRC II as Wildlife Condition No. A.9.3.1(2)(c). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.2(6) TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

Prairie dog colonies that are intersected by the ROW should be mapped to their approximate size on 1:24,000 USGS topographic maps. Following the field reconnaissance, the size of these colonies should be plainmetered and a rough estimate of the existing population should then be made by comparison with results reported in the literature.

Reason superceded: While prairie dogs are not considered a sensitive species, the identification of prairie dog colonies is critical in identified potential habitat for three Federally listed species: black-footed ferret, mountain plover, and swift fox. Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

Condition 10.2(7): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

Prairie dog colonies also should be searched for evidence of black-footed ferrets, following the methods outlined in "Handbook for Locating Black-footed Ferrets". [5] Ferret presence is most easily detected in late summer and during winter (December 1-April 15). The search along the Tongue River Railroad ROW should occur during the winter period, when evidence is most easily discerned.

Colonies affected by the right-of-way should be searched at least once and preferably three times. All colonies should be surveyed on foot, by walking transects

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5. T.W. Clark, T.M. Campbell III, M.H. Schroeder, and L. Richardson, "Handbook of Methods for Locating Black-footed Ferrets," U.S. Bureau of Land Management, Wildlife Technical Bulletin No. 1 (1983), Cheyenne, Wyoming.

spaced approximately 50 m apart back and forth across the colony. Any evidence of ferrets, such as digging, tracks, scats, skulls, etc., should be photographed and, where appropriate, collected. Scats and skulls should be identified following the keys in the "Handbook." If ferret evidence is found, the proper authorities should be notified following procedures of the Endangered Species Act.

Reason superceded: Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

Condition 10.2(8): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife

Similarly, although it is highly unlikely that nesting peregrine falcons will be found along the ROW, any occurrence of nesting activity should be properly recorded and reported.

Reason superceded: Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

Condition 10.2.1: TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife, Mitigative Measures

The TRRC should commit to implementing all reasonable and practical measures that result from studies conducted during third phase engineering. These may include some of the following measures:

Reason Superceded: This introductory language does not contain mitigation conditions, and SEA concludes that it is unnecessary.

Condition 10.2.1(1): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife, Mitigative Measures

Construction Timing. The primary method of impact mitigation for wildlife is timing construction activities. All reasonable attempts should be made to avoid construction at big game wintering sites from December through March.

Reason Superceded: The same condition with slightly different wording was adopted in

TRRC II as Wildlife Mitigative Measure A.9.3.1.1(1). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.2.1(2): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife, Mitigative Measures

Fawning Sites. Timing of construction may be less effective in mitigating disturbance at "fawning sites," because this term cannot be consistently applied to a given geographic location. That is, a site where deer or antelope fawns are born in one year may not be used in the following year.

Most fawns are born during the period May 15 - June 30. Late in the reconnaissance period, any single female deer or antelope that are observed should be assumed to be at or near a potential fawning site. The locations of these individuals should be mapped. On an individual basis, it may be possible for construction activities to avoid these sites during the fawning period. However, if construction cannot be delayed, the resulting impact (displacement of pregnant females to another location) should not significantly affect these species.

Reason Superceded: SEA concludes that his condition is unnecessary because there are a number of mitigation measures that were adopted in Tongue Rive r II pertaining to reconnaissance for terrestrial wildlife. SEA is also recommending that the reconnaissance measures adopted in Tongue River II be expanded to provide similar information and involvement of the Task Force in reviewing study findings and developing appropriate mitigation measures.

Condition 10.2.1(3): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife, Mitigative Measures

Black-footed Ferrets. If black-footed ferrets or their evidence are found in any affected prairie dog colony, appropriate regulatory authorities should be consulted. It will probably be necessary to examine these sites on several occasions to determine whether or not ferrets are currently present in the colony. If a ferret population is present, the proper authorities should be consulted to determine the probable long term impact to ferrets if construction proceeds through the colony. Since ferrets are primarily nocturnal and may not be particularly disturbed by human presence, it may be possible to time construction activities during the day when ferrets are least active.

Reason Superceded: The same condition with slightly different wording was adopted in TRRC II as Wildlife Mitigative Measure A.9.3.1.1(2). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.2.1(4): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Wildlife, Mitigative Measures

Raptors. It is highly unlikely that eyries of the endangered peregrine falcon or bald eagle will be encountered along the ROW. If such nests are found, the appropriate authorities should the contacted. Any active golden eagle or prairie falcon eyries located during the reconnaissance should be mapped. If the ROW passes adjacent to such eyries, construction in the affected area should be timed to avoid the critical incubation and early rearing period (April 1-June 30).

Reason superceded: Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

Condition 10.3: TERRESTRIAL ECOLOGY IMPACT MITIGATION, Vegetation

Vegetation concerns related to the Tongue River Railroad are primarily divided into two categories, reclamation and noxious weed control. Reclamation of devegetated areas is important for a variety of reasons, including the prevention of erosion, limitation of air pollution by fugitive dust, contribution to the stability of the railroad grade, and the importance of providing wildlife habitat. Noxious weed control is an area of great concern to local agricultural operations and should be a priority of Applicant operation and maintenance personnel.

Reason Superceded: This introductory language does not contain mitigation conditions, ~~and SEA concludes t~~hat it is unnecessary.

Condition 10.3(1): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Vegetation

Reclamation. Reclamation or revegetation of the ROW should commence at the earliest possible time after clearing has been completed. In most cases, such revegetation cannot begin until construction is complete. But, wherever possible, it should be expedited. The following are general concerns and practices that should be employed in the process:

Reason Superceded: The same condition with slightly different wording was adopted in TRRC II as Vegetation Condition A.9.3.2 (1). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.3(1)b.: TERRESTRIAL ECOLOGY IMPACT MITIGATION, Vegetation

Restoration/Reclamation Plan. Elements of an adequate restoration and reclamation plan include:

1. Starting reclamation immediately after construction ends, with the goal of rapidly re-establishing ground cover on disturbed soils, with all cut and fill slopes mulched and seeded as they are completed.

2. Avoiding reclamation when soil moisture is high or ground frozen.

3. Analyzing site soil requirements and seasonal precipitation patterns to identify planting dates for optimal revegetation success.

4. Use of rapidly establishing plant species for thorough and rapid ground surface protection.

5. Providing a reclamation specialist to determine specific procedures for arias with reclamation problems such as on steep slopes or locations near waterways.

Reason Superceded: The same condition with slightly different wording was adopted in TRRC II as Vegetation Condition A.9.3.2 (1)(b). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.3(1)d.: TERRESTRIAL ECOLOGY IMPACT MITIGATION, Vegetation

Provisions for Areas of Special Concern

6. Stream Crossings. Banks should be stabilized with naturally occurring trees, shrubs, and grass. Riprap or gabions should be used only as a supplement or where such methods would improve fish habitat, or in cases where engineering requirements so dictate.

7. Construction Sites. AL11 litter, debris, and soils associated with petroleum spills should be removed prior to reclamation. An approved landfill may be used.

8. Slopes Greater Than 3:1. On cut and fill slopes steeper than 3: 1 but less than 2:1, serrations should be made parallel to the slope to act as stable seed beds and sediment traps. Mulching and seeding should be conducted using hydroseeding/mulching equipment. Every attempt should be made

to minimize foot traffic on the reclaimed slopes until vegetation is well established.

Reason Superceded: The same condition with slightly different wording was adopted in TRRC II as Vegetation Condition A.9.3.2 (1)(d). We propose using the language from TRRC II because it is the most current formulation.

Condition 10.3(2): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Vegetation

Noxious Weed Control. The first step in the control of noxious weeds is reclamation of disturbed land along the railroad construction corridor before use by the railroad. This will limit bare soil required for optimal weed colonization. Following establishment of revegetation species and coincident with the beginning of rail transport, a noxious weed control program should be implemented. This program is intended to control all Montana's designated noxious weeds. It is not intended to control invader grass species.

The program should consist of a spray program using 2-4D at one pound per acre beginning June 1st and at monthly intervals until late September. "Ws formulation should be used on all areas of the ROW except near waterways, where Weedar 64 (a nontoxic form of 2-41) amine) should be substituted. The spray sequence has been chosen to ensure that weed plants do not reach maturity and therefore seed dispersal before being eradicated by the herbicide. All precautions normally used around herbicides should be followed and it is recommended that 2-41) amine, rather than 2-4D ester, be used because of its lower volatility. Records of application dates should be kept and referenced to ensure that program goals are fulfilled.

All activities should be conducted according to applicable regulations and guidelines, and should be coordinated with local weed control districts. In all cases, only trained, licensed, personnel should be involved in applications. Coordination with local ranchers would be an acceptable element of the overall plan, at the request of those individuals.

The Applicant should work with the local weed control districts to establish schedules for herbicide applications. In establishing the schedule, a provision should be made that, if the Applicant does not apply the measures by an agreed date, the weed control district would have the authority to implement the appropriate measures and to be reimbursed by the Applicant for those efforts.

Reason Superceded: The same condition with slightly different wording was adopted in TRRC II as Vegetation Condition A.9.3.2 (2). SEA proposes using the language from TRRC II because it is the most current formulation.

Condition 10.3(3): TERRESTRIAL ECOLOGY IMPACT MITIGATION, Vegetation

Threatened and Endangered Plant Species. As of 1984, a document prepared by Peter Lesica and J. Stephen Shelly (1991)and titled Sensitive, Threatened and Endangered Vascular Plants of Montana contains listings of plants that are currently or likely to become legally protected[6]. As a result of this effort, species that might occur in southeastern Montana have been identified. During the course of other activities, biologists will be aware of potential habitats for the species listed in the document cited. If examples of any such species are encountered, appropriate actions will be determined through consultation with governmental authorities.

Reason Superceded: SEA consulted with US Fish and Wildlife Service (USFWS) in preparation for the Draft Supplement. The USFWS issued a list of endangered species to be studied in the Biological Assessment (letter dated January 19, 1999 from USFWS.) As part of the Draft Supplement, SEA, through its non-federal designated representative, prepared a Biological Assessment (see Appendix D.) SEA is in the process of consulting with the USFWS in accordance with Section 7 of the Endangered Species Act. This process will result in the issuance of a Biological Opinion by the USFWS which will specify appropriate measures for the protection of threatened and/or endangered species. As a result, SEA concludes that this measure is no longer necessary. An updated listed of plant species that are either state species of concern or BLM sensitive species is provided in Table 4-2 of Chapter 4.

[6] P. Lesica, J.S. Stephen ., "Sensitive, Threatened and Endangered Vascular Plants in Montana," *Occasional Publiciation No 1.* Helena, MT: Montana Natural Heritage Program. 88p

Condition 11.1: CULTURAL RESOURCES IMPACT MITIGATION, General

Construction of the Tongue River Railroad will have an effect upon cultural resources (historic, prehistoric archeological, and architectural) that may be on or eligible for nomination to the National Register of Historic Places (NRHP). After selecting and surveying an alignment, but prior to the initiation of third phase engineering, a Memorandum of Agreement (MOA) should be developed in consultation with appropriate authorities.

The (MOA) would detail: (1) the survey boundaries and methods to be followed in conducting an intensive pedestrian survey of the alignment; and (2) the steps and plans to be followed in treating cultural resources that are determined to be eligible for listing on the NRHP and that may be adversely impacted by the construction and operation of the railroad. The (MOA) should take into account, but not be restricted by, the guidelines set forth in Section 106 and 110f of the National Historic Preservation Act (16 U.S.C. 470) and its implementing regulations, "Protection of Historic and Cultural Properties" (36 C.F.R. 800).

During the preparation of the environmental documentation for the proposed railroad, a number of cultural resources were tentatively identified. A preliminary determination of eligibility was node for each site. The pedestrian survey conducted according to the terms of the SIIAP would provide the TRRC with more complete information about the presence of cultural resources in the study area. Utilizing the SIIAP, the Applicant should provide the following information regarding cultural resources:

(1) Identification. The pedestrian survey should accurately locate all historic, prehistoric, and architectural sites located within the ROW and buffer area. In addition to locating all cultural resources, Applicant should photograph each site, prepare site maps and written descriptions, and document the development of each site, based on records research and oral interviews.

(2) Evaluation. Each cultural resource site should be assessed using the criteria for evaluation (36 C.F.R. 60.6) to determine whether the site meets the eligibility requirements for listing on the NRHP.

(3) Impact Assessment. Based on the above evaluations, the Applicant, in consultation with appropriate authorities, should determine whether eligible cultural resource sites will be impacted, directly or indirectly, by construction and/or operation of the railroad.

(4) Mitigation. The SIIAP should contain 11 detailed procedure that should be followed if an eligible cultural resource site will be adversely impacted

by the construction and/or operation of the railroad. The mitigation measures should include but not be limited to those set forth in the ACHP's "Manual of Mitigation Measures (MOMM)."*7*

The Applicant should prepare a cultural resource technical report that will detail the results of the field survey. The report should contain information on all sites identified, an evaluation of each site, and a recommendation for further work on all eligible sites that may be impacted during construction and/or operation of the railroad. The report also should contain recommendations for mitigating impacts to each site.

Reason Superceded: As part of the preparation of this Draft Supplement, SEA in consultation with the Northern Cheyenne, Advisory Council on Historic Preservation, MT State Office of Historic Preservation, BLM, U.S. Department of Agriculture, Corps, and MT DNRC developed a Programmatic Agreement (PA) that will govern the identification and protection of cultural resources during construction of the entire rail line from Miles City to Decker, MT. via either the Western Alignment or the Four Mile Creek Alternative. In Tongue River II the Board adopted a condition to this effect which see is recommending be modified to reflect the current PA that has been developed.

Condition 12.0: SUMMARY

The successful mitigation of impacts associated with the Tongue River Railroad will require cooperation and coordination among a wide variety of individuals, state and federal agencies, and local governments. A complex body of regulations applies to most aspects of construction and operation of such a project. In order to comply with the regulatory requirements imposed upon the Applicant, it may become necessary to adjust non-regulated aspects of the suggested mitigation procedures. It is safe to assume that certain conflicting mitigation concerns will occur. In such cases, it is important that lines of communication be maintained between all parties.

A number of tasks remain to be accomplished in terms of development of the Final Mitigation Plan. Most of these tasks are presently constrained by the permitting process itself, but will be accomplished once a decision to proceed is made. These tasks include, but are not limited to:

(1) Individual ROW negotiations with landowners, to include site-specific mitigation provisions.

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[7] Department of the Interior, National Park Service, Advisory Council on Historic Preservation, "Manual of Mitigation Measures (MOMM)," October 12, 1982.

(2) Easement negotiations with the U.S. Department of Agriculture for the ROW through LARRS, to include detailed mitigation stipulations.

(3) Easement: negotiations with the Montana Department of State Lands, the Montana Department of Fish, Wildlife, and Parks, and the U.S. Bureau of Land Management for ROW across lands under the control of those agencies. It is assumed that numerous site-specific mitigation stipulations will be included in resulting agreements.

(4) Development of a detailed construction traffic control plan.

(5) Development of construction mitigation stipulations to be required of all contractors providing services to the Applicant.

(6) Conduct field studies of impacted aquatic habitat.

(7) Conduct field wildlife surveys.

(8) Develop site-specific revegetation and weed control plans.

(9) Develop cultural resources management plans.

Where the specific requirements of these various planning instruments come into conflict, certain priorities must be established to resolve differences. In all cases, regulatory requirements should take precedence over matters of convenience, either to the Applicant or to other parties. In cases where the public health or welfare is at issue, such concerns should take precedence over matters of economic, spatial, or temporal convenience.

Reason Superceded: This general summary does not contain mitigation conditions and SEA concludes that it is unnecessary.

Appendix K

Adopted and Superceded Mitigation Measures from Tongue River II

APPENDIX K
TONGUE RIVER II - FD 31086 (Sub. - No 2)
ADOPTED MITIGATION MEASURES

In 1996, the Board approved TRRC's proposed rail line from Ashland to Decker, MT in Tongue River II and imposed as part of the approval decision the Environmental Mitigation Conditions recommended in the EIS prepared for this proceeding. The Environmental Mitigation Conditions for Tongue River II in their entirety are reproduced below.

In the margin is SEA's suggested disposition for each mitigation measure: recommended, recommended as modified, or recommended to be superceded. For those measures recommended, or recommended to be modified, there is a reference to the appropriate chapter, Chapter 7, in the Draft Supplement where the mitigation measure or modified mitigation measure is set forth. The reasons explaining why SEA recommends that mitigation measures be superceded are discussed, in order, in the section immediately following the Environmental Mitigation Conditions.

Environmental Mitigation Conditions from Tongue River II and SEA's Suggested Disposition:

INTRODUCTION

The recommended mitigation measures set forth below are based on SEA's independent analysis of the project, comments to the DEIS, SDEIS, the Biological Opinion and a proposed Programmatic Agreement (PA), and conditions either proposed or agreed upon by the railroad. We have incorporated by reference specified portions of the proposed Mitigation Plan that was set forth in the DEIS. The recommended mitigation measures set forth below reflect the changes discussed in Chapter Two of the FEIS, and other clarifying changes.[1]

Conditions applicable to both the Four Mile Creek Alternative and TRRC's preferred route are listed first (section A.)Additional conditions that are specific to Four Mile Creek Alternative are listed next (section B.) Finally, we set forth those additional conditions that apply only to the TRRC preferred route (section C.) If the Board approves construction and operation of either route, SEA recommends the following conditions:

A. CONDITIONS FOR EITHER CONSTRUCTION ALTERNATIVE

[1] Of course, TRRC must comply with all applicable federal, state and local regulations.

Superceded Environmental Mitigation Conditions

A. CONDITIONS FOR EITHER
CONSTRUCTION ALTERNATIVE

AQUATIC AND TERRESTRIAL ECOLOGY condition

TRRC shall participate as a member of the Multi-agency/ Railroad Task Force (Task Force), which will advise, assist and coordinate with TRRC in accomplishing the mitigation measures set forth in the Mitigation Plan in the DEIS addressing aquatic and terrestrial ecology.

Reason superceded: This language was provided as introductory language to the aquatic and terrestrial ecology conditions for Tongue River II . Condition A.9.1. supercedes this language and requires the creation of the Multi-agency/Railroad Task Force. SEA, in Tongue River III, has modified and expanded the role of the Task Force (See Chapter 7)

AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION condition A.9.3 (5) (adopted in kind from the DEIS by the Aquatic and Terrestrial Ecology measure in the FEIS)

Fencing that would not restrict the movement of big game animals seeking to cross the railroad ROW. In consultation with the Multi-agency/Railroad Task Force, the TRRC would consider innovative means to ensure wildlife movement across the ROW.

Reason superceded: The same basic measure was adopted in Tongue River I, subsequently referred to as "TRRC I", as Terrestrial Mitigation Condition No. 10.1(5). In addition, language describing innovative means to ensure wildlife movement across the ROW has been added to TRRC II, Wildlife Condition 2.

AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION condition A.9.3.1 (d) (adopted in kind from the DEIS by the Aquatic and Terrestrial Ecology measure in the FEIS)

Prairie dog colonies that are intersected by the ROW would be mapped to their approximate size on 1:24,000 USGS topographic maps. Following the field reconnaissance, the size of these colonies would be planimetered and a rough estimate of the existing population should then be made by comparison with results reported in the literature.

Reason superceded: While prairie dogs are not considered a sensitive species, the identification of prairie dog colonies is critical in identified potential habitat for three Federally listed species: black-footed ferret, mountain plover, and swift fox. Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION condition A.9.3.1 (e) (adopted in kind from the DEIS by the Aquatic and Terrestrial Ecology measure in the FEIS)

Prairie dog colonies also would be searched for evidence of black-footed ferrets, following the methods outlined in "Handbook of Methods for Locating Blackfooted Ferrets."1 Ferret presence is most easily detected in late summer and during winter (December 1 - April 15). The search along the Tongue River Railroad ROW would occur during this period, when evidence is most easily discerned.

Reason superceded: While prairie dogs are not considered a sensitive species, the identification of prairie dog colonies is critical in identified potential habitat for three Federally listed species: black-footed ferret, mountain plover, and swift fox. Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION condition A.9.3.1 (f) (adopted in kind from the DEIS by the Aquatic and Terrestrial Ecology measure in the FEIS)

Colonies affected by the right-of-way would be searched at least once and preferably three times. All colonies would be surveyed on foot, by walking transects spaced approximately 50 m apart back and forth across the colony. Any evidence of ferrets, such as digging, tracks, scats, skulls, etc., would be photographed and, where appropriate, collected. Scats and skulls would be identified following the keys in the "Handbook." If ferret evidence is found, the proper authorities would be notified consistent with the procedures of the Endangered Species Act.

Reason superceded: While prairie dogs are not considered a sensitive species, the identification of prairie dog colonies is critical in identified potential habitat for three Federally listed species: black-footed ferret, mountain plover, and swift fox. Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION condition A.9.3.1 (g) (adopted in kind from the DEIS by the Aquatic and Terrestrial Ecology measure in the FEIS)

Similarly, although it is not likely that nesting peregrine falcons will be found along the ROW, any occurrence of nesting activity would be properly recorded and reported.

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1 T.W. Clark, T.M. Campbell III, M.H. Schroeder, and L. Richardson, "Handbook of Methods for Locating Blackfooted Ferrets," U.S. Bureau of Land Management, *Wildlife Technical Bulletin No. 1 (1983), Cheyenne, Wyoming.*

Reason superceded:. Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION condition A.9.3.1.1 (introduction) (adopted in kind from the DEIS by the Aquatic and Terrestrial Ecology measure in the FEIS)

TRRC would implement all reasonable and practical measures that result from the completion of the Biological Assessment which TRRC would conduct in coordination with the U.S. Fish and Wildlife Service and any other studies conducted during final engineering. The following are the types of mitigation measures that may be required:

Reason superceded: A similar measure that utilizes the current preferred language was recommended as part of TRRC III.

AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION condition A.9.3.1.1 (2) (adopted in kind from the DEIS by the Aquatic and Terrestrial Ecology measure in the FEIS)

Blackfooted Ferrets. If blackfooted ferrets or their evidence are found in any affected prairie dog colonies, appropriate regulatory authorities would be consulted. It may be necessary to examine these sites on several occasions to determine whether or not ferrets are currently present in the colony. If a ferret population is present, the proper authorities would be consulted to determine the probable long term impact to ferrets if construction proceeds through the colony.

Reason superceded: Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION condition A.9.3.1.1 (3) (adopted in kind from the DEIS by the Aquatic and Terrestrial Ecology measure in the FEIS)

Raptors. TRRC construction activities along TRRC preferred alignment may affect one known bald eagle nest site, located approximately 8 miles north of the Tongue River Dam. To mitigate impacts to this site, and any other active sites that may be located during future surveys, TRRC would avoid construction activities in the immediate area between April 1 - June 30, the critical incubation and rearing times.

Reason superceded: Mitigation for sensitive species, including state and Federally listed threatened and endangered species is addressed through compliance with mitigation measures required in the BA.

CULTURAL RESOURCES condition (2)

TRRC, in the preparation of the cultural resource inventory described in the PA, shall invite Northern Cheyenne tribal representatives to identify and compile a list of traditionally-important plants occurring in the area of potential effect and of gathering sites and access points for these plants. TRRC shall use this information in considering the need to protect and assure continuing access to these plants.

Reason superceded: A Programmatic Agreement (PA) that will govern the cultural resources review has been prepared. Consequently, this measure is no longer necessary.

TONGUE RIVER DAM RECONSTRUCTION condition (2)

Before construction, TRRC shall coordinate development of the geotechnical drilling program near the dam with MT DNRC. Once the results of the drilling are completed, TRRC along with input from MT DNRC, will determine the best engineering method for removal of the cut material. If blasting is necessary, the charges will be designed to insure that there will be no adverse affect to the integrity of the dam.

Reason superceded: A new measure has been developed in TRRC III regarding analysis requests and coordination with MT DNRC.

B. ADDITIONAL CONDITIONS UNIQUE TO THE FOUR MILE CREEK ALTERNATIVE

SAFETY condition (1)

Train movements will require strict adherence to safe operating practices because of the descending 2.3 percent grade, such as the use of seven locomotives at no more than 10 miles per hour for the descent.

Reason superceded: Mitigation condition 4.3(3) from Tongue River I requires that train operations shall adhere to all state and federal regulations including speed, lighting and duration of crossing blockage. Since the measure from Tongue River I provides additional clarity, SEA is recommending it be applied to the entire rail line.

LAND USE

(1) TRRC shall negotiate compensation for direct and indirect loss of agricultural land on an individual basis with each landowner. TRRC shall assist landowners in identifying and developing alternative agricultural uses for severed land, where appropriate. TRRC shall apply a combination of alternative land use assistance and compensation as necessary and as agreed upon during right-of-way negotiations.

Recommended See Chapter 7

(2) Where capital improvements are displaced, TRRC shall relocate or replace these improvements or provide appropriate compensation.

Recommended See Chapter 7

(3) TRRC shall construct right-of-way fencing along the entire line according to specifications suitable to the landowners and consistent with industry standards. TRRC shall negotiate special fencing needs with individual landowners.

Recommended as modified See Chapter 7

(4) TRRC shall install cattle passes (oval, corrugated metal structures, approximately 11 ft. high and 12 ft. wide at the base) along the right-of-way to ensure passage of cattle under the rail line. TRRC shall work with landowners to identify appropriate locations for cattle passes and private grade crossings for equipment.

Recommended See Chapter 7

(5) During final engineering, TRRC shall work with individual landowners to avoid unnecessary conflict between construction activities and ranching operations.

Recommended as modified See Chapter 7

(6) TRRC shall confine all construction activities to right-of-way and to the construction camps along the rail line, at locations to be negotiated between individual landowners and TRRC.

Recommended See Chapter 7

(7) TRRC shall require its contractors to assure that its construction camps are orderly. Upon completion of construction, TRRC shall return the camps to their previously existing use.

Recommended See Chapter 7

(8) TRRC shall appoint a representative, with direct access to management, to work with primary contractors, subcontractors, and landowners to resolve problems that develop during construction.

Recommended See Chapter 7

SOCIAL AND ECONOMIC

(1) TRRC shall make available to local governments and to the Northern Cheyenne Tribe all public data and studies that it is aware of concerning the facilities and services that may be required as a result of mine development.

Recommended See Chapter 7

(2) TRRC shall appoint a liaison between TRRC management and the Northern Cheyenne Tribe to ensure that tribal members receive an equal opportunity to secure temporary

Recommended See Chapter 7

construction and full-time operational jobs with the railroad.

TRANSPORTATION

(1) During construction, TRRC shall encourage contractors to provide laborers with daily transportation to the work site from a central location. Recommended See Chapter 7

(2) To the extent possible, TRRC shall confine all construction related traffic to a temporary access road within the right-of-way. Where traffic cannot be confined to this access road, TRRC shall ensure that contractors make necessary arrangements with landowners or affected agencies to gain access from private or public roadways. The access road shall be used only during construction of the railroad grade, after which construction shall be confined to the right-of-way. Recommended See Chapter 7

(3) Where traffic along a public roadway may be disrupted during construction, TRRC shall comply with all requirements of the Montana Department of Highways (MDH) or other appropriate agencies. In the absence of such requirements, TRRC shall endeavor to maintain at least one lane of traffic open at all times. Specific plans shall be developed by TRRC, in coordination with state and local agencies, to assure the quick passage of emergency vehicles. TRRC shall submit all construction plans affecting public roadways to MDH for review and approval. Recommended as modified, see Chapter 7

(4) TRRC shall comply with MDH's *Manual of Uniform Traffic Control Devices* for work zone safety. Recommended as modified, see Chapter 7

(5) TRRC shall equip all grade crossings with warning signs and devices, as deemed appropriate under MDH=s Railroad Crossing Protection Policy. Recommended as modified, see Chapter 7

AIR QUALITY

(1) TRRC shall subject all heavy equipment and vehicles used in the construction, operation, and maintenance of the railroad to regular inspection and maintenance to ensure that operation complies with manufacturer's specifications and that equipment is running as cleanly and efficiently as possible. Recommended, see Chapter 7

(2) When vegetation is removed from the right-of-way, TRRC shall clear areas only as necessary to mitigate impacts of wind erosion and fugitive dust. Recommended as modified, see Chapter 7

(3) Where devegetation has taken place, TRRC shall begin revegetation as early as possible. Where immediate revegetation is not possible, TRRC shall implement alternative stabilization measures such as matting and mulching. Recommended, see Chapter 7

(4) TRRC shall suppress dust at all work areas by using water trucks, and shall make water Recommended, see Chapter 7

available to local landowners, governmental agencies, or associations for these activities. TRRC shall conduct dust suppression

activities regularly and frequently during the dry periods.

(5) TRRC shall conduct any open burning in strict accordance with local or other applicable regulations, and shall obtain all necessary permits and observe all necessary safety precautions. Recommended, see Chapter 7

NOISE

(1) To the extent practicable, TRRC shall schedule major noise producing construction activities during the weekday and daylight hours. Recommended, see Chapter 7

SAFETY

(1) TRRC shall adhere to federal and state construction safety regulations to minimize the potential for accidents. TRRC shall require its contractors to conduct safety meetings for their workers and to ensure that each person understands safety measures and procedures. Recommended as modified, see Chapter 7

(2) TRRC shall develop an internal Emergency Response Plan consistent with Montana State plans authorized under Title 10, *Montana Code Annotated.*[2] Recommended as modified, see Chapter 7

(3) TRRC shall establish cooperative relationships with all federal, state, and local agencies with responsibility for disaster/emergency response. TRRC shall provide operational plans and copies of the emergency response plan identified above to such agencies and incorporate their comments as appropriate.[3] Recommended as modified, see Chapter 7

(4) TRRC shall develop a Wildfire Suppression and Control Plan for fires occurring on the right-of-way as a result of rail construction/operations or undetermined causes. TRRC shall include the measures relating to fire suppression set forth in the mitigation plan in the DEIS. Recommended as modified, see Chapter 7

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2 This includes a roster of agencies and specific persons to be contacted for specific emergencies, procedures to be followed by particular rail employees, emergency routes for vehicles, and locations of emergency equipment.

3 These agencies include: Disaster and Emergency Services Division of the Department of Military Affairs, Helena; rural fire departments along the route; local ambulance and emergency medical services and air evacuation services in Billings and Sheridan; the Montana Department of Health and Environmental Sciences (especially the Water Quality Board); MT FWP, MT DSL, and Administration Bureau; MT DNRC, Water Resources Bureau; the Northern Cheyenne Tribe; B.M. or U.S Forest Service; and other local agencies or groups which are identified as key to disaster response.

(5) TRRC will negotiate the placement of fire suppression equipment with local ranchers. Recommended as modified, see Chapter 7

(6) TRRC will maintain a serviceable access road and/or access points along the right-of-way, at locations determined in consultation with the local fire officials. Recommended as modified, see Chapter 7

(7) TRRC will develop and install a mobile communications system between the local volunteer fire fighting units, train crews, and ranchers with property adjacent to the right-of-way. Recommended as modified, see Chapter 7

(8) TRRC shall develop, in cooperation with appropriate federal, state and local agencies, a plan to prevent spills of oil or other petroleum products, both during construction and operation and maintenance. TRRC's plan shall include measures pertaining to oil spills set forth in the mitigation plan in the DEIS. Recommended as modified, see Chapter 7

(9) TRRC shall develop guidelines based on the tasks to be accomplished by individual contractors, including: (a) steps during refueling to guard against overflows, (b) storage of fuel only in metal storage tanks surrounded by impervious dikes capable of containing greater than the capacity of the tank, (c) removal of waste oil to appropriate sites, and (d) maintaining equipment in good running order and conducting routine maintenance activities. Recommended as modified, see Chapter 7

(10) If an herbicide spill occurs, TRRC shall respond using the same general approach discussed above. TRRC shall immediately contain the spill, notify the appropriate agencies, and implement appropriate clean-up procedures. Recommended as modified, see Chapter 7

HYDROLOGY AND WATER QUALITY

(1) To assure that overall water quantity and quality are not unnecessarily altered or diminished by this project, TRRC shall submit detailed permit applications to the applicable agencies, including the Corps, local conservation Districts, the Water Quality Bureau of the Montana Department of Health and Environmental Services, and any other applicable agencies. Recommended as modified, see Chapter 7

(2) TRRC shall secure applicable permits from Montana Department of State Lands (MT DSL)for bridge crossings over the stream bed of the Tongue River. Recommended as modified, see Chapter 7

(3) TRRC shall consult with EPA to implement EPA's river bank stabilization methods (see Appendix F.) Recommended as modified, see Chapter 7

(4) TRRC shall ensure that all culverts and other drainage structures installed at ephemeral and perennial stream crossings will be designed to pass the projected 25-year flood. Recommended as modified, see Chapter 7

(5) Where possible, the route shall be designed to avoid the flood plain. Where the railroad grade does infringe upon the flood plain, TRRC shall install drainage structures to assure that the grade does not restrict or reroute the 25-year flood.

Recommended as modified, see Chapter 7

(6) Construction of all stream crossings, including bridges and culverts and activities requiring stream bank encroachments (rip-rap, for example), shall occur during periods of low or no flow in the streams affected.

Recommended, see Chapter 7

AQUATIC AND TERRESTRIAL ECOLOGY

TRRC shall participate as a member of the Multi-agency/ Railroad Task Force (Task Force), which will advise, assist and coordinate with TRRC in accomplishing the mitigation measures set forth in the Mitigation Plan in the DEIS addressing aquatic and terrestrial ecology.

Recommended to be superceded.

The Aquatic and Terrestrial Ecology mitigation measure from the FEIS in <u>Tongue River II</u> adopted in kind the measures found in the "Aquatic and Terrestrial Ecology Impact Mitigation" section of the DEIS for <u>Tongue River II</u> (section A.9). These are reprinted here in their entirety.

A.9 AQUATIC AND TERRESTRIAL ECOLOGY IMPACT MITIGATION

A.9.1 General

The following mitigation measures are intended to reduce or eliminate potential adverse environmental impacts to the terrestrial and aquatic ecology from the construction and operation of the proposed rail line Extension.

As part of the mitigation plan, TRRC would participate as a member of an informal Multi-agency/Railroad Task Force. The purpose of the Task Force will be to advise, assist and coordinate with TRRC in accomplishing the mitigation measures set forth below addressing terrestrial and aquatic impacts. Task Force members shall participate in the Task Force at their own discretion and expense and to the extent that their resources permit. Further, the Task Force members may use additional resources available to them to accomplish the mitigation projects. Other interested parties may be invited to participate as appropriate. Through this informal multi-agency approach, with the participation and cooperation of TRRC, aquatic and terrestrial mitigation can be more effectively implemented.

Recommended as modified, see Chapter 7

Those agencies invited to participate on the Task Force are the following:

Interstate Commerce Commission;

Montana Department of Fish, Wildlife, and Parks;
Montana Department of State Lands;
U.S. Fish and Wildlife Service;
U.S. Bureau of Land Management and
Tongue River Railroad Company.

The ICC will act as the lead agency to coordinate the Task Force. Each participating agency, as well as TRRC, shall designate representative(s) to work with the Task Force.

A.9.2 Aquatic

Impacts to aquatic resources from TRRC's proposed Extension are likely to occur only in those areas where the railroad grade directly infringes upon the stream bank or stream bed. Such places include river crossings requiring bridge construction and areas where rip-rap is required for stream bank stabilization. In coordination with state agencies, primarily the Department of Fish, Wildlife, and Parks (MFWP), TRRC would proceed with detailed, site-specific inventory work of potential impact sites, upon the completion of final engineering. Based upon the results of TRRC=s inventory, specific mitigative measures would then be determined by the appropriate Federal, state and local agencies in consultation with TRRC. Inventory measures would include the following:

(1) **Aquatic Resource Sampling:** For those locations where the proposed Tongue River Railroad would cross the Tongue River, or where extensive rip-rapping would occur, TRRC would conduct a three part study plan to identify aquatic resources. The results of this study would be utilized in the development of mitigation plans. This study would include: (a) a stream habitat survey to identify existing habitat features and values; (b) benthic macroinvertebrate sampling to identify community composition and numbers; and (c) fish habitat spawning survey to determine the importance of the area to spawning of game fish. TRRC would undertake the three part study methods outlined below:

Recommended as modified, see Chapter 7

a. **Stream Habitat Survey**. The stream habitat survey would utilize methods described in "Methods for Evaluating Stream, Riparian, and Biotic Conditions."4 Stream transects would be established in appropriate locations to evaluate existing conditions and to monitor changes during construction. Along each transect, the following variables would be measured:

Recommended as modified, see Chapter 7

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4 William S. Platts, Walter F. Meoahan, and G. Wayne Minshall, "Methods for Evaluating Stream, Riparian, and Biotic Conditions," *General Technical Report* Int-138, Intermountain Forest Range and Research Experiment Station, Ogden, Utah.

1. stream width
2. stream shore depth
3. stream average depth
4. pool (ft.)
   (a)quality
   (b)forming feature
5. riffle (ft.)
6. run (ft.)
7. substrate
8. stream bank soil alteration rating
9. stream vegetative stability rating
10. stream bank undercut and angle
11. vegetation overhang
12. embeddedness

b. **Benthic Macroinvertebrates.** Quantitative samples of benthic macroinvertebrates would be collected immediately upstream and downstream of each proposed location of disturbance. The collected specimens would then be counted and identified at least to genus and to species where possible. The composition of the community would be described.

Recommended as modified, see Chapter 7

c. **Fish Spawning Survey.** A game fish habitat evaluation and, if necessary, spawning habitat potential survey would be conducted at each proposed bridge location as well as areas of proposed extensive rip-rapping. Sampling periods for the spawning survey would be early spring after ice breakup, after peak runoff, and in the fall. Collection methods would include electro-shock, seining, trap netting, and fry sampling.

Recommended as modified, see Chapter 7

(2) **Mitigation Techniques.** Once TRRC has completed sampling and has obtained detailed data on the aquatic resource to be affected, appropriate mitigation measures can be developed. These mitigation measures may include the following:

Recommended as modified, see Chapter 7

a. Preparation of a construction schedule which, if possible and practical, provides for instream work at those times that are (1) least critical to the specific fishery or aquatic resource occurring at a site, and (2) least conducive to sediment transport. These periods would differ by stream and species affected.

b. Development of special procedures for the handling of displaced

materials and petroleum products in order to prevent introduction of such materials into the aquatic system. These procedures would be dictated by site specific geographic and construction criteria.

c. Filtering silty water, which will result from dewatering for footing construction, through settling pond systems.

d. Assuring that rip-rap is washed and essentially silt free.

e. Double-shifting of work crews at river crossing sites to minimize the duration of construction activities in or near stream banks.

A.9.3. Terrestrial

Two areas of concern are addressed under the overall heading of terrestrial ecology: (1) wildlife, and (2) vegetation. The thrust of the terrestrial mitigation plan, in addition to developing specific ameliorative measures, will be to provide additional information and options for avoiding unnecessary impacts to vegetation and wildlife.

As a participant in the aforementioned Multi-agency/Railroad Task Force, stakeholders, the TRRC would discuss implementation of a number of mitigation measures that have been developed by MDFWP and as discussed above. However, it should be noted that, as with the TRRC original 89-mile rail line, a number of these provisions could conflict with the wishes of the adjacent landowners. Implementation of any of these measures, therefore, would have to be reasonable, practicable, and take into account the concerns of all parties. TRRC would implement the following types of mitigation measures:

(1) The participation by TRRC in the development of a "compensation" program for lost wildlife habitat along the rail line. For example, this compensation could include the purchase by the TRRC of "cutoff" land parcels containing good wildlife habitat, and the donation of these lands to the MDFWP for beneficial wildlife management.

Recommended as modified, see Chapter 7

(2) The construction of ponds adjacent to, or using the railroad grade as a dam where practicable. This activity could include "dugout" type ponds and "bypass" ponds designed to be filled during high flows.

Recommended, see Chapter 7

(3) The providing of public access, in appropriate locations, along the rail line ROW, after assuring implementation of all safety measures.

Recommended as modified, see Chapter 7

(4) The granting of conservation easements by TRRC along the rail line.

Recommended as modified, see Chapter 7

(5) Fencing that would not restrict the movement of big game animals seeking to cross the railroad ROW. In consultation with the Multi-agency/Railroad Task Force, the TRRC would consider innovative means to ensure wildlife movement across the ROW.

Recommended to be superceded.

A.9.3.1 Wildlife

The types and amount of wildlife habitats that will be lost during construction of the proposed Extension have been identified in the impacts section of this draft EIS. Avoidance by wildlife of normal use areas adjoining the construction site is considered to be a short term impact that will be mitigated by the completion of construction. Wildlife will reoccupy those areas where their normal use patterns have been disrupted. Mitigation of other impacts, however, requires identification of those sites where impacts may occur. Once sites are identified, numerous mitigation techniques can be developed and implemented by TRRC to deal with specific cases. The following methods can be used by TRRC to identify affected sites:

(1) **Aerial Survey** - TRRC would conduct an updated aerial survey during the winter before construction begins. An aerial survey may identify new winter ranges as well as locate any new prairie dog colonies along the route.

Recommended as modified, see Chapter 7

(2) **Ground Reconnaissance** - A thorough ground reconnaissance would be conducted by TRRC between April 15th and May 15th. During this period, grouse leks will be active, raptors will be nesting, and winter ranges may still be identifiable. The entire ROW would be surveyed, preferably by walking.

Recommended as modified, see Chapter 7

(a) The purpose of reconnaissance will be to locate (1) big game winter range based on evidence, such as animal remains, hair, pellet groups, etc.; (2) any prairie dog colonies that were not recorded during the aerial survey; (3) sage grouse and sharp-tailed grouse leks; and (4) raptor nests, particularly golden eagles and prairie falcons. Evidence of threatened or endangered species, such as black-footed ferrets and peregrine falcons, would also be identified during the reconnaissance.

Recommended as modified, see Chapter 7

(b) Any specific use sites that are identified during the reconnaissance would be mapped, described in field notes, photographed and evaluated for significance. Nesting raptors of concern would not be disturbed. Nests would be described as active or inactive.

Recommended as modified, see Chapter 7

(c) Sage and sharp-tailed grouse leks would be located by listening for displaying males at dawn. Lek locations would be mapped.

(d) Prairie dog colonies that are intersected by the ROW would be mapped to their approximate size on 1:24,000 USGS topographic maps. Following the field reconnaissance, the size of these colonies would be planimetered and a rough estimate of the existing population should then be made by comparison with results reported in the literature.

Recommended to be superceded

(e) Prairie dog colonies also would be searched for evidence of black-footed ferrets, following the methods outlined in "Handbook of Methods for Locating Blackfooted Ferrets."5 Ferret presence is most easily detected in late summer and during winter (December 1 - April 15). The search along the Tongue River Railroad ROW would occur during this period, when evidence is most easily discerned.

Recommended to be superceded

(f) Colonies affected by the right-of-way would be searched at least once and preferably three times. All colonies would be surveyed on foot, by walking transects spaced approximately 50 m apart back and forth across the colony. Any evidence of ferrets, such as digging, tracks, scats, skulls, etc., would be photographed and, where appropriate, collected. Scats and skulls would be identified following the keys in the "Handbook." If ferret evidence is found, the proper authorities would be notified consistent with the procedures of the Endangered Species Act.

Recommended to be superceded

(g) Similarly, although it is not likely that nesting peregrine falcons will be found along the ROW, any occurrence of nesting activity would be properly recorded and reported.

Recommended to be superceded

A.9.3.1.1. Mitigative Measures

TRRC would implement all reasonable and practical measures that result from the completion of the Biological Assessment which TRRC would conduct in coordination with the U.S. Fish and Wildlife Service and any other studies conducted during final engineering. The following are the types of mitigation measures that may be required:

(1) **Construction Timing.** A principal mitigation measure to protect wildlife involves the coordination and timing of construction activities. For example, all reasonable attempts would be made to minimize construction at big game

Recommended as modified, see Chapter 7

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5 T.W. Clark, T.M. Campbell III, M.H. Schroeder, and L. Richardson, "Handbook of Methods for Locating Blackfooted Ferrets," U.S. Bureau of Land Management, *Wildlife Technical Bulletin No. 1 (1983), Cheyenne, Wyoming.*

wintering sites from December through March.

(2) **Blackfooted Ferrets.** If blackfooted ferrets or their evidence are found in any affected prairie dog colonies, appropriate regulatory authorities would be consulted. It may be necessary to examine these sites on several occasions to determine whether or not ferrets are currently present in the colony. If a ferret population is present, the proper authorities would be consulted to determine the probable long term impact to ferrets if construction proceeds through the colony.

Recommended to be superceded

(3) **Raptors.** TRRC construction activities along TRRC preferred alignment may affect one known bald eagle nest site, located approximately 8 miles north of the Tongue River Dam. To mitigate impacts to this site, and any other active sites that may be located during future surveys, TRRC would avoid construction activities in the immediate area between April 1 - June 30, the critical incubation and rearing times.

Recommended to be superceded.

A.9.3.2 Vegetation

Vegetation concerns related to the construction and operation of the proposed Extension are primarily divided into two categories (1) reclamation, and (2) noxious weed control. Reclamation of devegetated areas is important for a variety of reasons, including the prevention of erosion, limitation of air pollution by fugitive dust, contribution to the stability of the railroad grade, and the importance of providing wildlife habitat. Noxious weed control is an area of great concern to local agricultural operations and will be a priority of TRRC operation and maintenance personnel.

(1) **Reclamation.** TRRC would implement reclamation and revegetation of the ROW at the earliest possible time after clearing has been completed. In most cases, such revegetation cannot begin until construction is complete. However, wherever possible, construction and attendant revegetation would be expedited. The following are general practices that would be employed in the reclamation process:

Recommended as modified, see Chapter 7

a. **Preconstruction Planning**. Successful reclamation begins with thorough preconstruction planning. TRRC would include the following elements in its reclamation preconstruction planning:

Recommended as modified, see Chapter 7

1. Designation of sensitive areas.
2. Proposed time schedule of construction activities.
3. ROW clearing and site preparation plans.
4. Erosion and sediment control plans.
5. Waste disposal plan.
6. Restoration, reclamation, and revegetation plan.

b. **Restoration/Reclamation Plan.** TRRC would include the following elements in its restoration and reclamation plan:

Recommended as modified, see Chapter 7

1. Commencing reclamation as soon as practicable after construction ends, with the goal of rapidly reestablishing ground cover on disturbed soils, with all cut and fill slopes mulched and seeded as they are completed.

2. Avoiding reclamation when soil moisture is high or ground frozen.

3. Analyzing site soil requirements and seasonal precipitation patterns to identify planting dates for optimal revegetation success.

4. Use of rapidly establishing plant species for thorough and rapid ground surface protection.

5. Retaining a reclamation specialist to determine specific procedures for reclamation on steep slopes or locations near waterways.

c. **Revegetation Success Assurances.** To ensure revegetation success, TRRC would implement the following measures:

Recommended as modified, see Chapter 7

1. Determination of type and quantity of seed, kind of fertilizer, and other soil amendments would be made based on soil chemical and physical properties, with emphasis on native species where possible.

2. Topsoil would be segregated from subsoil and stockpiled for later application on the reclaimed ROW.

3. Only seed of registered quality and germination success would be utilized.

4. Appropriate seeding techniques would be used, such as drill seeding on level terrain and broadcast or hydroseeding on slopes to ensure distribution of seed mixture on individual micro-environments.

5. TRRC would use mulch material, such as straw and wood-

chips, as a temporary erosion measure and to minimize soil temperature fluctuations and soil moisture loss. Mulch would be applied more heavily on slopes than on level terrain and nitrogen levels adjusted to reflect the increased demand during mulch decomposition.

6. The seeded area would be covered and compacted following seeding.

7. A minimum of 20 lbs/acre of pure live seed would be used throughout the route.

8. For slopes and construction areas near waterways, a variety of methods including sediment raps, berms, slope drains, toe-slope ditches, diversion channels, sodding, and mulching would be used.

9. Reclamation would be monitored, and regrading would be undertaken for eroded surfaces and revegetating areas not successfully reclaimed.

d. **Provisions for Areas of Special Concern**

1. Stream Crossings. TRRC would stabilize banks with naturally occurring trees, shrubs, and grass. Rip-rap or gabions would be used only as a supplementer where such methods would improve fish habitat, or in cases where engineering requirements so dictate.

Recommended as modified, see Chapter 7

2. Construction Sites. TRRC would remove all litter, debris, and soils associated with petroleum spills prior to reclamation. A State-approved landfill would be used.

Recommended as modified, see Chapter 7

3. Slopes Greater Than 3:1. On cut and fill slopes steeper than 3:1 but less than 2:1, TRRC would construct serrations parallel to the slope to avoid erosion and to stabilize seed beds. Mulching and seeding would be conducted using hydro-seeding/mulching equipment. Every attempt would be made to minimize foot traffic on the reclaimed slopes until vegetation is well established.

Recommended as modified, see Chapter 7

(2) **Noxious Weed Control**. The first step in the control of noxious weeds is reclamation of disturbed land along the railroad construction corridor before

Recommended as modified, see Chapter 7

use by the railroad. This will limit bare soil required for optimal weed colonization. Following establishment of revegetation species and coincident with the beginning of rail transport, TRRC would implement a noxious weed control program. This program is intended to control all Montana designated noxious weeds. It is not intended to control other invader grass and weed species.

The noxious weed control program would most likely include a combination of mechanical and herbicide spray methods. TRRC would generally use mechanical removal of weeds near water courses, depending upon time of year. A spraying program would generally employ 2-4D at one pound per acre beginning June 1st and at monthly intervals until late September. This formulation would be used on all areas of the ROW, except near waterways. If a spray is needed near watercourses, Weedar64 (a nontoxic form of 2-4D amine) would be used. The spray sequence has been chosen to ensure that weed plants do not reach maturity.

TRRC would use all precautions normally required around herbicides. TRRC would use 2-4D amine, rather than 2-4D ester, because of its lower volatility. TRRC would keep and reference records of application dates to ensure that the noxious weed control program goals are fulfilled.

TRRC would conduct all noxious weed control activities according to all applicable regulations and guidelines, and would coordinate with local weed control districts. In all cases, only trained, licensed, personnel would be involved in noxious weed control applications. TRRC would coordinate with local ranchers in the overall development of this plan.

CULTURAL RESOURCES

(1) TRRC will comply with the provisions of the proposed PA (see Appendix G, currently under negotiation), or a final PA, if one is executed. **Recommended as modified, see Chapter 7**

(2) TRRC, in the preparation of the cultural resource inventory described in the PA, shall invite Northern Cheyenne tribal representatives to identify and compile a list of traditionally-important plants occurring in the area of potential effect and of gathering sites and access points for these plants. TRRC shall use this information in considering the need to protect and assure continuing access to these plants. **Recommended to be superceded.**

TONGUE RIVER DAM RECONSTRUCTION

(1) During construction of the rail line, TRRC shall provide 24-hour a day access to the MT DNRC for the construction and maintenance of the Tongue River dam either via the **Recommended, see Chapter 7**

construction of temporary roads and/or flagging devices or by other reasonable alternatives.

(2) Before construction, TRRC shall coordinate development of the geotechnical drilling program near the dam with MT DNRC. Once the results of the drilling are completed, TRRC along with input from MT DNRC, will determine the best engineering method for removal of the cut material. If blasting is necessary, the charges will be designed to insure that there will be no adverse affect to the integrity of the dam. Recommended to be superceded

B. ADDITIONAL CONDITIONS UNIQUE TO THE FOUR MILE CREEK ALTERNATIVE

Safety

(1) Train movements will require strict adherence to safe operating practices because of the descending 2.3 percent grade, such as the use of seven locomotives at no more than 10 miles per hour for the descent. Recommended to be superceded

Wildlife

(1) TRRC (in cooperation with MT FWP) will expand its ground and air survey program to include seasonal surveys showing where pronghorn are concentrated and their distribution and movement. From this information, TRRC shall assess and minimize impacts from the proposed right-of-way. Recommended as modified, see Chapter 7

(2) TRRC will place fencing to accommodate seasonal migration, in compliance with the B.M. Fencing Handbook, to protect ranching operations, while allowing for pronghorn movement. Recommended, see Chapter 7

C. ADDITIONAL CONDITIONS UNIQUE TO TRRC'S PREFERRED ROUTE

Land Use

(1) TRRC shall realign the access road for the Tongue River Reservoir State Recreation Area and, where necessary, will install public grade crossings to maintain access to the area. Recommended to be superceded

(2) TRRC shall assist an individual, whose cabin in Cormorant Estates will be displaced, in relocating to another site within that subdivision. Recommended to be superceded

Wildlife

(1) TRRC shall adhere to all terms and conditions in FWS's Biological Opinion (see Appendix C). **Recommended, see Chapter 7**

Appendix L
Biological Assessment

BIOLOGICAL ASSESSMENT
FOR ENDANGERED OR THREATENED SPECIES,
TONGUE RIVER RAILROAD

September, 2003

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FIGURES

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BIOLOGICAL ASSESSMENT
For Endangered Or Threatened Species, Tongue River Railroad

INTRODUCTION

Tongue River Railroad Company, Inc. (TRRC) proposes to construct approximately 116 miles of rail line from Miles City, Montana to near Decker, Montana. This project, called the Tongue River Railroad, would transport coal from existing and future mines in southeastern Montana and provide an alternative routing for coal from Wyoming mines. For the purposes of this Biological Analysis (BA), the route can be considered in three segments:

MILES CITY TO ASHLAND

The Tongue River Railroad was originally conceived in 1980 to transport coal from the Montco Mine and other potential surface mines in the Ashland/Otter Creek area about 89 miles north to Miles City. The environmental analysis relating to this Miles City to Ashland rail line, hereafter called **Tongue River I**, was addressed in the *Draft Environmental Impact Statement, Finance Docket No. 30186, Tongue River Railroad Company, Construction and Operation of a Line of Railroad in Custer, Rosebud and Powder River Counties, Montana* (hereafter called the 1983 DEIS), the *Supplement to Draft Environmental Impact Statement, Finance Docket No. 30186, Tongue River Railroad Company, Construction and Operation of a Line of Railroad in Custer, Rosebud and Powder River Counties, Montana* (hereafter called the 1984 SDEIS) and the *Final Environmental Impact Statement, Finance Docket No. 30186, Tongue River Railroad Company, Construction and Operation of a Line of Railroad in Custer, Rosebud and Powder River Counties, Montana* (hereafter called the 1985 FEIS), prepared by the Interstate Commerce Commission (ICC), which was the predecessor of the Surface Transportation Board (STB). Tongue River I was approved by the ICC in 1986; it has not yet been built.

In the early 1980s, there were no known endemic populations of federally listed or proposed endangered or threatened wildlife in the vicinity of the project. Four species (black-footed ferret [*Mustela nigripes*], whooping crane [*Grus americana*], peregrine falcon [*Falco peregrinus*] and bald eagle [*Haliaeetus leucocephalus*]) were considered by the 1983 DEIS and 1985 FEIS. Black-footed ferrets were not known to occur in the region encompassing the project; peregrine falcons and whooping cranes were considered possible migrants through the area, but no critical habitat (nesting sites) was identified in the region; and bald eagles were known to winter along the Tongue River but did not nest there. The 1983 DEIS and 1985 FEIS

concluded that wintering bald eagles were not likely to be adversely affected by the Tongue River Railroad.

ASHLAND TO DECKER EXTENSION

In 1989 TRRC proposed to extend the rail line approximately 41 miles from Terminus Point 1 near Ashland south to the Decker area. This extension, hereafter called **Tongue River II**, would enable shipment of coal from operating mines near Decker north to Miles City and provide an alternate route for coal now moving from Wyoming mines via the Burling Northern and Santa Fe Railway Company (BNSF) line through Sheridan, Wyoming and Forsyth, Montana. The environmental impact analysis for the Ashland to Decker extension was prepared by the ICC and its successor, the STB, in the *Draft Environmental Impact Statement, Finance Docket No. 30186 (Sub-No. 2), Tongue River Railroad Company, Construction and Operation of an Additional Rail Line from Ashland to Decker, Montana* (hereafter called the 1992 DEIS), the *Supplement to Draft Environmental Impact Statement, Finance Docket No. 30186 (Sub-No. 2), Tongue River Railroad Company, Construction and Operation of an Additional Rail Line from Ashland to Decker, Montana* (hereafter called the 1994 SDEIS), and the *Final Environmental Impact Statement, Finance Docket No. 30186 (Sub-No. 2), Tongue River Railroad Company, Construction and Operation of an Additional Rail Line from Ashland to Decker, Montana* (hereafter called the 1996 FEIS).

1995 Biological Assessment

In November 17, 1989 the ICC published in the Federal Register a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) in the Tongue River II proceeding and to hold public scoping meetings. On December 28, 1989 the U.S. Fish and Wildlife Service (USFWS), which administers the Endangered Species Act (ESA) of 1973, as amended, notified the ICC that three species (black-footed ferret, peregrine falcon and bald eagle), all listed as endangered, could potentially occur in the area to be affected by Tongue River II. Specifically, the USFWS explained that: 1) the bald eagle could nest along the Tongue River, and could occur as a migrant and winter resident; 2) the peregrine falcon could occur as a migrant; and 3) the black-footed ferret (*Mustela nigripes*) could occur in black-tailed prairie dog (*Cynomys ludovicianus*) colonies. On November 10, 1994 the USFWS added the pallid sturgeon (*Scaphirhynchus albus*), which could occur in the lower Tongue River, to the list as endangered.

Since the USFWS had determined that endangered species might be present in the project area and could be adversely affected by the Ashland to Decker extension, USFWS required the preparation of a Biological Assessment (BA) to address the potential effects of the rail line extension on the four species, and to propose (if necessary) measures to mitigate any significant negative effects. On January 23, 1990 the ICC designated Historical Research Associates, Inc. (HRA) to be the ICC's

non-Federal representative to prepare the BA. In turn, HRA contracted with Western Technology and Engineering, Inc. (now WESTECH Environmental Services, Inc.) (WESTECH) to write the BA in October, 1994.

HRA began contacts with the USFWS, Montana Department of Fish, Wildlife and Parks (MDFWP), area residents and other knowledgeable parties regarding the occurrence and habitat of these listed species along the proposed Ashland to Decker extension in 1990. This effort revealed that little was known about bald eagle nesting along the Tongue River. HRA conferred with the USFWS and it was agreed that surveys for wintering and nesting bald eagles along the Tongue River should be conducted. The USFWS formally agreed with this procedure in a letter dated December 24, 1991. These surveys were conducted in February and April, 1992.

In April 1992 the USFWS released its Fish and Wildlife Coordination Act report for the Tongue River Dam Rehabilitation Project (USFWS 1992), a project not related to the Ashland to Decker extension of the Tongue River Railroad. This report, and a subsequent update letter, summarized the known information on the occurrence of threatened or endangered species in an area which encompassed the Ashland to Decker extension.

The three species (black-footed ferret, peregrine falcon and bald eagle) were considered in the 1992 DEIS. In compliance with the National Environmental Policy Act (NEPA), the 1992 DEIS also considered alternatives for the Ashland to Decker extension, and preliminarily concluded that one of these alternatives, called the Four Mile Creek alternative, would result in fewer environmental impacts than TRRC's proposed extension route (hereafter the Original Preferred Alignment).

After receipt of comments on the 1992 DEIS, however, the ICC reviewed its comparison of the Four Mile Creek alternative with the Original Preferred Alignment. In addition, after the 1992 DEIS was issued, TRRC refined the extension route in the vicinity of the Tongue River Dam and Tongue River Reservoir, to mitigate some of the potential impacts that were identified in the 1992 DEIS. In the 1994 SDEIS the ICC concluded that the Four Mile Creek alternative would result in significantly more adverse environmental effects than the Original Preferred Alignment, including greater land disturbance, increased soil erosion, greater deforestation, greater impacts to big game and breeding bird populations, increased air pollution and more impact to human residences.

In June 1995 the ICC submitted a BA to the USFWS. The BA discussed the potential effects of the Ashland to Decker extension along TRRCs refined Original Preferred Alignment, and included measures to mitigate any adverse effects to these four species.

1995 Biological Opinion

In July 1995, after reviewing the BA, the USFWS concluded that the BA accurately addressed the potential impacts to the listed species. The USFWS also concurred with the conclusions of the BA that the Ashland to Decker extension would not adversely affect the peregrine falcon, black-footed ferret or pallid sturgeon. However, USFWS did not concur with the conclusion that the project would not adversely affect the bald eagle. Specifically, USFWS explained that although the mitigation measures proposed by the BA were positive and should help reduce the potential impacts to bald eagles, USFWS was concerned that the proximity of the railroad to one active bald eagle nest could result in abandonment of the nest or premature fledging of chicks.

Therefore, following the process of formal consultation provided for in the ESA, the USFWS issued its final Biological Opinion on Tongue River II in November 1995; the Biological Opinion provided additional measures to mitigate the effects of Tongue River II on the bald eagle.

After review of comments received on the 1994 SDEIS, the STB concluded in the 1996 FEIS that the Four Mile Creek alternative would be environmentally preferable to the refined Original Preferred Alignment considered by the 1995 BA. The 1995 BA and 1995 Biological Opinion were included as Appendix C to the 1996 FEIS. In late 1996 STB approved the Ashland to Decker extension utilizing the Four Mile Creek alternative.

WESTERN ALIGNMENT

In April 1998 TRRC filed an application (*Finance Docket No. 30186 (Sub-No.3), Tongue River Railroad Company, Rail Construction and Operation, Western Alignment in Rosebud and Big Horn Counties, Montana*) with the STB seeking authority to construct and operate a 17.3 mile section, hereafter called the **Western Alignment**, as an alternative to the southernmost portion of the previously approved Tongue River II. The application, including the Environmental Report attached to it, contained supporting evidence that the Western Alignment would present significant economic, operating, maintenance and environmental advantages over the Four Mile Creek alternative.

As part of its NEPA process, in July 1998 the STB issued an NOI to prepare a Supplement to the Final Environmental Impact Statement (SEIS) for the Western Alignment. After review of comments that were submitted in response to the NOI and consultation with three cooperating agencies (U.S. Army Corps of Engineers (COE), U.S. Department of the Interior Bureau of Land Management (BLM), and the Montana Department of Natural Resources and Conservation (MDNRC) acting as lead agency for other Montana state agencies), the STB served a Final Scope of the SEIS in early February 1999. In the Final Scope, the STB explained that the scope

of the SEIS would involve a detailed environmental review of the Western Alignment and alternatives to it, as well as a limited review of the following portions of Tongue River I and Tongue River II: 1) where environmental circumstances or requirements have changed in a manner warranting the updating or augmenting of analyses for Tongue River I or Tongue River II; 2) where there have been refinements to the alignment previously considered in the Tongue River I and Tongue River II EISs requiring additional environmental analysis because they might result in significant environmental impacts not addressed in the previous EISs; and 3) where further environmental analysis was specifically requested.

In the Final Scope, the STB explained that the SEIS would include a BA for the entire Tongue River rail line from Miles City to Decker, updating information from the 1995 BA and 1995 Biological Opinion as appropriate. On November 24, 1998 the STB notified the USFWS that it proposed to designate WESTECH to be the STB's non-Federal representative to prepare the BA.

On January 19, 1999 the USFWS notified the STB that six listed or candidate threatened or endangered species could potentially occur in this area: 1) the black-footed ferret is listed as endangered, and could be a potential resident in black-tailed prairie dog colonies; 2) the bald eagle is listed as threatened, is known to nest along the Tongue River, and is present as both seasonal migrants and winter residents; 3) the peregrine falcon (*Falco peregrinus*) is listed as endangered, and may occur as a transient in the area; 4) the mountain plover (*Charadrius montanus*) was a candidate species (on February 16, 1999 its status was changed to a proposed threatened species) that is a resident of short-grass prairie and may nest in prairie dog colonies; 5) the swift fox (*Vulpes velox*) is a candidate species that is a potential resident of the area, and prefers prairie grasslands; and 6) the sturgeon chub (*Macrhybopsis gelida*) is a candidate species that has been recorded in the lower Tongue River. The pallid sturgeon was not included in the January 1999 USFWS species list.

On January 17, 2003, TRRC filed a request with the Board seeking to update its previously submitted evidence on the transportation merits. TRRC stated that its updated information would be minimal, and it identified five general areas to be addressed.1 On March 11, 2003, the Board served its decision allowing TRRC to file its supplemental evidence on the transportation merits. The Board will establish a procedural schedule for replies after TRRC has filed its evidence and the agency has had an opportunity to review it.

SEA is now resuming its environmental review of the application. SEA intends to use the final scope issued in February, 1999, because, based on currently available information, it appears to thoroughly cover environmental issues requiring analysis in the SEIS. However, because of the three-year lapse in action on the Tongue

River III application, it may be appropriate to update portions of the final scope, or the environmental record that serves as the basis of the SEIS to reflect new environmental circumstances that may differ significantly from when the final scoping notice was published in 1999. SEA is aware of issues related to coal bed methane development in the region, changes in listed Endangered and Threatened species, and that there may be U.S. Army Corps of Engineers jurisdictional changes as a result of the SWANCC case (Solid Waste Agency of Northern Cook County v. Corps of Engineers, 531 U.S. 159, 51 ERC 1833 (2001)). In addition, information that TRRC will provide on the transportation issues in response to the Board's decision of March 11, 2003, may require modifications to the final scoping notice for Tongue River III published on February 3, 1999 (Surface Transportation Board 2003).

DESCRIPTION OF THE PROJECT

PURPOSE

The primary purpose of the Tongue River Railroad would be to transport coal from existing and future mines in southeastern Montana and to provide an alternative routing for coal from Wyoming mines. The Tongue River Railroad would connect at its northernmost point with the Burlington Northern-Santa Fe (BNSF) mainline at Miles City, and would again connect with BNSF at its southernmost point near Decker. Use of TRRCs line would reduce the present transportation distance of coal mined in the upper Powder River Basin (both in Montana and Wyoming) by approximately 160 to 175 miles on 750 to 1000 mile one-way hauls to electric utilities in the upper Midwest and Great Lakes regions (or round-trip mileage savings of 320 to 350 miles). Significant savings in transportation, maintenance and equipment costs would result.

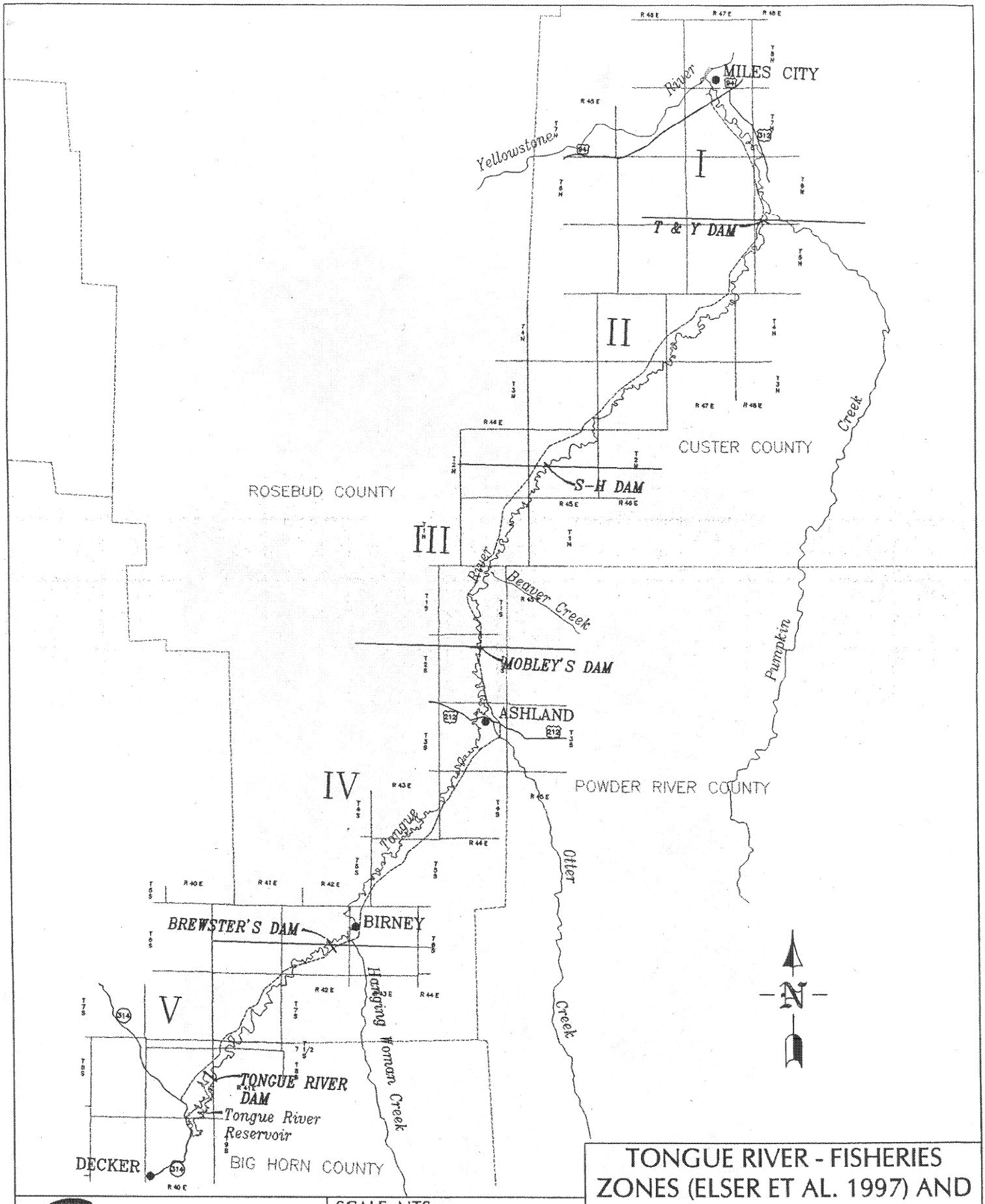
Construction of the Tongue River Railroad would also provide, for the first time, rail service to the largest remaining undeveloped reserves of low sulfur, high Btu sub-bituminous coal in the United States. This coal is needed to help utilities comply with the sulfur limitation in the U.S. Clean Air Act Amendments of 1990, which have created a strong market for low sulfur coal that can be burned in electric utility boilers without the need for costly flue gas desulfurization units.

In summary, the Tongue River Railroad would provide a more efficient means of transporting coal from existing mines in the region and would enable development of proposed low sulfur mines in the Ashland area. Without the Tongue River Railroad, there would be no economically viable transportation for the proposed mines.

DESCRIPTION

The Tongue River Railroad route from Miles City to Decker is shown in Figure 1. The railroad would begin at the southwestern edge of Miles City, where it would tie into the existing BNSF mainline. From Miles City, the route would bear south along the west side of the Tongue River to a point approximately 10 miles north of Ashland. The route would then cross the Tongue River and continue south along the east side of the river. The route would divide near Ashland, with one branch following approximately eight miles southeast along the Otter Creek drainage to Terminus Point 2, while the main branch would continue south along the east side of the Tongue River valley about nine miles south of Ashland to Terminus Point 1. Terminus Points 1 and 2 represent the southern end of the rail line previously approved by the ICC in Tongue River I. Since 1986, TRRC has refined portions of the alignment from Miles City to Terminus Point 1 so that the total length of this portion of the rail line would be about 78 miles. In addition to shortening the route about three miles, most of these refinements place the approved route further from the Tongue River than the alignment considered in Tongue River I.

From Terminus Point 1, the railroad would continue south along the east side of the Tongue River valley for about 21 miles, following the route of the previously approved Tongue River II. TRRC also has refined the alignment along some parts of this portion of this route, which generally serves to place the route further from the Tongue River. From a point about 21 miles south of Terminus Point 1, the TRRC line would follow the Western Alignment (instead of the approved Four Mile Creek alternative) to Decker. The Western Alignment would be about 17 miles long and would cross to the west side of the Tongue River, then gradually leave the Tongue River valley as it would proceed south to the final terminus near Decker, Montana.



TONGUE RIVER - FISHERIES ZONES (ELSER ET AL. 1997) AND MAJOR DIVERSIONS

TONGUE RIVER RAILROAD

FIGURE 1

WESTECH
Environmental Services, Inc.
P.O. Box 6045
Helena, Montana 59604

SCALE: NTS	
DATE: FEBRUARY 1999	
DRAWN BY: DC	
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In terms of construction, the Tongue River Railroad would be similar to other rail lines that serve coal mines in southeastern Montana. The track would be comprised of 136-pound continuous welded rail on concrete ties, resting on 12 inches of ballast and 12 inches of sub-ballast. The right-of-way (ROW) would range from 100 to over 300 feet in width, depending on cut and/or fill requirements, and would average approximately 200 feet. Cut and fill slopes would generally be constructed at angles between two horizontal to one vertical (2H:1V) and one and one-half horizontal to one vertical (1.5H:1V). Steeper slopes may be appropriate in some areas based on soil conditions and to reduce surface disturbance.

Facilities associated with the rail line would include sidings, possible terminal facilities, signal and communications systems, relocated roads, bridges and culverts.

Initial design specifications, which provide the capacity to meet TRRC's needs for a number of years, include the construction of seven passing sidings. Each passing siding would be 8500 feet long between clearance points, which would accommodate future increases in train size and would also allow for comfortable stopping margins. Locations of passing sidings would be based on minimizing train delays in both directions. In addition to the passing sidings, additional set-out tracks would be constructed for set-out and storage of maintenance-of-way (MOW) equipment, bad-order cars and other operational equipment. Each set-out track would be at least 550 feet in length, sufficient to accommodate permanently-coupled car sets that may operate on the Tongue River Railroad. Set-out tracks would be constructed at each passing siding location and at four additional locations along the route.

New terminal facilities may be constructed at Miles City, depending upon whether TRRC and BNSF reach an agreement that would allow BNSF to operate over TRRC tracks. A new terminal would not be required if such an agreement is reached, because BNSF would utilize its own existing facilities. If a new terminal is built, the facilities would consist of buildings for train and engine crews, dispatching, headquarters operation, limited servicing and maintenance, and MOW activities. Three additional sidings, 7800 feet long, would be constructed to handle yard activities.

No power or communication lines are proposed to be constructed along the ROW of the Tongue River Railroad. Instead, signaling and communications systems would be operated by batteries, charged by solar power panels. Signals would conform to the best railroad industry practices to maximize safety to personnel and equipment. The communications system repeater stations would be located every 10 to 20 miles, as appropriate to ensure continuous communications with train crews with no signal loss under extremely adverse weather conditions.

Portions of public and private roads would be relocated along short sections of the railroad. Road relocations would be necessary to minimize curvature, minimize the number of road crossings and accommodate landowner access across the ROW.

Culverts would be placed according to final engineering design. They would be designed to both safely withstand a 25-year flood peak flow with one diameter of pipe headwater, and so that water from a 100-year flood event would not overtop the track.

The Tongue River Railroad would also require the construction of four bridges. There would be one bridge over Hanging Woman Creek, one bridge over Otter Creek and two bridges over the Tongue River (one about 10 miles north of Ashland and the other about 31 miles south of Ashland). All bridges would be designed to withstand and not be crested by a 100-year flood event. The preliminary design for these bridges does not require any piers or foundations to be placed in the river; final engineering design would be determined by geotechnical investigations to be conducted prior to bridge construction. Depending on final engineering, rip rap may be needed at bridge crossings and at three locations (approximately seven miles south of Ashland, about one mile north of Ashland and about six miles north of Ashland) along the Tongue River.

CONSTRUCTION AND OPERATION

Depending on weather, construction of the Tongue River Railroad would most likely occur from April through October (but could begin earlier or end later) over a 3-year period. During construction there would be a variety of heavy equipment operating within the ROW to clear existing vegetation, salvage topsoil, grade/cut/fill the ROW, prepare the rail bed, lay track and place ballast, and reclaim and revegetate disturbed areas, followed by final clean up. During construction a temporary road may be built within the ROW. Most heavy equipment would be confined to this road, but where the ROW is isolated due to the Tongue River, other stream crossings or large parcels of private land, temporary construction access roads, 20 feet in width, may be built subject to negotiation with affected landowners or land management agencies. After construction, these temporary roads would be reclaimed unless otherwise requested by landowners.

There may be two construction camps. The primary construction camp would be an approximately 10-acre site leased in or near Ashland. It would house about 400 people through a combination of trailer/RV hookups and bunkhouses, and would have support facilities such as a kitchen, dining room, restrooms and showers. No permanent foundations would be necessary because all structures would be temporary. Solid and sanitary wastes would be collected and transported to a licensed landfill or sewage treatment facility. No disposal would occur on site.

A smaller (five-acre) construction camp would be located at the south end of the railroad near the connection with the Spring Creek Mine Spur. It would consist of about 100 trailer hookups with support facilities. As with the Ashland camp, this complex would not involve permanent structures and would not entail on-site disposal of solid or sanitary wastes. Following completion of railroad construction, both camps would be restored pursuant to agreements with landowners.

Three equipment laydown and construction centers would operate only during railroad construction. They would occupy a 15-acre site near Miles City, a five-acre site near Ashland, and a 10-acre site near the Spring Creek Mine Spur. Fuel storage and loading during construction would occur in bermed sites with an impervious barrier to avoid ground and surface water contamination.

Off-site borrow areas might not be necessary since the project design would maximize a cut/fill balance where fill material would be generated from cuts. However, if material suitability or volume, or haul distance precluded the use of on-site materials, off-site borrow areas would be developed. They would be located and permitted in accordance with applicable federal, state and local requirements. Sub-ballast would be obtained from suitable cut areas or would be imported from commercial suppliers. Ballast would be obtained from commercial sources.

Once the Tongue River Railroad is in operation, it would operate 24 hours a day, 365 days a year. Trains would operate at speeds up to 55 mph. By the fifth year of operation there would be an estimated 12 train movements per day, or six roundtrip coal trains, over the southern portion of the rail line and approximately 14 train movements per day, or seven roundtrip coal trains, over the Ashland to Miles City portion of the line (one unit train would be comprised of two locomotives and about 113 coal cars). In subsequent years the number of trains per day would decline along that portion of the route south of Terminus Point 1, due to the anticipated decline in production from the Decker area mines. However, train traffic over the northern portion of the route is expected to increase over time. By the fifteenth year of operations, it is anticipated that 18 train movements per day, or nine roundtrip coal trains, will move over the Miles City to Ashland portion of the rail line.

Periodic maintenance of the rail line and ROW would be required, depending on the amount of train traffic. Access to the ROW would be limited to public grade crossings or to private grade crossings where access agreements would be made with the landowner. Maintenance, including mechanical or herbicidal vegetation control, would primarily be accomplished with equipment traveling along the rail itself.

DESCRIPTION OF THE AFFECTED AREA

For the purposes of this BA, the area to be potentially affected by the Tongue River Railroad is generally defined as the Tongue River Railroad project area and adjacent uplands along the route described earlier from Miles City to the tie-in with the Spring Creek Mine Spur near Decker. This area incorporates the railroad ROW. It is also large enough to encompass home ranges or critical habitats of the six listed species considered by this BA. Therefore it is reasonable to assume that any direct effects to these species from construction or operation of the railroad would be limited to this area. Indirect effects outside this area would be highly speculative and unpredictable.

It is also reasonable to assume that any effects to these six listed species at the existing mines near Decker which would be served by the Tongue River Railroad have already occurred as a result of the construction and operation of those mines. Effects as a result of development of mines in the Ashland area that would be served by the Tongue River Railroad are somewhat speculative, since the exact locations/boundaries of these mines and the timing of their development have not been established.

The Tongue River begins in the Big Horn Mountains in Wyoming and flows north to its confluence with the Yellowstone River at Miles City, Montana. It drains an area of about 5,379 square miles, of which 70 percent is in Montana (MDNRC et al. 1996). At its confluence with the Yellowstone River, the Tongue River has a 10 year average annual flow of about 422 cubic feet per second (cfs) just below the Tongue River dam, and 387 cfs at Miles City (USGS 2001). Most of the annual flow of the Tongue River comes from seasonal snow melt runoff in the Big Horn Mountains, with half the annual flow occurring from May to July (1992 DEIS).

Within the area potentially affected by the Tongue River Railroad, the Tongue River is greatly influenced by the Tongue River Dam and Reservoir, which regulate downstream flow. The dam was constructed in 1940 to store water for downstream irrigation; the impoundment originally covered about 3500 surface acres (Elser et al. 1977). Repairs to the Tongue River Dam were completed in 1999 (Undlin, personal comm. 2003), the dam/spillway system now has the capacity to pass a flow of 100,000 cfs. The height of the reservoir has risen by four feet, and its surface area has increased from about 3200 acres to about 3600 acres, and the capacity of the reservoir has increase from 67,000 acre-feet to 80,000 acre-feet. As a result of dam/spillway reconstruction, downstream areas affected by a 100-year flood will increase slightly (MDNRC et al. 1996).

In the area potentially affected by the Tongue River Railroad downstream from the reservoir, most tributaries are ephemeral. The Tongue River Railroad will cross only two perennial tributaries, Hanging Woman Creek near Birney and Otter Creek near Ashland. In contrast to the Tongue River, tributaries below the reservoir derive their

most significant flows during and after precipitation. In most years these tributaries do not have consistent flows associated with snow melt runoff, and exhibit little base flow (1992 DEIS).

Elser et al. (1977) divided the Tongue River into five fisheries zones, defined primarily by the influence of the Tongue River Reservoir and a series of irrigation diversion dams (Figure 1). Immediately downstream from the dam (Zone 5), the Tongue River supports a cold-water fishery supporting trout, which are not native to the Tongue River. The fishery changes downstream to a more typical prairie river fishery comprised of native species such as sauger (*Stizostedion canadense*) and channel catfish (*Ictalurus punctatus*), supplemented with introduced species such as smallmouth bass (*Micropterus dolomieu*).

The Tongue River valley is bordered by hilly, sometimes rugged uplands that rise 200-500 feet above the valley floor. In the narrower upstream portion of the Tongue River Railroad area, these hills are close to the floodplain and are partially forested with ponderosa pine (*Pinus ponderosa*) and Rocky Mountain juniper (*Juniperus scopulorum*), particularly on north and east facing slopes. Downstream, steeper forested hills are interspersed with rolling grassland and shrubland benches.

The Tongue River meanders across the valley bottom. Its immediate banks are vegetated by deciduous forest in various stages of succession, from shrubs to mature cottonwood (*Populus deltoides*) gallery forest. Portions of the adjoining valley bottom have been developed for irrigated and dryland hay and crop production.

The combination of upland, riparian, agricultural and aquatic habitats supports a good diversity of terrestrial and aquatic wildlife. A total of 245 species of birds, 63 mammals, 13 reptiles, six amphibians and 49 species of fish have been documented in the Tongue River Railroad (ENTRIX, Inc. 2003).

The primary land use of the Tongue River project area along the Tongue River Railroad route is agriculture, particularly cattle grazing and hay production. There are operating coal mines near Decker (the south end of the Tongue River Railroad) and potential coal mines near Ashland. A portion of the Tongue River Railroad would cross land used by the Miles City Fish hatchery, and a portion of the railroad would cross the U.S. Department of Agriculture Livestock and Range Research Station (LARRS) near Miles City.

Most residential areas along the route are associated with ranches. The railroad route begins at Miles City (population about 8500) and passes by small communities at Ashland, Birney and (on the Northern Cheyenne Reservation) Birney Day Village. The Reservation's east boundary is the Tongue River. The Tongue River Railroad will not cross Reservation lands (U.S. Census Bureau 2000).

CURRENT STATUS OF THREATENED OR ENDANGERED SPECIES ALONG THE TONGUE RIVER RAILROAD

As discussed earlier, in January 1999 the USFWS identified six threatened or endangered species that might be affected by the Tongue River Railroad. Of those six species, the black-footed ferret and peregrine falcon are listed as endangered, the bald eagle is listed as threatened, the mountain plover is proposed for listing as threatened, and the swift fox and sturgeon chub are candidate species that could occur in the vicinity of the Tongue River Railroad (McMaster 1999).

As of September 2003, there are six threatened or endangered listed species and one species of conservation concern that might be affected by the Tongue River Railroad. Of those seven species, the black-footed ferret, pallid sturgeon, whooping crane and interior least tern (*Sterna antillarum athalassos*) are listed as endangered, the bald eagle is listed as threatened, the black-tailed prairie dog is a candidate species, and the mountain plover is species of conservation concern that could occur in the three counties in which the Tongue River Railroad traverses (USFWS 2003a, Nordstrom, personal comm. 2003; Hanebury, personal comm. 2003b.)

BLACK-FOOTED FERRET

Historically, the black-footed ferret ranged from the Canadian plains to the intermountain west and perhaps as far south as Mexico. As early as 1967, populations had been reduced to the point where the species was officially recognized as endangered. A major cause for the decline in the black-footed ferret is thought to be the 90-98 percent reduction of the range of prairie dogs (USFWS 1988).

No black-footed ferrets are known to occur in or near the vicinity of the Tongue River Railroad project area (MTNHP 2003). Ferrets were reintroduced into Montana in 1994 and in Wyoming in 1991. The Montana reintroduction site is more than 130 air miles northwest of the Tongue River Railroad route. The route is also more than 180 air miles from the Wyoming reintroduction site, and more than 120 air miles to the last known site of a naturally occurring ferret population near Meteetsee, Wyoming. Therefore, it is highly unlikely that black-footed ferrets from these three locations would disperse to the Tongue River Railroad vicinity.

In Montana, the goal is to reestablish two viable populations with a minimum of 50 breeding adults in each. Nationwide, the objective is to increase the captive population to 250 breeding adults and to establish a wild pre-breeding population of 1,500 adults in 10 or more locations by 2010. In 1994, ferrets were released into black-tailed prairie dog towns northeastern Montana's C.M. Russell National Wildlife Refuge. This reintroduced ferret population is not well established at this time, and therefore, there is ongoing concern about the genetic viability of the captive

population (MFWP 2003b). Additionally, there is another possible reintroduction site in Montana; however, it is located in Custer Creek between Terry and Miles City on the Yellowstone River (Dood, personal comm. 2003).

There is also a BLM designated wildlife area of critical environmental concern (ACEC) located in Custer and Prairie counties, Montana. It encompasses 11,166 acres and is considered a potential reintroduction area for the black-footed ferret because it has 1,151 public acres of active prairie dog towns. ACEC designations highlight areas where special management attention is needed to protect and prevent irreparable damage to important historic, cultural and scenic values; fish, wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards (BLM 2003). However, this ACEC is not in the project area, it is east of Miles City (Rau, personal comm. 2003).

Critical habitat for the black-footed ferret is considered prairie dog colonies (Biggins et al. 1985, USFWS 1989). In the Tongue River area, black-tailed prairie dogs excavate colonies in grasslands on gentle to rolling slopes on benches adjacent to the river, as well as in upland habitats away from the valley bottom. The USFWS (USFWS 1989) determined that, in order to constitute acceptable black-footed ferret habitat, black-tailed prairie dog colonies or complexes of colonies (a prairie dog colony complex is defined as two or more neighboring colonies each less than four miles from the other) must be at least 80 acres in size. Further, colonies should contain 4.7 active burrows/acre (Biggins et al. 1993). Prairie-dog colonies along the Tongue River Railroad are described in the BLACK-TAILED PRAIRIE DOG section.

Of all of the black-tailed prairie dog colonies found in a U.S. Forest Service surveys (2003), current colonies recorded in a Spring 2003 survey included one colony (not including complexes of colonies) that was greater than 80 acres in 2003 (approximately 129 acres) and was found approximately 14 miles east of the Tongue River, southeast of Birney. Historical prairie dog was also available from MTNHP (2003); however, data are point locations. Of all of the prairie dog colonies reported in Bureau of Indian Affairs (BIA) (2003) data, 121 colonies were reported. The average size of the colonies in 2001 was approximately 28 acres and of these colonies, nine were greater than 80 acres (not including complexes of colonies). However, none were within 0.5 miles of the project area (including route and 200 ft construction buffer) (0.5-mile buffer from BLM 2002b).

In spring 2004, an aerial survey will be conducted to delineate potential black-tailed prairie dog active colonies along the proposed Tongue River Railroad. A ground reconnaissance using USFWS (1989) black-footed ferret survey guidelines will subsequently be conducted to determine the status of the above documented prairie dog colonies and any others found on aerial survey. Following the survey, the results will be provided to relevant resource agencies.

PALLID STURGEON

The pallid sturgeon was federally listed as endangered in 1990. Altered flow regimes caused by the damming of large rivers have resulted in the decline of pallid sturgeon populations in Montana from its historic range. This range included the Missouri River in Montana to its confluence and the Mississippi River from Illinois to its confluence. This species was also historically found in large tributaries of the Missouri and Mississippi Rivers including the Yellowstone. Presently, in Montana, pallid sturgeon are found in the Missouri River from the Montana/North Dakota state line upstream to Fort Peck Dam and from upstream of Fort Peck Reservoir (Nichols Coulee) to Stafford Ferry. Pallid sturgeon are also found in the lower Yellowstone River from the state line upstream to near Fallon, MT (Gardner 2001).

Pallid sturgeon is a large river fish that resides in deep-water areas of the main channel. This species preferred habitat is comprised of sand flats and gravel bars in large, silty rivers with swift currents (Bramblett 1996).

Currently, there are no known occurrences of the pallid sturgeon in the Tongue River. However, the possibility exists that reintroduction of the pallid sturgeon in the Tongue River may occur in the future (Hanebury, personal comm. 2003a).

WHOOPING CRANE

The whooping crane was listed as endangered in 1970 and critical habitat was designated in 1978. Any whooping cranes found within the Tongue River Railroad area are be migrants, as indicated by the principal and breeding areas in the Whooping Crane Recovery Plan. Marshes, lake, ponds, and rivers provide nesting and migration habitat for the main wild population which nests in Wood Buffalo National Park (WBNP) and adjacent areas of Canada. Historic population declines resulted from habitat destruction, shooting, and displacement by activities of man (USFWS 1994).

Today most whooping cranes migrate from Wood Buffalo National Park in Canada to Aransas NWR on the Texas coast. This route passes south-south eastward through northeastern Alberta, southcentral Saskatchewan, northeastern Montana, western North Dakota, western South Dakota, central Nebraska and Kansas, west-central Oklahoma, and east-central Texas. Scattered occurrences have, however, been reported in adjacent states and provinces (USFWS 1994).

Whooping cranes are diurnal migrants, rarely continuing after dark, with regular stops to feed and rest. They travel as singles, pairs, family groups, or flocks of 4-5 adults. During migration, birds roost in shallow water in lakes, ponds, or riverine areas and then fly or walk to loafing or feeding areas. They sometimes join sandhill cranes for a portion of the migration (Lewis 1995). Tundra swan hunts recently initiated in the northern Great Plains (Montana, 1983; North Dakota, 1988; South

Dakota, 1990), also present opportunities for misidentification of whooping cranes and accidental shooting (USFWS 1994).

Whooping cranes use a variety of habitats during migration (Howe 1989, Kuyt 1992). Twenty-seven cranes were monitored for one or more seasons, including nine radio-marked birds and others that associated with them (Howe 1989). They fed primarily in a variety of croplands and roosted in palustrine (marshy) wetlands. A majority of the roosting wetlands were less than 10 acres (75 percent) and less than a mile a suitable feeding site. More than 40 percent of the roosting wetlands were smaller than one acre. Although heavily vegetated wetlands were generally not used, family groups appeared to select more heavily vegetated wetlands than non-families. Cropland was utilized for 70 percent of the feeding sites of non-families, but wetlands were utilized for 67 percent of the feeding sites of families (Howe 1989).

To date, there are no documented occurrences of the whooping crane within the Tongue River railroad route. If whooping cranes do utilize the Tongue River, it is infrequently at most (Carlson 2003b).

INTERIOR LEAST TERN

The interior least tern is migratory and has historically bred along the Mississippi, Red and Rio Grande River systems and rivers of central Texas. The breeding range extended from Texas to Montana and from eastern Colorado and New Mexico to southern Indiana (USFWS 1990). It breeds on the Missouri River to eastern Montana (Thompson et. al 1997). In Montana, breeding interior least terns recently have been recorded both on the Yellowstone River, and on the Missouri River between Fort Peck Reservoir and North Dakota (USFWS 1990).

The riverine nesting areas of interior least terns are sparsely vegetated sand and gravel bars within a wide unobstructed river channel, or salt flats along lake shorelines. Nesting locations usually are at the higher elevations and away from the water's edge because nesting starts when the river flows are high and small amounts of sand are exposed. The size of nesting areas depends on water levels and the extent of associated sandbars (USFWS 1990).

Essential Habitat in Montana lies in segments of the Missouri River (USFWS 1990). The known breeding areas in Montana in the Missouri River System do not include the project area (USFWS 1990).

There are no documented occurrences of the interior least tern in the railroad project area. The closest documented occurrence to the railroad route of this species was approximately nine miles away on the Yellowstone River, downstream of the Tongue River confluence (Carlson 2003a, Montana Bird Distribution Database 2001, MTNHP 2003). In addition, MTNHP (2003) reported a composite occurrence that

represents four observations of breeding attempts from 1994 to 1996 approximately 22 miles northeast of Miles City.

Hanebury (personal comm. 2003b) stated that a survey would be required if the route traversed or followed the Yellowstone River. The project route neither crosses nor follows the Yellowstone River, and the interior least tern does not inhabit the Tongue River.

BALD EAGLE

Since the late 1970's, the bald eagle has substantially increased its nesting distribution and numbers. Consequently the USFWS downlisted the bald eagle from endangered to threatened in 1995. This species can occur in the Tongue River Railroad project area in nesting, migrating, and wintering populations.

Nesting Population

Montana is included in the seven-state Pacific Bald Eagle Recovery Area. In 1978 there were only 12 known breeding areas for bald eagles in Montana (USFWS 1995). By 1998, there were more than 250 known breeding sites in Montana (Flath 1999a). Currently, in 2003, there are over 300 nesting pairs in Montana (DuBois, personal comm. 2003).

At this time, there are three major nesting territories along the Tongue River (Farmer, personal comm. 2003, DuBois, personal comm. 2003, Rau, personal comm. 2003). The following discussion describes the current nests and historical nests along the Tongue River. MFWP (2003a) has recent data from infrequent nest checks; however, no complete surveys have been done on the Tongue River in several years (DuBois, personal comm. 2003).

Nest 01

In the mid-1980's, a pair of bald eagles exhibited pair-bonding activity near a nest in a cottonwood tree along the Tongue River about 2.5 miles below the dam. In this BA, this nest will be referred to as Nest 01. No egg-laying occurred and in subsequent years this nest was also used by golden eagles (USFWS 1992). MFWP (2003a) records also indicate that it was inactive in 1994.

Nest 02

In spring 1992 a pair of bald eagles established a nest in a cottonwood tree about eight miles downstream from the dam (Harms 1992). In this BA, this nest will be referred to as Nest 02. In 1992-1993, Nests 01 and 02 were apparently used interchangeably by the same pair of bald eagles (Flath, personal comm. 1994). In spring 1994, Nest 01 was occupied by bald eagles but was destroyed in a windstorm; Nest 02 was not occupied (MFWP 2003a). It was expected that that

these bald eagles would construct a new nest somewhere downstream from the dam, or would reoccupy Nest 02 (Flath, personal comm. 1994). This assumption was correct, and a great blue heron nest about two miles downstream from the dam was occupied by bald eagles in March 1995. For the purposes of this BA, this nest will be referred to as Nest 03 (and discussed below).

Nest 02 may have also been destroyed, as it could not be located in March 1995 (Berry, personal comm. 1995 and 1999). WESTECH biologists could not find this nest in February 1998, nor could other biologists find it on March 1, 1999 (Berry, personal comm. 1999).

Loss of bald eagle nests is not uncommon. In Montana, an average of seven percent (range 3-15 percent) of all bald eagle nests are lost each year; the continent-wide nest turnover rate is also seven percent (range 5-20 percent). Nests may fall out of trees or the tree may be lost (MBEWG 1994). Thus, while certain nests may remain active for many years, it is not unusual for the location of a nest site within a bald eagle nesting territory to change (Flath, personal comm. 1995).

Nest 03

Nest 03 has been active every year since 1995. In 1998 it fledged two young eagles (Flath, personal comm. 1998). It was observed during an aerial survey of the Tongue River valley and Tongue River Railroad route on April 16, 1999, and was again active and successful (MFWP 2003a). One adult was in the nest while the other was perched nearby. Since the April 1999 aerial survey, more recent data (MFWP 2003a) documents this nest as active and successful in 2001 and 2002. In 2002, there were two fledglings from this nest. Data has not been processed for 2003 to date. The location of Nest 03 is shown in Figure 2. It is about 3700 feet (0.7 mile) from the Western Alignment portion of the Tongue River Railroad.

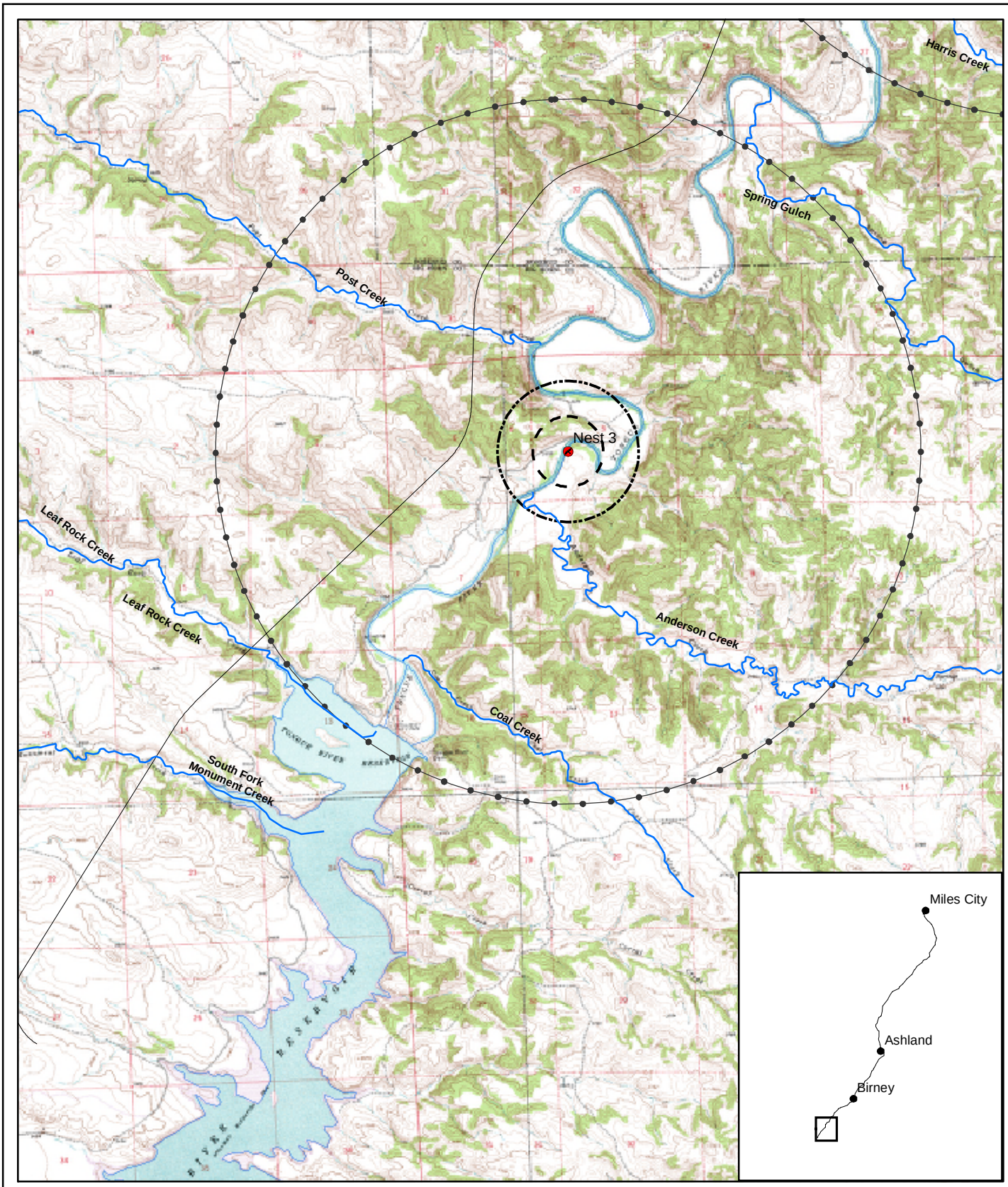
Nest 02 Alternate

During the April 16, 1999 aerial survey, a large stick nest was observed in a cottonwood tree about 0.3 mile downstream from the previous location of Nest 02. This nest was similar in size and shape to Nest 03, suggesting that it could have been constructed by bald eagles. No eagles were seen at or near the nest on April 16, 1999; instead, it was occupied by a red-tailed hawk. Bald eagles may build alternate nests within a breeding area (MBEWG 1994). In this BA, this nest will be referred to as Nest 02 Alternate. No recent data is known about this nest (MFWP 2003a). Its location is shown on Figure 3. It is about 4300 feet (0.8 mile) from the Western Alignment portion of the Tongue River Railroad.

Nest 04 / Nest 04 Alternate

An active bald eagle nest was found about 39 air miles up the valley (south) from Miles City in 1992. This nest, referred to as Nest 04 in this BA, has been active

every year since 1992. In 1998, two young eagles fledged from this nest (Flath, personal comm. 1998). It was again active on April 16, 1999, with one adult on the nest and the other perched nearby. This territory has been active through 2002 (MFWP 2003a). In 2000, a neighboring Nest 04 was active. In this BA, this nest will be referred to as Nest 04 alternate (DuBois, personal comm. 2003). The exact location of the Nest 04 alternate is not known and it was documented as very close, therefore, for the purposes of this BA, the location of Nest 04 and Nest 04 Alternate are in the same location, as an active territory. In 2000 and 2002, Nest 04 alternate nest was successful; yet unsuccessful in 2001. In 2003, there is no production data, but incubation was observed on this nest; therefore, it was active in 2003 (MFWP 2003a). Its location is shown in Figure 4. It is about 4750 feet (0.9 mile) from the Tongue River Railroad.



Legend

- Bald Eagle Nest
- Proposed Route
- Zone 1
- Zone 2
- Zone 3

0 1 2 Miles

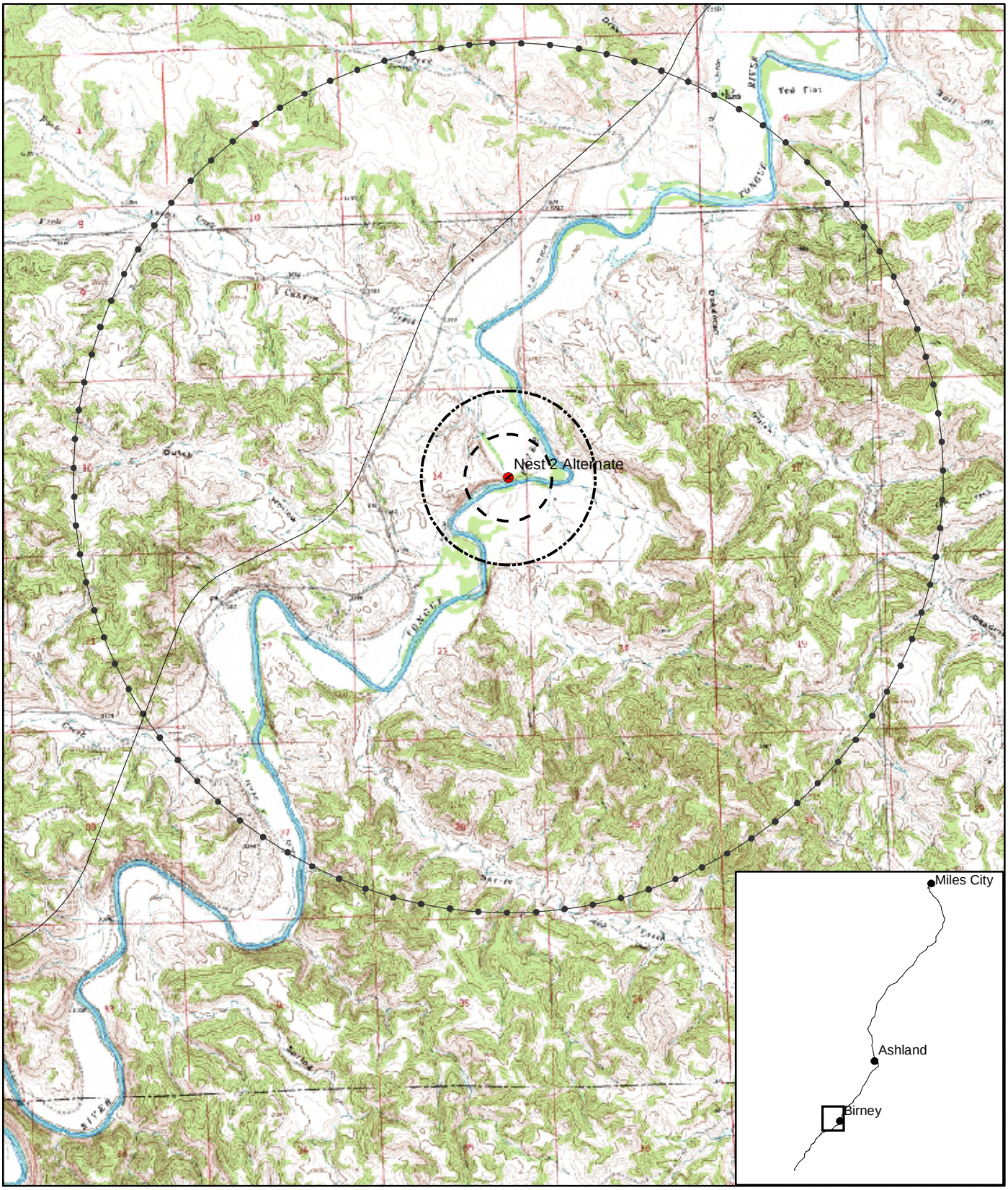
N

E N T R I X

Figure 2
Nest 03
Bald Eagle Management Zones
In Relation to the Tongue River
Railroad Route

Prj No. 3079712 Date: 9/2003

J:\Arcview\3079712-Public Affairs Management\Figure 2 Bald Eagle with streams.mxd



Legend

- Bald Eagle Nest
- Proposed Route
- Zone 1
- Zone 2
- Zone 3

0 0.5 1 Miles

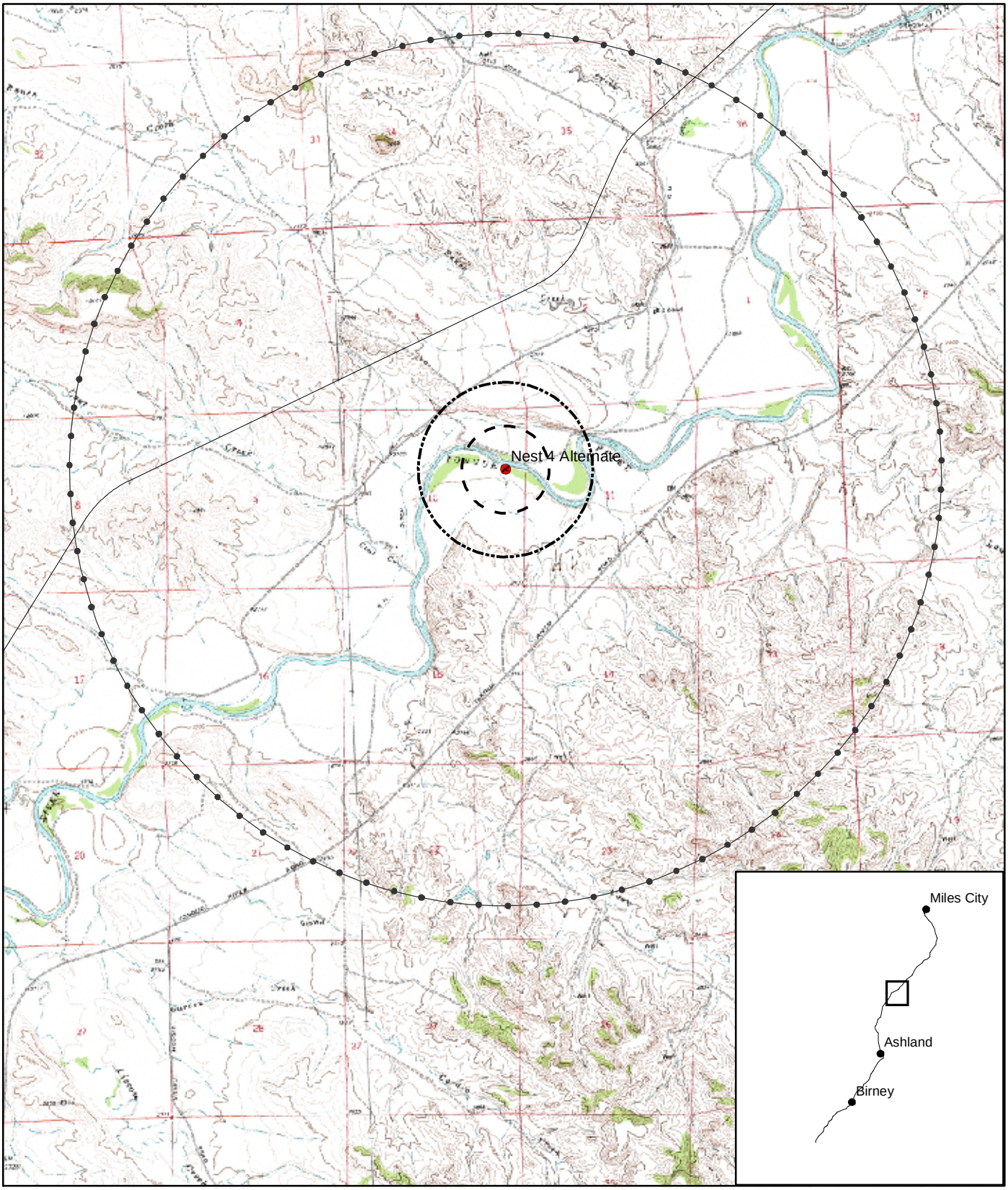
N

ENTRIX

Figure 3
Nest 02 Alternate
Bald Eagle Management Zones
In Relation to the Tongue River
Railroad Route

Prj No. 3079712 Date: 9/2003

Map Document: (J:\Arcview\3079712-Public Affairs Management\Figure 3 Bald Eagle.mxd)



Legend

- Bald Eagle Nest
- Proposed Route
- Zone 1
- Zone 2
- Zone 3

0 0.5 1 Miles

N

ENTRIX

Figure 4
Nest 04 Alternate
Bald Eagle Management Zones
In Relation to the Tongue River
Railroad Route

Prj No. 3079712 Date: 9/2003

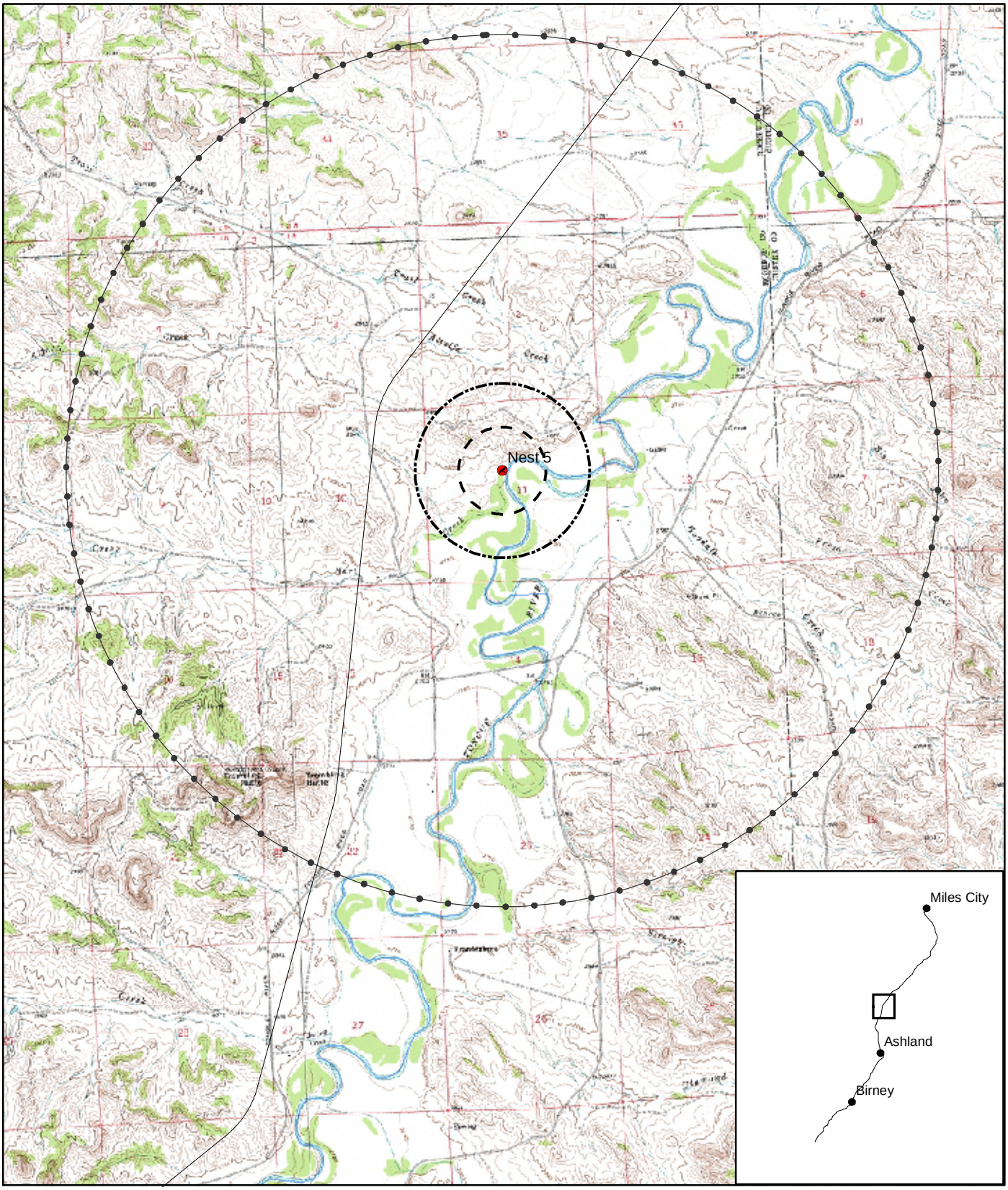
Map Document: (J:\Arcview\3079712-Public Affairs Management\Figure 4 Bald Eagle.mxd)

Nest 05

In early 1999 TRRC and STB were contacted by local residents regarding the possibility of a bald eagle nest several miles south of Nest 04. During the April 16, 1999 aerial survey, a nest (in this BA, this nest is referred to as Nest 05) was observed in a cottonwood about eight air miles upstream (south) of Nest 04. A dead adult bald eagle was lying in the nest. This bird appeared to have died recently, because the carcass had not been scavenged or otherwise deteriorated. No other eagles were nearby, although a single adult was seen about six miles further south. The area of this sighting was searched during the aerial survey, but no other nest was found. The status of this nest in 2000 is unknown, and in 2001 there was another species at this nest. In 2002, this nest was inactive (MFWP 2003a). In 2003, data was either not collected or has not yet been processed for this nest. In September, 2003, more information may be available (DuBois, personal comm. 2003). The location of Nest 05 is shown in Figure 5. It is about 4000 feet (0.75 mile) from the Tongue River Railroad.

Nest 06

During the aerial survey on April 16, 1999 a large stick nest was found in a small, apparently inactive great blue heron rookery in large cottonwood trees along the Tongue River about 11 air miles up the valley (south) of Ashland. This nest was similar in size and shape to Nest 03, which was also originally a great blue heron nest that had been appropriated by bald eagles. On April 16, 1999 there were two large white eggs in the nest, but no bald eagles, golden eagles or other raptors were seen in the general vicinity. Two Canada geese were seen along the river bank a short distance away. Canada geese sometimes appropriate great blue heron and raptor nests, and it is possible that the eggs that were observed in the nest were the first eggs of a clutch laid by Canada geese. The nest was checked again about 1 1/2 hours later, but there were still no birds at or near it. On April 26, however, TRRC personnel observed a Canada goose on this nest, and about six great blue herons in the rookery (Day, personal comm. 1999). In the MFWP (2003a) database, this nest is not documented and no other data are available (DuBois, personal comm. 2003). In this BA, this nest is referred to as Nest 06. Its location is shown in Figure 6. It is about 6200 feet (1.2 miles) from the Tongue River Railroad.



Legend

- Bald Eagle Nest
- Proposed Route
- Zone 1
- Zone 2
- Zone 3

0 0.5 1 Miles

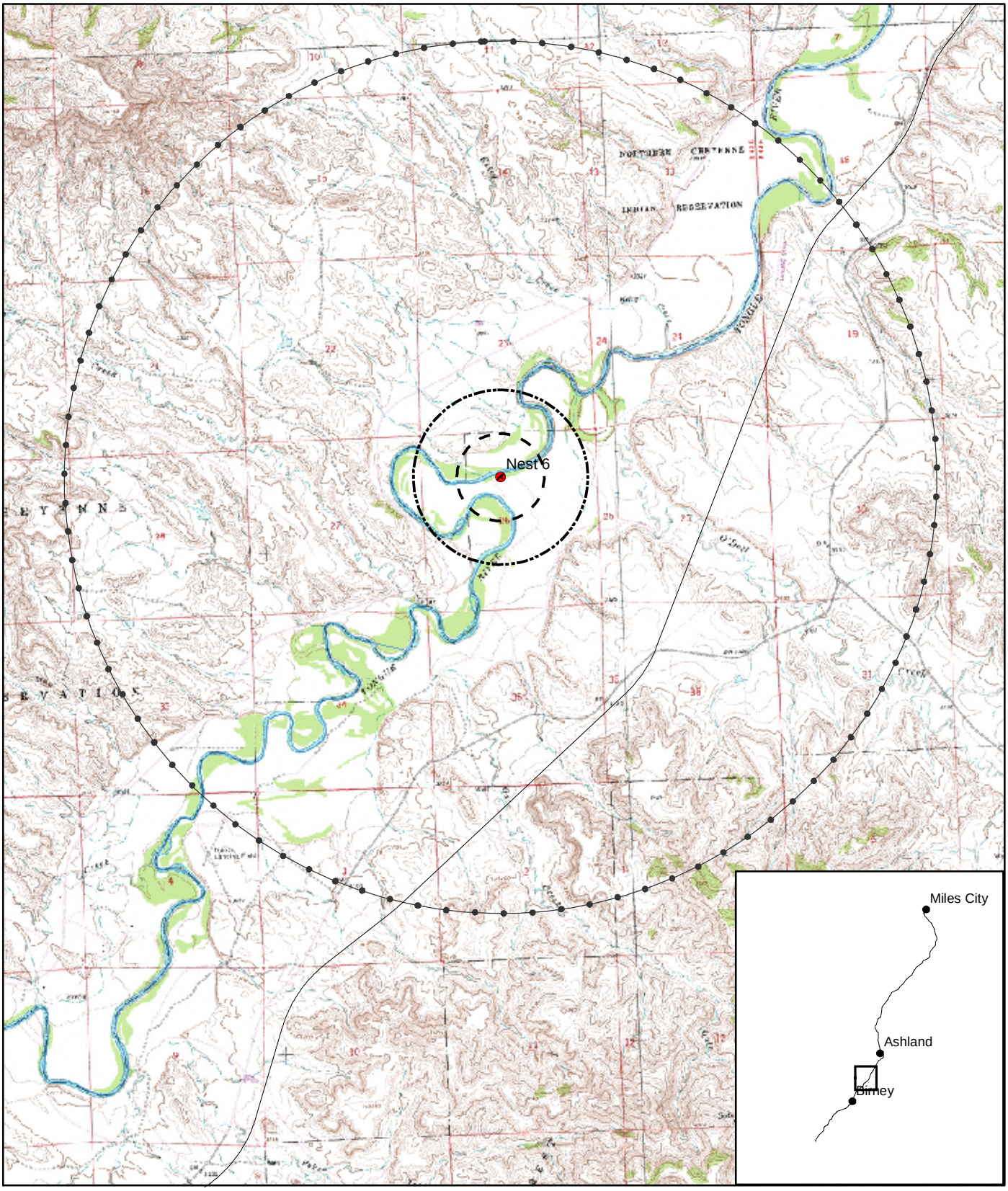
N

ENTRIX

Figure 5
Nest 05
Bald Eagle Management Zones
In Relation to the Tongue River
Railroad Route

Prj No. 3079712 Date: 9/2003

Map Document: (J:\Arcview\3079712-Public Affairs Management\Figure 5 Bald Eagle.mxd)



Legend

- Bald Eagle Nest
- Proposed Route
- Zone 1
- Zone 2
- Zone 3

0 0.5 1 Miles

N

E N T R I X

Figure 6
Nest 06
Bald Eagle Management Zones
In Relation to the Tongue River
Railroad Route

Prj No. 3079712 Date: 9/2003

Map Document: (J:\Arcview\3079712-Public Affairs Management\Figure 6 Bald Eagle.mxd)

Other Nests Outside of the Project Area

In addition to the nests in the vicinity of the Tongue River Railroad, bald eagles have also successfully nested along the Tongue River upstream from the Tongue River Reservoir (Phillips et al. 1990). This nest was also in a cottonwood tree. A new nesting territory was apparently being occupied in late winter/early spring 1999 above the Tongue River Reservoir (Berry, personal comm.,1999; Flath, personal comm. 1999b). During the aerial survey on April 16, 1999 an active bald eagle nest was found about 1.5 miles upstream from the upper end of the Tongue River Reservoir. Since the 1999 survey, more recent data (MFWP 2003a) document a nest in the same territory (in this BA, this nest is referred to as alternate nest) that was active through 2001. In 2000, it was active and successful, and it was used again in 2001. In 2002, this nest was active and successful with one fledgling. Data for 2003 are not available. This nest is about 6.5 miles south of the Tongue River Railroad tie-in with the existing Spring Creek Rail Spur, so it will not be considered further in this BA. It is notable, however, that the nest is about 1200 feet (0.23 mile) from the existing BNSF rail line from Sheridan, Wyoming to the Decker coal mines.

This area was also surveyed by air in January 2003. Observations from this survey include a nest approximately 6.5 miles south of the Tongue River Railroad tie-in with the existing Spring Creek Rail Spur (Hayden-Wing 2003, Hayden-Wing, personal comm. 2003).

Wintering / Migrant Population

Bald eagles also occur along the Tongue River as migrants and winter residents. They forage on fish, waterfowl, carrion, etc. During migration, as many as 50 bald eagles have been counted along the Tongue River from Miles City to the upper end of the Tongue River Reservoir (Farmer 1992).

The value of the river immediately below the Tongue River Dam as an attractant for migrant and wintering bald eagles has been recognized (Lockhart and McEneaney 1978, Albers 1995). It was estimated that an average 10-15 bald eagles winter along the river below the dam (USFWS 1992). Currently, there are approximately 10 to 60 wintering bald eagles along the Tongue River (Hazelwood, personal comm. 2003). This estimate does not include any migrants that may be passing through. Through a multiple agency effort of national winter bald eagle surveys, John Berry has done mid-winter surveys along the Tongue River (Hazelwood, personal comm. 2003).

A mid-winter survey was done by John Berry (Berry, personal comm. 2003, Hazelwood, personal comm. 2003) in January of 2001 and 2002 from Ashland to the Wyoming border. In January 2001, 13 bald eagles were recorded on an aerial survey along the Tongue River; 9 adults and 4 juveniles. In 2002, 15 bald eagles were found along the Tongue River in January. The survey started in the morning with mild conditions and 80% ice cover. Of the 15 bald eagles recorded, there were

eight adults and seven juveniles. A mid-winter survey of the Tongue River was not conducted during 2003. Potentially, a mid-winter survey in 2004 may be performed by John Berry.

During a January 2003 survey (Hayden-Wing 2003) along the Tongue River, primarily south of the Tongue River Reservoir, a perch site was noted approximately 4.5 miles south of the tie-in (Hayden-Wing, personal comm. 2003). The Tongue River Railroad does not fall within the 2.5-mile home range nest site management zone or the 0.25-mile wintering diurnal perching area zone of either observation (MBEWG 1994).

In early spring 2004, an aerial survey will be conducted for the Bald Eagles nesting and/or wintering individuals (BLM 2002b) along the proposed Tongue River Railroad and information will be provided to relevant resource agencies. If construction is delayed or for a longer period than planned, then additional surveys may be needed. Relevant resource agencies will discuss any additional surveys, if needed.

MOUNTAIN PLOVER

On February 16, 1999, the USFWS proposed to list the mountain plover as a threatened species. Breeding occurs in the Rocky Mountain States from Canada south to Mexico with most breeding birds occurring in Montana and Colorado (USFWS 1999). On September 8, 2003, the USFWS withdrew the proposal to list the mountain plover as a threatened species (USFWS 2003b). Although the mountain plover is no longer a proposed species, this BA will discuss this species at the request of USFWS (Hanebury, personal comm. 2003b).

Critical habitat for mountain plovers in Montana is generally considered to be short-grass prairie and shrub-steppe landscapes; dryland, cultivated farms; and prairie dog towns. Nest sites are usually where vegetation is sparse or absent, which are conditions that can be created by herbivores (i.e, domestic livestock and prairie dogs). Vegetation in these sites are typically less than four inches tall; although, they are surrounded by areas dominated by shrubs (USFWS 2002). It nests in sites that are primarily short-grass prairies used by prairie dogs and 27% of area is bare ground (Knopf 1996). As discussed earlier, black-tailed prairie dog colonies are present on or near portions of the Tongue River Railroad route, particularly from Miles City to Ashland.

There are no records of nesting mountain plovers from the Tongue River Railroad area (Flath, personal comm. 1998). A search of the biological database for an area within 6-10 miles of the Tongue River Railroad route also yielded no records of this species (MTNHP 1999). There was an unconfirmed record of the mountain plover from the mid-1970s about 15-20 miles west of the Tongue River Reservoir (WESTECH 1982). USFWS (1999) reported that breeding mountain plovers have been confirmed in Big Horn County, but they have apparently not been recorded in

Custer, Rosebud or Powder River Counties. The closest documented observation to the Tongue River Railroad was in 1995, where several observations were reported as breeding but no specific data was reported. This observation was approximately 75 miles west of Miles City (MTNHP 2003).

Observations of mountain plover nesting habitat or presence will be noted during black-tailed prairie dog and black-footed ferret surveys. Any information recorded about the mountain plover during project-related surveys will be reported to relevant resource agencies.

BLACK-TAILED PRAIRIE DOG

The black-tailed prairie dog was listed as a candidate species in February of 2000. The historic range of the black-tailed prairie dog included portions of eleven States, Canada, and Mexico. The range, currently, occurs from extreme south-central Canada to northeastern Mexico and from approximately the 98th meridian west to the Rocky Mountains. The species is currently present in 10 States including—Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming (USFWS 2000).

According to FaunaWest (1998), the Tongue River area, including the Northern Cheyenne Indian Reservation, represents a major prairie dog complex. As seen on the Northern Cheyenne Reservation, this area has the potential to develop dense prairie dog colonies along the Tongue River bottomlands and the tributary drainages.

Historically, prairie dog populations on non-Native American lands in the Tongue River valley have been controlled through poisoning and shooting. Consequently, colonies tend to be small. Depending on landowner tolerance, both the number of colonies and the size of individual colonies (both areal size and the density of active burrows) may gradually increase before control measures are again applied.

On Native American lands (i.e., the Northern Cheyenne Indian Reservation), prairie dog control has been much less consistent or systematic. In the early 1990's, investigators identified a large black-tailed prairie dog complex on the Reservation (GeoResearch, Inc. 1991). This complex encompassed about 11,000 acres of active prairie dog colonies. In the early 1990s many of these colonies were debilitated by sylvatic plague, reducing the size of the active complex to about 650 acres by 1995 (FaunaWest 1998).

However, prairie dogs may reoccupy affected colonies (Hanebury, personal comm. 1999). By 1998 there were approximately 1500 acres of active prairie dog colonies on the Northern Cheyenne Reservation (FaunaWest 1998).

In the early 1990s the USFWS expressed concern that prairie dog colonies on the east side of the Tongue River (non-Native American lands) might be part of the Northern Cheyenne complex (1992 DEIS). Rivers might be seasonal barriers to black-footed ferret movement (Biggins et al. 1993); however, considering the historical distribution of ferrets from Canada to Mexico (Hillman and Clark 1980), it is improbable that streams the size of the Tongue River represent impassable barriers to ferret dispersal. Even if the Northern Cheyenne black-tailed prairie dog complex is redefined to include some of the colonies east of the river, however, the percentage of the complex east of the river would undoubtedly be very small (1992 DEIS).

Black-tailed prairie dog colonies along the approximate ROW of the Tongue River Railroad were mapped during an aerial survey on April 16, 1999. Thirty-six colonies were mapped on or near (within 3 miles on either side) the ROW. Of the 36, 28 were located on the Miles City to Ashland rail line, eight were found on the first 21 miles of the Ashland to Decker extension, and none were observed on the Western Alignment. Of the 28 colonies mapped on the Mile City to Ashland route, 26 were found on that part of the route located on the west side of the Tongue River between Miles City and about 10 miles north of Ashland. FaunaWest (1998) had reported many colonies in this general vicinity, so the comparatively large number of colonies counted in this area was not surprising.

Many of these colonies appeared to have been affected by plague and/or control efforts, a circumstance that was expected because FaunaWest (1998) had reported similar observations. In some colonies, burrows appeared to be widely separated. In other colonies, there were many burrows but few prairie dogs were observed and there appeared to be little recent evidence (fresh digging) at burrow entrances. Consequently, it was not possible to differentiate the active portions of colonies during the aerial survey, and it was difficult to accurately map the outside boundaries of colonies. However, it was estimated that the 36 colonies observed near the Tongue River Railroad route ranged in size from about two acres to about 450 acres, and averaged about 45 acres; 17 of 36 (47 percent) were estimated to be less than 10 acres in size. In comparison, FaunaWest (1998) surveyed 118 colonies in Custer County (some of which were probably also counted during the Tongue River Railroad aerial survey) and reported that the largest was 491 acres, while the average was about 51 acres.

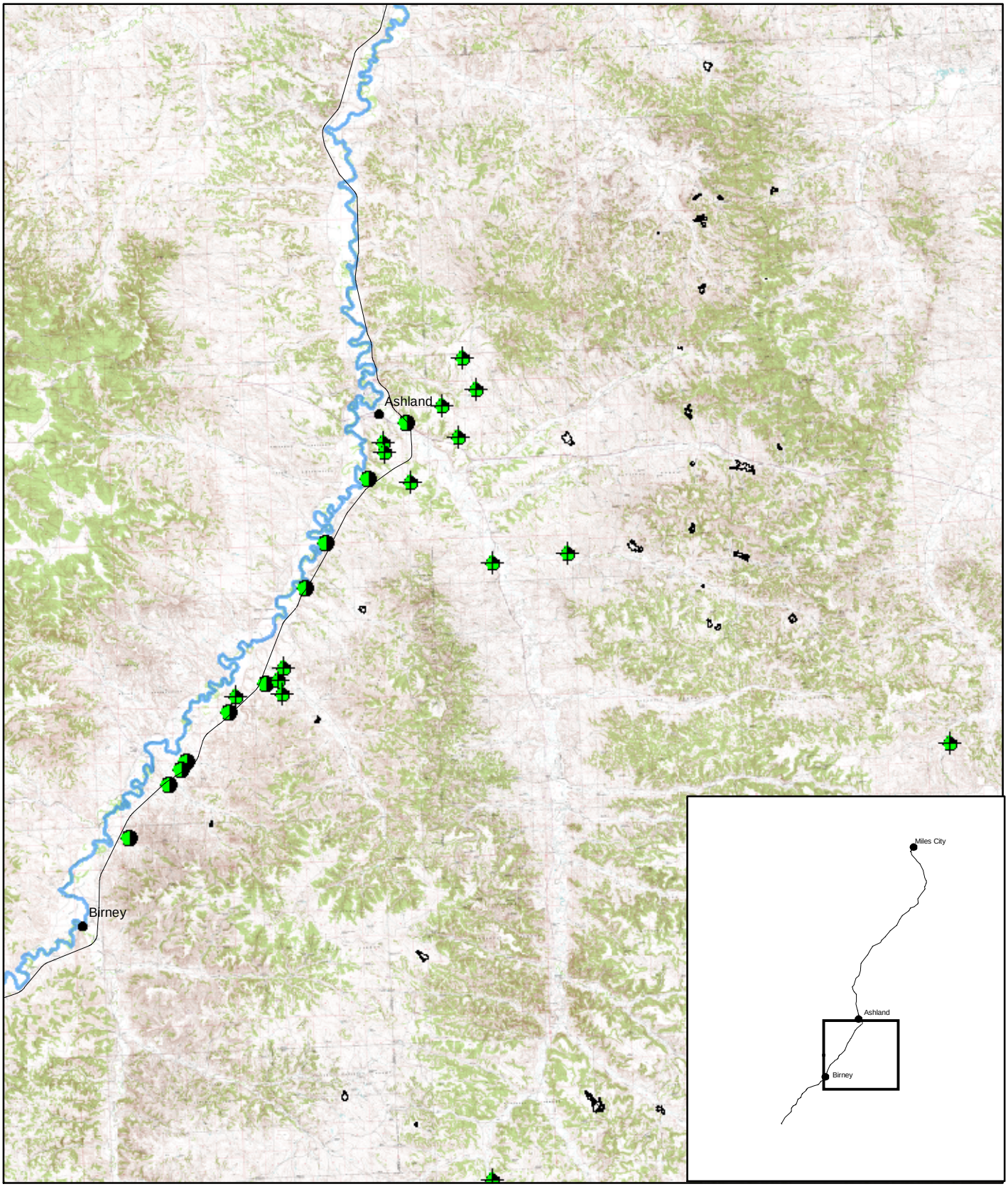
MTNHP (2003) also provided historical data; data included 1997 and 1998 point locations of prairie dog colonies. These point locations are shown on Figures 7 and 8. There are 83 point locations mapped from 1997; 48 point locations mapped from 1998; and 102 point locations mapped from Northern Cheyenne Reservation and collected in 1997, which were represented as polygons from the BIA (2003) data.

Other survey data from the Bureau of Indian Affairs (2003) also reports both historical data (1989-2000) and current (2001) prairie dog colonies along the Tongue

River (Figure 8). These data include ground surveys of the Northern Cheyenne Tribal Lands along the Tongue River. These historical surveys reported 39 historical prairie dog colonies in 1989; 109 reported in 1990; 90 in 1994; 67 in 1995; 80 in 1996; 103 in 1997; 99 in 1998; 141 in 1999; and 110 in 2000 along the Tongue River (Figure 8). The average area of the historical colonies found from 1989-2001 was approximately 25 acres. In 2001, the most recent data from BIA (2003), 121 colonies were reported. The average size of the colonies in 2001 was approximately 28 acres. None of these colonies were within 0.5 miles of the project area (including route and 200 ft construction buffer) (0.5-mile buffer from BLM 2002b). Of these colonies, nine were greater than 80 acres.

The U.S. Forest Service, conducted prairie dog surveys from 1999-2003 (Sasse, personal comm. 2003, USFS 2003, Whitford, personal comm. 2003). Each survey was conducted as a ground survey using a topographic map and delineating the town on the map or recording the area with a GPS (Geographic Positioning System), which were then digitized into a shapefile. The survey includes areas along or adjacent to the Custer National Forest. These surveys reported 38 historical prairie dog colonies in 1999, one reported in 2000, and 10 in 2001 along the Tongue River from 1999-2003 (Figure 7). None of these colonies (less than 50 acres) were within 0.5 miles of the project area (including route and 200 ft construction buffer) (0.5-mile buffer from BLM 2002b). Of these colonies, two were greater than 80 acres, and were active in 1999. The average area of the historical colonies found from 1999-2002 was approximately 22 acres. Thirty-seven of these were active, 8 of them were inactive and the statuses of 4 of them were unknown. In spring, 2003, 32 possible prairie dog colonies along the Tongue River in 2003 were located (Figure 7). The status of these colonies were undetermined as active or inactive during this survey due to land ownership restrictions and time limitations. The average area of the historical colonies found in 2003 was approximately 18 acres. A total of 11 colonies (less than 50 acres) are within 0.5 miles of the project area (including route and 200 ft construction buffer) (0.5 mile buffer from BLM 2002b). The Tongue River Railroad could traverse one of the 11 colonies. The proposed route could potentially impact 1.5 acres of this 2.8 acre colony if it is an active colony at the time of construction.

In spring 2004, an aerial survey will be conducted to delineate potential black-tailed prairie dog active colonies along the proposed Tongue River Railroad. A ground reconnaissance would subsequently be conducted to determine the status of the above documented colonies and any others found during the aerial survey. Following the survey, the results will be provided to relevant resource agencies.



Legend

Proposed Railroad Route

Historical Praire Dog Colonies (1999-2002)

Prairie Dog Towns 2003

Prairie Dog Colonies

Colonies within 1/2 mile of buffer

Colonies > 80 acres

0 3 6 Miles

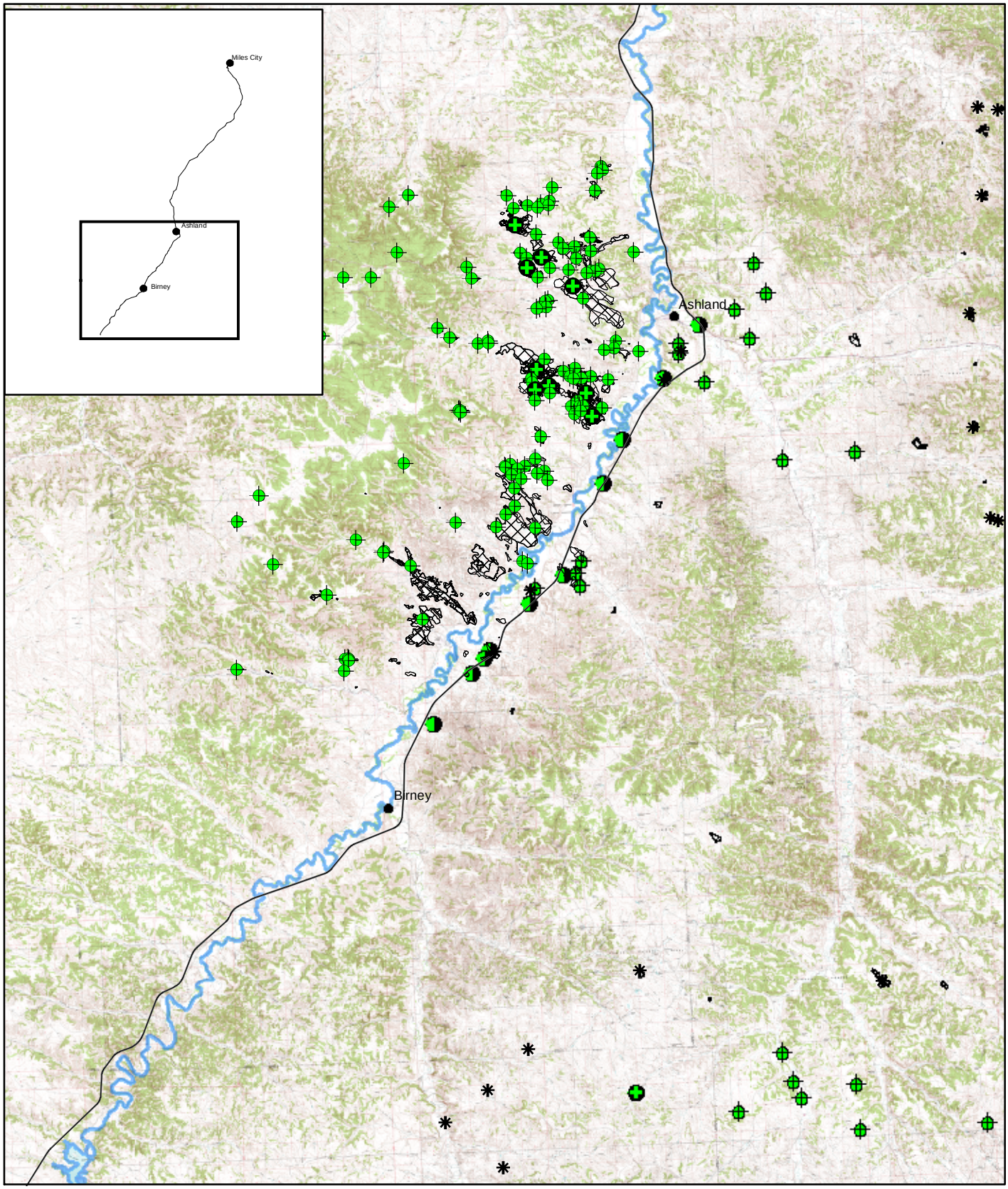
N

E N T R I X

Figure 7
Prairie Dog Colonies
In Relation to the Tongue River
Railroad Route

Prj No. 3079712 Date: 9/2003

Map Document: (J:\Arcview\3079712-Public Affairs Management\Figure 7 Praire Dog Colonies.mxd)



Legend

Proposed Railroad Route

Historical Prairie Dog (1999-2002 - USFS) (BIA - 1989-2000)

Historical Prairie Dog (MTNHP) (1997-1998)

Current Prairie Dog Towns (2003 - USFS) (2001 - BIA)

Prairie Dog Colonies

Colonies within 1/2 mile of buffer

Colonies > 80 acres

0 2.5 5 Miles

N

E N T R I X

Figure 8
Prairie Dog Colonies
In Relation to the Tongue River
Railroad Route

Prj No. 3079712 Date: 9/2003

Map Document: (J:\Arcview\3079712-Public Affairs Management\Figure 7 Praire Dog Colonies.mxd)

METHODS

The information for this Biological Assessment was collected from November 1998 through April 1999 and then updated from August through September 2003. Additional field data will be collected in the spring of 2004. Collection methods included: 1) review of existing information; 2) contact with knowledgeable parties; and 3) appropriate surveys.

Literature reviewed for information regarding endangered or threatened species in the area potentially affected by the Tongue River Railroad included: administrative files provided by the USFWS; wildlife inventory reports from the Montco Mine from the late 1970s through the mid-1980s; the 1983 DEIS, 1984 SDEIS and 1985 FEIS for Tongue River I; the 1992 DEIS, 1994 SDEIS and 1996 FEIS for Tongue River II; the Fish and Wildlife Coordination Act Report for the Tongue River Dam Rehabilitation Project (USFWS 1992); the 1995 BA and 1995 Biological Opinion for Tongue River II; the 1995 DEIS (MDNRC 1995) and 1996 FEIS (MDNRC 1996) for the Tongue River Basin Project; theses, technical reports and journal papers; relevant information on natural resource agency WebPages; and various application materials for the Western Alignment submitted by TRRC to the STB. All citations used in this BA are included in LITERATURE CITED.

Contacts with knowledgeable parties ranged from informal discussions with landowners along the rail line, conducted by TRRC or WESTECH personnel; contacts with USFWS, MDFWP, MBEWG, Montana Prairie Dog Working Group, mining company, Hayden-Wing Associates, and other biologists at various dates from 1990 to 1995 (cited in the 1995 BA for Tongue River II) and late 1998-early 1999; and searches of biological resource data bases compiled by the MTNHP and MFWP.

Field inventories for wintering and nesting bald eagles along parts of the Tongue River Railroad route near operating or proposed coal mines have been conducted sporadically since the mid 1970s (e.g., Lockhart and McEneaney 1978; annual wildlife monitoring reports from the Montco Mine). Information from these surveys was summarized in the 1992 DEIS and USFWS 1992. Inventories specific to the Tongue River II route, including an aerial survey, were conducted in February and April 1992, prior to the preparation of the 1995 BA; the results of those surveys were included in the 1995 BA. A brief reconnaissance along public roads in the area potentially affected by the Tongue River Railroad was conducted during preparation of the Western Alignment application in February 1998.

As discussed previously, an aerial survey for bald eagle nests and prairie dog colonies was flown on April 16, 1999 after consultation in March 1999 with the USFWS. The survey went from Miles City to the Wyoming border, then returned to

Miles City. The flight upstream followed the Tongue River from Miles City to the Wyoming border, concentrating on riparian habitat along the river which was considered the most likely habitat for bald eagle nesting activities. In the area below the Tongue River Dam from the dam to about the Nest 02 Alternate site, however, the survey was expanded to include the lower, ponderosa pine covered hills adjacent to the valley which might also have been used for nesting or roosting. The flight downstream generally followed the ROW of the Tongue River Railroad from the tie-in with the Spring Creek Rail Spur to Miles City. Since the ROW has not been surveyed and flagged, an attempt was made to survey an area of about 3 miles on either side of the approximate ROW as mapped on USGS 1:24,000 scale topographic maps.

The aerial survey was flown at low altitude and low air speed in a Piper SuperCub, beginning at approximately 0615 and ending at about 1200. The survey was flown under clear skies (partly cloudy from Tongue River Dam to the Wyoming border) and cool temperatures (maximum approximately 45^{o}F). All sightings of bald and golden eagles were mapped, and deciduous forest along the river was searched for nests that could be potentially used by bald eagles. Results were reported to MDFWP and USFWS. Since 1992, monitoring of active bald eagle nests (identified as Nests 03 and 04 in this BA) along the Tongue River has been conducted by MDFWP, BLM and coal mining companies (Flath, personal comm, 1994). In addition, the Nest 06 was inspected by TRRC personnel on April 26, 1999 to determine whether or not this nest was active.

Prior to construction, spring 2004 surveys will be conducted for appropriate species and information will be provided to relevant resource agencies.

ANALYSIS OF EFFECTS; PROPOSED MITIGATION MEASURES

BLACK-FOOTED FERRET

Analysis of Effects

The black-footed ferret is not known to occur in the area potentially affected by the Tongue River Railroad. If no ferrets are present, construction and operation of the Tongue River Railroad would not affect this species. If ferrets are present, impacts could include mortality (e.g., ferrets could be killed by equipment during construction or by trains during operation of the Tongue River Railroad) and displacement from disturbed habitat (due to fires, dust, noise, accidental fuel spills, etc.).

Since critical habitat for the black-footed ferret is prairie dog colonies, it is assumed that ferrets will occur in or near prairie dog colonies if they are within the area potentially affected by the Tongue River Railroad. Disturbance of prairie dog colonies could potentially disturb black-footed ferrets.

One colony from the Spring 2003 data was greater than 80 acres, but was found approximately 14 miles east of the Tongue River (USFS 2003). Nine colonies were greater than 80 acres from the 2001 data on Northern Cheyenne Tribal Lands (BIA 2003), yet were not with 0.5 mile buffer of the route. See BLACK-TAILED PRAIRIE DOG ANALYSIS OF EFFECTS section.

Proposed Mitigation Measures

In Spring, 2004, the portion of all prairie dog colonies within the Tongue River Railroad ROW would be examined for the presence of black-footed ferrets.

Prairie dog colonies that would not be intercepted by the ROW would not be surveyed because: 1) there are no recent records of the black-footed ferret in the area potentially affected by the Tongue River Railroad; and 2) colonies away from the ROW will not be directly affected by construction and operation of the Tongue River Railroad.

Surveys for black-footed ferrets would involve searches for evidence characteristic of ferrets, particularly trenching/digging patterns at prairie dog burrows. If black-footed ferrets or evidence of them are found in the prairie dog colonies that would be directly affected by the Tongue River Railroad, TRRC would immediately notify the appropriate agencies. The parties would confer to determine appropriate means to mitigate the effects of construction and operation of the Tongue River Railroad on the black-footed ferret.

As discussed in the earlier black-footed ferret section, if a proposal is made by FWS and MFWP to reintroduce the black-footed ferret, further coordination may be required. However, neither the ACEC nor the proposed reintroduction site are in the project area (Dood, personal comm. 2003).

PALLID STURGEON

Analysis of Effects

Pallid sturgeon is a large river fish that resides in deep-water areas of the main channel. This species preferred habitat is comprised of sand flats and gravel bars in large, silty rivers with swift currents (Bramblett 1996). Currently, there are no known occurrences of the pallid sturgeon in the Tongue River. The probable cause is likely due to changes in flow regime caused by damming of the Tongue River (Gardner 2001).

As previously stated, reintroduction of the pallid sturgeon may occur in the Tongue River in the future. If this does occur, the Tongue River Railroad would not be expected to directly impact this species. However, vibration during operation of the railroad may indirectly impact this species.

Proposed Mitigation Measures

If pallid sturgeon is encountered during construction or operation of the Tongue River Railroad, TRRC would immediately notify the appropriate agencies. The parties would confer to determine appropriate means to mitigate the effects of construction and operation of the Tongue River Railroad on the pallid sturgeon.

WHOOPING CRANE

Analysis of Effects

The whooping crane occur s only on migration within the area potentially affected by the Tongue River Railroad. If whooping cranes are observed, they would be transients through the area and would not be directly affected by the proposed project. Indirect impacts could include loss of migration habitat such as wetlands.

Proposed Mitigation Measures

If whooping cranes are encountered during construction or operation of the Tongue River Railroad, TRRC would immediately notify the appropriate agencies. The parties would confer to determine appropriate means to mitigate the effects of construction and operation of the Tongue River Railroad on the whooping crane.

INTERIOR LEAST TERN

Analysis of Effects

Suitable interior least tern habitat within the Tongue River Railroad project area includes sparsely vegetated sand and gravel bars within the Tongue River channel. Although this habitat is present, there have been no documented occurrences of this species in the project area.

Because suitable habitat is available, the potential exists that this species may be encountered. Impacts to the interior least tern due to the construction and operation of the Tongue River Railroad are likely to be indirect and may include noise from construction and operation, which could cause abandonment of nests. However, at this time, no impacts to the interior least tern are expected to occur.

Proposed Mitigation Measures

If the interior least tern is encountered during construction or operation of the Tongue River Railroad, TRRC would immediately notify the appropriate agencies.

The parties would confer to determine appropriate means to mitigate the effects of construction and operation of the Tongue River Railroad on the interior least tern.

BALD EAGLE

Analysis of Effects

The *Montana Bald Eagle Management Plan* (MBEWG 1994) summarized the reaction of bald eagles to human activities as follows:

> Bald eagles are sensitive to a variety of recreational, research, resource and urban development activities. Responses of eagles may vary from ephemeral, temporal and spatial avoidance of activity to total reproductive failure and abandonment of breeding areas. Less adequately documented is that bald eagles also tolerate apparently significant disturbances. Relationships of human activity and eagle responses are highly complex, difficult to quantify, and often site-specific. Responses vary depending on type, intensity, duration, timing, predictability and location of human activity. The way in which these variables interact depends on age, gender, physiological condition, sensitivity, residency and mated status of affected eagles. Prey base, season, weather, geographic area, topography and vegetation in the vicinity of activities and eagles (plus other variables probably unperceived by humans) also influence eagle responses. Cumulative effects of many seemingly insignificant or sequential activities may result in disruption of normal behavior. Lack of experimental data (due to endangered/threatened status) limits quantification of response to empirical evidence, but general trends in eagle responses (or lack thereof) to human activity are becoming evident to field researchers and managers, although somewhat subjectively. Clearly, some bald eagles are more tolerant of human activity than others. Tolerance threshold is usually site, pair, and activity specific and a function of type, intensity, and proximity of disturbance over exposure time. However, it is becoming apparent that there are "urban" and "rural" eagles. Urban eagles may be more tolerant of certain human activities than their rural counterparts because they have been or are exposed to more human activity at gradually increasing levels while rural eagles' exposure is abrupt.

The *Montana Bald Eagle Management Plan* (MBEWG 1994) defined disturbance, as used above, to be "any human elicited response that induces a behavioral or physiological change in a bald eagle contradictory to those that facilitate survival and reproduction. Disturbance may include elevated heart or respiratory rate, flushing from a perch or events that cause a bald eagle to avoid an area or nest site."

Based on the above descriptions, it is reasonable to assume that bald eagles nesting in the area potentially affected by the Tongue River Railroad would be

accustomed to some level of disturbance related to human use of the public roads (which pass within 400 feet of Nest 03 (Figure 2), about 4000 feet from Nest 02 Alternate (Figure 3), within 3000 feet of Nest 04 Alternate (Figure 4), about 3400 feet from Nest 05 (Figure 5) and about 3000 feet from Nest 06 (Figure 6)), residences, agricultural activities such as hay production and feeding livestock, and limited recreational use of the Tongue River. For example, two fishermen were about 2500 feet away and within line of sight from Nest 04 during the aerial survey on April 16, 1999.

Construction

NESTING POPULATION

No bald eagle nests known at this time would be destroyed by construction of the Tongue River Railroad. Approximately 28 acres of deciduous tree/shrub habitat would be disturbed (ENTRIX, Inc. 2003). Therefore, the impact of construction of the Tongue River Railroad to potential bald eagle nesting or roosting habitat would be minor.

The greatest potential impact of construction of the Tongue River Railroad near an active bald eagle nest during the nesting season could be increased stress to the pair (included within the definition of "disturbance"), which could result in nest abandonment or failure. Construction activities might also displace certain kinds of prey, such as, waterfowl and other birds, along the route, but such displacement would be localized and short-term. Other types of prey, including fish, would not be substantially affected.

As discussed earlier, the Tongue River Railroad would pass about 0.7 mile from Nest 03, 0.8 mile from Nest 02 Alternate, 0.9 mile from Nest 04 Alternate, 0.75 mile from Nest 05 and 1.2 miles from Nest 06. Nests 01 and 02 were apparently destroyed in 1994. The *Montana Bald Eagle Management Plan* (MBEWG 1994) requires that such sites be considered occupied for five years after the last recorded activity of breeding bald eagles, because bald eagles may rebuild destroyed nests, often in the same or a nearby stand of trees. These two nests have not been rebuilt in the last five years and are therefore not included in this BA. Nest 02 Alternate, which is about 0.3 mile from the site of Nest 02, is included in this BA.

WINTERING / MIGRANT POPULATION

Construction of the Tongue River Railroad could displace migrant or non-nesting bald eagles from portions of the Tongue River Railroad, and also displace certain types of prey. However, this effect would be short-term and would occur only during the construction season. Therefore wintering bald eagles would not be affected by construction of the Tongue River Railroad.

Indirect effects from construction would be related to the presence of the construction force, and would potentially include: 1) displacement as a result of increased recreation in the area.; 2) mortalities of bald eagles from vehicles along access roads to the Tongue River Railroad, particularly if bald eagles were attracted to these roads by the presence of carrion such as vehicle-killed deer (USFWS 1986); and 3) an increased potential for illegal killing of bald eagles as a result of increased numbers of people in the area. Once construction is complete and the construction work force departs, these potential impacts would be abated. Recreational access to the Tongue River valley is restricted by private landowners, and this situation is not expected to change as a result of the construction and operation of the Tongue River Railroad.

Operation

NESTING POPULATION

Nest 03, which has been an active bald eagle nest every year since 1995, is within 400 feet of a public road (Figure 2), about 0.5 mile from an occupied residence, and also adjacent to active ranching activities. Therefore the bald eagles that use this nest are habituated to some level of human activity near their nest, even during the peak of nesting season. The Tongue River Railroad would be about 0.7 mile from Nest 03, farther away than all these other existing human activities.

Nest 02 Alternate, which appears to have been built or modified by eagles, apparently has not been actively used by bald eagles and was occupied by red-tailed hawks in April 1999. Current data are not available for this nest. It is about 0.75 mile from a public road, about 0.9 mile from a residence, and is adjacent to active ranching activities. It is about 0.8 mile from the Western Alignment of the Tongue River Railroad (Figure 3).

Nest 04 Alternate has been used by nesting bald eagles every year since 1992. This nest is about 0.6 mile from a public road, 0.8 mile from a human residence, and is adjacent to ranching activities including cattle grazing and hay production. The Tongue River Railroad would be about 0.9 mile from this nest (Figure 4).

Nest 05, which was discovered in April 1999, has either been inactive or used by another species in subsequent years. It is about 0.6 mile from a public road, 0.7 mile from a human residence, and is adjacent to ranching activities. The Tongue River Railroad would be about 0.75 mile from this nest (Figure 5).

Nest 06, which appears to have been modified by eagles or other raptors, was occupied by Canada geese on April 26, 1999. No recent data are available for this nest. It is about 0.6 mile from a public road, about 0.8 mile from a human residence, and is adjacent to areas grazed by livestock. The Tongue River Railroad would be about 1.2 miles from this nest (Figure 6), farther away than these other human activities.

In summary, all five nests that are considered in this BA have been built in locations that suggest that the birds that built/use them are habituated to some level of human activity and proximity. Nevertheless, for the purposes of this BA it is assumed that rail line maintenance activities near active bald eagle nests could result in short-term displacement of eagles. The magnitude of this impact at any nest site cannot be predicted because: 1) whether or not a maintenance activity would be required near an active eagle nest during the nesting season is not predictable; and 2) the kind of maintenance activity could influence the magnitude of the effect. For example, extensive replacement of rails could have more effect than a normal rail inspection, since more workers and equipment would be needed for a longer time in the vicinity of the nest. However, given the distance of the Tongue River Railroad from the five nests, the impact of maintenance of the Tongue River Railroad to bald eagle nesting would be expected to range from minor for low-level maintenance activities, to moderate for extensive maintenance activities.

Potential effects of train noise/vibration on nesting bald eagles are expected to be insignificant because of the considerable distance from the railroad to any known nest and topography within Management Zone 3 around each nest (Figures 2-6) that would buffer some of the noise/vibration associated with operating trains.

WINTERING / MIGRANT POPULATION

According to the *Montana Bald Eagle Management Plan* (MBEWG 1994), the presence and abundance of food usually associated with open water, availability and distribution of foraging perches, availability of secure night roost sites and freedom from human harassment dictate the extent of bald eagle use of specific wintering grounds. As discussed earlier, displacement of prey by train operation or rail line maintenance activities would be localized and short-term. According to the *Montana Bald Eagle Management Plan* (MBEWG 1994), "...roost sites are usually located in stands of mature or old growth conifers or cottonwoods. For purposes of management, a communal roost is defined as an area usually less than 10 acres in size that contains $\geq$ 6 bald eagles on any given night..." Since fewer than 30 acres of deciduous tree/shrub habitat would be disturbed by construction of the entire 116 miles of Tongue River Railroad, the probability that significant amounts of roost habitat would be destroyed is very low. Therefore the greatest potential impacts to wintering bald eagles would be disturbance and/or mortality (by trains) of eagles feeding on carcasses of train-killed deer or other animals (USFWS 1986).

According to the *Montana Bald Eagle Management Plan* (MBEWG 1994), risks to migrant bald eagles mostly involve: 1) exposure to lead poisoning; 2) secondary poisoning from insect and predator control programs; 3) collisions and electrocutions associated with power transmission; and 4) loss of perching, foraging and roosting opportunities due to human disturbance. The first three impacts are not applicable

to the Tongue River Railroad, and (as discussed earlier) the fourth would be limited and short-term.

Individual bald eagles exhibit different behavioral reactions to disturbances (MBEWG 1994). Some may be extremely tolerant, while others may be intolerant of disturbance. "Tolerant" migrant or wintering bald eagles would not be significantly affected by operation of the Tongue River Railroad. Maintenance activities during winter could result in short-term displacement of less tolerant individuals, but this effect would be localized and would not extend along the entire route.

Related and Unrelated Actions, and Cumulative Effects

Reasonably foreseeable related and unrelated actions and cumulative effects would include: 1) construction of the Tongue River Railroad could result in the development of two or three coal mines in the Ashland area, and 2) an increasing human population in the region could result in displacement, accidental mortalities, or increased illegal killing of bald eagles. However, even if additional coal mines are developed in the Ashland area, nesting bald eagles are not likely to be directly affected, because no nesting sites have been identified which would be disturbed.

Proposed Mitigation Measures

Mitigation During Construction

The *Montana Bald Eagle Management Plan* (MBEWG 1994) defined Nest Site Management Zones for human activity in the vicinity of bald eagle nests. Detailed descriptions of Management Zones, and guidelines for human activity within them, are given in Appendix I. For the purposes of this BA, Management Zone 1 includes the area within 0.25 mile of all nest sites (active or inactive). The Tongue River Railroad would not intrude in Management Zone 1 for any of the five nests of concern in this BA. As discussed previously, the Tongue River Railroad would be about 0.7 mile from Nest 03 (Figure 2), 0.8 mile from Nest 02 Alternate (Figure 3), 0.9 mile from Nest 04 Alternate (Figure 4), 0.75 mile from Nest 05 (Figure 5) and 1.2 miles from Nest 06 (Figure 6).

According to the guidelines for human activity within Management Zone 1, once an active nest has been located within a breeding area, Management Zone 1 "applies only to the active nest" (Appendix I); in other words, inactive nests within the breeding area would not have Management Zone 1. Based on the aerial surveys and MFWP (2003) data, this additional definition would apply to Nests 03, 04 Alternate and 05 (Nest 05 was assumed to be active even though one of the adults was dead on the nest). If Nest 02 Alternate is considered to be an alternate to Nest 03, Management Zone 1 would no longer apply to Nest 02 Alternate; however, the current status of this nest is unknown. The status of Nest 06 is also unknown, to date.

For the purposes of this BA, Management Zone 2 is considered to be the primary use area for nesting bald eagles and comprises the area between Zone 1 (0.25 mile from the nest site) and 0.5 mile from the nest site. The Tongue River Railroad route does not intrude in Management Zone 2 for any of the five nests of concern in this BA. As with Management Zone 1, once an active nest has been located within a breeding territory, Management Zone 2 applies only to the active nest (Appendix I).

Management Zone 3 represents most of a home range used by bald eagles during a nesting season, and extends to a radius of 2.5 miles from the nest site. Zone 3 overlaps about 4.9 miles of the Western Alignment of the Tongue River Railroad near Nest 03 (Figure 2), about 4.9 miles of the rail line near Nest 02 Alternate (Figure 3), about 4.5 miles of the rail line near Nest 04 Alternate (Figure 4), about 5.1 miles of the rail line near Nest 05 (Figure 5), and about 4.8 miles of the rail line near Nest 06 (Figure 6). Construction and operation of the Tongue River Railroad, as described in the DESCRIPTION OF THE PROJECT, would comply with the guidelines for human activities in Management Zone 3 (Appendix 1).

The bald eagle nesting period (encompassing courtship, nest building, egg laying, incubation, hatching and rearing young, and fledging) extends from February 1-August 15 (MBEWG 1994). The Tongue River Railroad construction period would overlap the bald eagle nesting period. To mitigate effects of construction on nesting bald eagles, the following measures would be instituted:

- The year prior to construction of the Tongue River Railroad, Tongue River Railroad would conduct an aerial survey the Tongue River Railroad from Miles City to the Tongue River Dam for the presence of nesting bald eagles. Any active or inactive bald eagle nests would be reported immediately to the USFWS and MBEWG. Due to the potential for nest initiation after the intial survey, annual surveys would be conducted for the portion (length) of the line to be constructed in that year.

- No construction activities would occur within Management Zones 1 and 2 for any active bald eagle nest during the nesting period (February 1 - August 15, or until five days after the first observation of independent flight). In this BA, construction activities are defined to include both low intensity activities such as surveying, and high intensity activities such as heavy equipment operation, grading, etc. Construction activities do not include the collection of environmental, cultural resources or geotechnical data.

- Mobilization activities (in this BA, mobilization activities include project-related truck traffic, transport of materials, equipment, etc. but do not include commuting workers) would not occur before 10 a.m. (assumed to be the end of primary bald eagle daily foraging period) on any public road within Management Zones 1 and 2 for any active bald eagle nest during the nesting

period (February 1 - August 15, or until five days after the first observation of independent flight). Of the five nests identified in this BA, this restriction would apply only to Nest 03.

- Low intensity construction activities could occur within Management Zone 3 of any active nest from February 1 to May 1 (i.e., courtship through initiation of hatching). High intensity activities (heavy equipment operation, grading, etc.) would not occur in Management Zone 3 around any active nest during this period.

- From May 1 (assumed date of initiation of hatching) to August 15 (assumed date of fledging), high intensity activities in Management Zone 3 would not occur before 10 a.m. (assumed to be the end of primary bald eagle daily foraging period). After August 15, low and high intensity construction activities could occur within Management Zone 3 at any time of the day.

- If aerial surveys for bald eagle nests in the spring prior to construction identify new nests in locations that would make compliance with the above measures impossible, TRRC would confer with the USFWS and/or MBEWG to develop alternative mitigation measures, if necessary. A possible alternative mitigation measure would be the development of a program to monitor the active nest of concern, to determine if approaching construction activities would have a negative effect on nesting bald eagles. USFWS and/or MBEWG consultation would be expected to define the kind and amount of overt disturbance behavior exhibited by nesting bald eagles that would indicate that construction activities should be temporarily halted (henceforth called "threshold behavior"). It is expected that parameters influencing the determination of threshold behavior would include, but not be limited to, location of the nest in relation to the Tongue River Railroad route, distance from other human disturbances such as public roads, and known history of the nesting birds. It is expected that the threshold behavior value would vary, depending on the time of the nesting period (e.g., egg laying vs. rearing). Persons assigned to monitor active bald eagle nests (hereafter called "environmental inspectors") would have the authority to temporarily halt Tongue River Railroad construction activities in the vicinity of an active nest when the threshold behavior is exhibited by the nesting birds. This authority would be granted as part of contract specifications between Tongue River Railroad and the construction contractor. The environmental inspector would notify the on-site construction supervisor that construction activities must cease. The on-site construction supervisor would be responsible for notifying construction crews to cease activities in the vicinity of the nest. In the event of a construction halt, the environmental inspector would notify USFWS and/or MBEWG. USFWS and/or MBEWG would evaluate the situation and make a recommendation to halt construction activities until a later date, proceed with certain kinds of activities, etc.

Mitigation During Operation

The following measures would be implemented during operation of the Tongue River Railroad:

- Rail line maintenance activities would fall into two general categories. The first would be comprised of non-emergency or planned activities (such as rail replacement) that would require considerable time or comparatively high intensity effort, and would not take place in Management Zones 1 or 2 from February 1 through May 15. Although the Tongue River Railroad would not intercept Management Zones 1 and 2 of any known bald eagle nest, this restriction would apply to any new nest discovered in the future. After May 15 until the first observations of independent flight of the fledglings (usually no later than August 15), these activities could occur in the afternoons. By afternoon, adult eagles have usually completed feeding the chicks and there would be minimal disruption of this activity.

  Certain short-term, low intensity planned maintenance activities, such as routine inspections of the rail line, would necessarily have to occur during the February 1 - May 15 period. However, these activities would be expected to have minimal effects to bald eagles.

  The second category of maintenance activity is emergency maintenance or repairs. Such activities cannot be foreseen and therefore cannot be planned to occur in periods that would minimize the effect to nesting bald eagles. The degree of effect on nesting bald eagles would be influenced by the magnitude of the activity, the time of the nesting season at which the activity occurs, and the tolerance for disturbance displayed of the affected bald eagles. TRRC would notify USFWS as soon as reasonably possible of an emergency maintenance activity within Management Zones 1 or 2 around an active bald eagle nest.

- TRRC employees engaged in routine inspection of the rail line (a minimum of two times per week) would remove train-killed deer or other large animals from the right-of-way, in order to protect migrant, wintering or nesting bald eagles feeding on such carrion, from mortalities by trains. Carrion would either be completely removed from the vicinity of the rail line, or would be placed at locations along or near the right-of-way where there would be no potential for mortalities from trains, per objective 1.3123 of the Pacific Bald Eagle Recovery Plan (USFWS 1986).

- TRRC would prohibit trapping within its ROW. This measure would ensure that bald eagles are not accidentally caught in traps set for other animals.

- In the event that additional mitigation becomes necessary, consultation with the MBEWG, TRRC would consult with the MBEWG and the Task Force to identify one or more tracts of land along the Tongue River for purchase for management as potential bald eagle nesting habitat. Criteria that may be used to select such tracts would include but are not limited to: 1) location near irrigation dams, natural riffle/run sequences, etc. that concentrate prey (fish), particularly in reaches of the river where naturally occurring turbidity might otherwise limit observability of fish; 2) location in areas that would be "cut off" by construction of the railroad. This would have two advantages: a) landowners who would otherwise have difficulty accessing these sites for agricultural management due to the railroad, might be receptive to selling such sites for wildlife management purposes; and b) isolating such sites with the railroad grade from other human disturbances may improve their attractiveness for less tolerant bald eagle pairs; and 3) presence of appropriately sized and aged stands of cottonwoods that would be available, or may eventually develop as nest sites for bald eagles. Montana Riparian-Wetland Association criteria (Hansen et al. 1995), or other appropriate methodology, would be used to inventory these sites.

  Once a tract has been purchased, it could be managed as potential bald eagle nesting habitat by measures such as: 1) the site could be fenced to exclude livestock, which would aid regeneration of cottonwoods and understory species; and 2) through consultation with the MBEWG and/or groups such as the Montana Riparian-Wetland Association, more intensive management steps such as planting cottonwoods, could be undertaken to enhance the site as future nesting habitat.

BLACK -TAILED PRARIE DOG

Analysis of Effects

The black-tailed Prairie Dog is known to occur in the area potentially affected by the Tongue River Railroad. Construction and operation effects could include mortality (e.g., prairie dogs could be killed by equipment during construction or by trains during operation of the Tongue River Railroad) and displacement from disturbed habitat (due to fires, dust, noise, accidental fuel spills, etc.).

As discussed earlier, the 1999 survey mapped 36 colonies were mapped on or near the ROW. Of the 36, 28 were located on the Miles City to Ashland segment, eight were found on the first 21 miles of the Ashland to Decker segment, and none were observed on the Western Alignment. Of the 28 colonies mapped on the Mile City to Ashland segment, 26 were found on that part of the route located on the west side of the Tongue River between Miles City and about 10 miles north of Ashland. Consequently most potential impact from the Tongue River Railroad to prairie dog colonies would be expected to occur along this portion of the rail line. The MTNHP

(2003) data are historical data that indicate potential colony locations that if active could be impacted. Other survey data from the Bureau of Indian Affairs (2003) also reports 121 colonies from 2001 data, yet none of these colonies were within 0.5 miles of the project area (including route and 200 ft construction buffer) (0.5-mile buffer from BLM 2002b).

The majority of the colonies found in the 2003 survey conducted by Donald Sassee of the U.S. Forest Service were between Ashland and Birney on the west side of the Tongue River (Figure 7). Consequently, most potential impacts from the Tongue River Railroad to prairie dog colonies would be expected to occur along the portion of the rail line from Miles City to Birney. Further, of the 32 colonies found by 2003 survey (USFS), 11 of them are located within 0.5 miles of the proposed Tongue River Railroad 200-foot construction buffer. The proposed Tongue River Railroad 200-foot buffer will traverse one of these 11 colonies if it is active (Figure 7). Direct impact to this colony could be 1.5 of the 2.28-acre colony.

The primary impact of the Tongue River Railroad to the black-tailed prairie dog would be the disturbance of colonies during construction of the rail line. Some prairie dogs could be killed by construction activities. Displacement of prairie dogs away from construction activity could also occur, but would be short-term because undisturbed burrows would likely be reoccupied shortly after human activity had ceased.

Other potential effects to prairie dogs include mortality from trains, and impacts from fires, dust, potential fuel spills, or other rail line accidents. Such impacts would be short-term and would be limited to comparatively small areas and numbers of prairie dogs. They would not affect local or regional populations of prairie dogs.

It is not expected that landowner attitudes towards prairie dogs would change as a result of the construction and operation of the Tongue River Railroad. Thus, ranchers would be expected to periodically continue to control prairie dogs on their property.

Reasonably foreseeable related and unrelated actions and cumulative effects on prairie dogs and therefore potentially to black-footed ferrets would include: 1) assuming construction of the Tongue River Railroad results in the development of 2-3 coal mines in the Ashland area, direct and indirect impacts associated with these mines could potentially affect other existing prairie dog colonies. These direct and indirect impacts would be similar to those for the Tongue River Railroad; 2) recreational hunting of prairie dogs might increase as an indirect effect of the increasing human population in the region. However, the intensity of recreational hunting would depend on private landowner permission and cooperation; and 3) the Tongue River Basin Project would directly affect one small, apparently isolated prairie dog colony (Albers 1995).

Proposed Mitigation Measures

Black-tailed prairie dog surveys will be conducted in the spring prior to construction to determine if construction within the Tongue River Railroad ROW will traverse any prairie dog colonies. The biological data that is available, to date, does not indicate with certainty that an active colony will be traversed.

If prairie dog colonies were found to be directly affected by the Tongue River Railroad, TRRC would immediately notify the appropriate agencies. The parties would confer to determine appropriate means to mitigate the effects of construction and operation of the Tongue River Railroad on the black-tailed prairie dog.

DETERMINATION OF EFFECT

Based on the above information and data to date, and proposed mitigation measures, this Biological Assessment concludes that:

- Construction and operation of the Tongue River Railroad is not likely to adversely affect the black-footed ferret. It is not likely to occur in the area.

- Construction and operation of the Tongue River Railroad, if the proposed mitigation measures are applied, is not likely to adversely affect the bald eagle.

- Construction and operation of the Tongue River Railroad, if the proposed mitigation measures are applied, is not likely to adversely affect the black-tailed prairie dog.

- Construction and operation of the Tongue River Railroad is not likely to adversely affect the whooping crane. Any occurrences in the area would be transients.

- Construction and operation of the Tongue River Railroad is not likely to adversely affect the interior least tern.

- Construction and operation of the Tongue River Railroad is not likely to adversely affect the pallid sturgeon. It is not likely to occur in the area.

If mitigation measures are implemented as proposed, construction and operation of the Tongue River Railroad will have no short-term or long-term effect on any of the listed species discussed above (based on biological data, to date). If surveys prior

to construction result in an indication that the above listed species would be directly impacted, TRRC would immediately notify the appropriate agencies. The parties would confer to determine appropriate means to mitigate the effects of construction and operation of the Tongue River Railroad on the affected species.

LITERATURE CITED

Albers. M. 1995. Biological assessment, Tongue River Basin Project. U.S. Bur. Reclamation.

Berry, John. 1995. Personal Communication. biologist, Kiewit Mining Group, Sheridan, Wyoming, May 1, 1995.

Berry, John. 1999. Personal Communication. Biologist, Kiewit Mining Group, Sheridan, Wyoming, March 2, 1999.

Berry, John. 2003. Personal Communication. Biologist, Decker Coal Co. September 29, 2003.

Biggins, D.E., B.J. Miller, L.R. Hanebury, B. Oakleaf, A.H. Farmer, R. Crete and A. Dood. 1993. A technique for evaluating black-footed ferret habitat. In J. L. Oldemeyer, D.E. Biggins, B.J. Miller and R. Crete (eds.). Proceedings of the symposium on the management of prairie dog complexes for the reintroduction of the black-footed ferret. U.S. Fish and Wildl. Serv. Biol. Rep. 13, Washington, D.C.

Biggins, D.E., M. Schroeder, S. Forrest and L. Richardson. 1985. Movements and habitat use of radio-tagged black-footed ferrets. In S.H. Anderson and D.B. Inkley (eds.). Black-footed ferret workshop proceedings. Wyoming Game and Fish Dept., Cheyenne.

Bramblett, R.G. 1996. Habitats and movements of pallid and shovelnose sturgeon in the Yellowstone and Missouri rivers, Montana and North Dakota. Ph. D. dissertation. Montana State University, Bozeman. 210 pp.

Bureau of Indian Affairs (BIA). 2003. Bureau of Indian Affairs Prairie Dog Data 1989-2001. Received from Steve Fourstar on October 5, 2003.

Bureau of Land Management, 2002a. Biological Assessment for Coal Bed Methane Production in Montana.

Bureau of Land Management, 2002b. Wildlife and Monitoring Protection Plan. In conjunction with Statewide Oil and Gas Draft Environmental Impact Statement.

Bureau of Land Management, 2003. Wildlife Areas Of Critical Environmental Concern (ACECs). http://www.mt.blm.gov/mcfo/acecweb5.html. Accessed September 18, 2003.

Carlson, J.C. 2003a. Personal communication, Zoology Program Manager, Montana Natural Heritage Program, Helena, Montana, September 12, 2003.

Carlson, J.C. 2003b. Personal communication, Zoology Program Manager, Montana Natural Heritage Program, Helena, Montana, September 18, 2003.

Day, Doug. 1999. Personal Communication. TRRC. April 26, 1999.

Dood, Arnold. 2003. Personal Communication. Biologist, Montana Fish, Wildlife and Parks. Bozeman, MT. September 26, 2003.

DuBois, Kristy. 2003. Personal Communication. Native Species Coordinator Montana Fish, Wildlife & Parks. Missoula, MT, September 24, 2003.

Elser, A.A., R.C. McFarland and D. Schwehr. 1977. The effect of altered streamflow on fish of the Yellowstone and Tongue Rivers, Montana. Old West Reg. Comm. Rep. No. 8, Yellowstone Impact Study.

ENTRIX, Inc. 2003. Fish and wildlife species occurrence by habitat, Tongue River Railroad project area. Tech. rep. for Tongue River Railroad Company.

Farmer, P.J., 1992. Biologist, Western Technology and Engineering, Inc. February 23, 1992. Letter to Alan Newell, Historical Research Associates, Inc.

Farmer, .J. 2003. Personal Communication, Treasurer, WESTECH, Helena, Montana. August 19, 2003.

FaunaWest Wildlife Consultants, Inc. 1998. Status of the black-tailed and white-tailed prairie dog in Montana. Tech. rep. for Montana Dept. Fish, Wildl. and Parks.

Flath, Dennis. 1994. Personal Communication, Nongame Coordinator, Montana Department of Fish, Wildlife and Parks, November 7, 1994.

Flath, Dennis. 1995. Personal Communication, Nongame Coordinator, Montana Department of Fish, Wildlife and Parks, May 17, 1995.

Flath, Dennis. 1998. Personal Communication, Nongame Coordinator, Montana Department of Fish, Wildlife and Parks, July 24, 1998.

Flath, Dennis. 1999a. Informal presentation to the Montana Bald Eagle Working Group.

Flath, Dennis. 1999b. Personal Communication, Nongame Coordinator, Montana Department of Fish, Wildlife and Parks, March 11, 1999.

Gardner, W.M. 2001. Montana's fish species of concern. Montana Fish Wildlife and Parks. http://www.fisheries.org/AFSmontana/SSCpages/Pallid%20status.htm Helena. Accessed September 5, 2003.

GeoResearch, Inc. 1991. Northern Cheyenne Tribe prairie dog management plan. Northern Cheyenne Tribe, Lame Deer, Montana.

Hanebury, Lou. 1999. Personal Communication. Biologist, U.S. Fish and Wildlife Service, Billings, Montana, March 3, 1999.

Hanebury, Lou. 2003a. Personal Communication. Biologist, U.S. Fish and Wildlife Service, Billings, Montana, July 1, 2003.

Hanebury, Lou. 2003b. Personal Communication. Biologist, U.S. Fish and Wildlife Service, Billings, Montana, September 9, 2003.

Hansen, P.L., R.D. Pfister, K. Boggs, B.J Cook, J. Joy and D.K. Hinckley. 1995. Classification and management of Montana's riparian and wetland sites. Univ. Montana School of For., Montana For. and Conserv. Exp. Sta., Misc. Publ. No. 54.

Harms, D., 1992. state supervisor, Montana state office, U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement. August 28, 1992. Letter to N. Stessman, acting regional director, U.S. Bureau of Reclamation, Billings, Montana.

Hayden-Wing, Larry. 2003. Personal Communication. Hayden-Wing Associates, Laramie, Wyoming, September 17, 2003.

Hayden-Wing. 2003. Hayden-wing Associates Bald Eagle Data, January 2003 Survey Data. Laramie, Wyoming.

Hazelwood, Rob. 2003. Personal Communication. Senior Staff Biologist. USFWS, Helena, Montana, September 29, 2003.

Hillman, C.N. and T.W. Clark. 1980. *Mustela nigripes*. Mammalian Species 126.

Howe, M.A.. 1989. Migration of radio-marked Whooping Cranes from the Aransas-Wood Buffalo population: patterns of habitat use, behavior, and survival. Fish Wildl. Tech. Report, Rept 21, U.S. Fish and Wildlife Service, Washington, D.C. As cited in Lewis 1995.

Knopf, F.L. 1996. Mountain Plover (*Charadrius montanus*). *In* the Birds of North America, No. 211 (A. Poole and F. Gill, eds.) The Academy of Natural Sciences, Philadelphia, PA, and the American Ornithologists' Union, Washington, DC.

Kuyt, E. 1992. Aerial radio-tracking of Whooping Cranes migrating between Wood Buffalo National Park and Aransas National Wildlife Refuge, 1981-84. Occas. Paper 74 Can Wildl Serv., Ottawa. As cited in Lewis 1995

Lewis, J.C. 1995. Whooping Crane (*Grus americana*). *In* the Birds of North America, No. 153 (A. Poole and F. Gill, eds.). the Academy of Natural Sciences, Philadelphia, and the American Ornithologists' Union, Washington, D.C.

Lockhart, J.M. and T.P. McEneaney. 1978. The effects of coal development on the ecology of birds of prey in southeastern Montana and northern Wyoming. U.S. Fish and Wildl. Serv., Denver Res. Center, Sheridan, Wyoming field sta.

McMaster, K.M., field supervisor, Montana field office, U.S. Fish and Wildlife Service, Helena, Montana. January 19, 1999. Letter to Dana White, Section of Environmental Analysis, Surface Transportation Board.

Montana Bald Eagle Working Group (MBEWG). 1994. Montana bald eagle management plan. USDI Bur. Recl., Billings, Montana. 104 pp.

Montana Bird Distribution Online Database. 2001. Helena, Montana. http://nhp.nris.state.mt.us/mbd/. Accessed September 17, 2003.

Montana Department of Natural Resources and Conservation, Northern Cheyenne Tribe and USDI Bureau of Reclamation. 1995. Tongue River Basin Project Draft Environmental Impact Statement. MDNRC, Helena, Montana.

Montana Department of Natural Resources and Conservation (MDNRC), Northern Cheyenne Tribe and USDI Bureau of Reclamation. 1996. Final environmental impact statement, Tongue River Basin Project. MDNRC, Helena, Montana.

Montana Fish, Wildlife and Parks (MFWP). 2003a. Bald Eagle Data from Kristi DuBois, Native Species Coordinator. September 24, 2003.

Montana Fish, Wildlife and Parks (MFWP). 2003b. Endangered Species – Black-footed ferret. http://www.fwp.state.mt.us/wildthings/t&e/endangered.asp#ferret. Accessed 18 September 2003.

Montana Natural Heritage Program (MTNHP). 1999. Element occurrence records for species of special concern, Tongue River Railroad, April 2, 1999. Helena, Montana.

Montana Natural Heritage Program (MTNHP). 2003. Element occurrence records for species of special concern & threatened and endangered species. Tongue River Railroad, August 11, 2003 and September 30, 2003. Helena, Montana.

Moore, R.E. and N.S. Martin. 1980. A recent record of swift fox (*Vulpes velox*) in Montana. J. Mamm. 61:161.

Nordstrom, L. 2003. Personal Communication. biologist, U.S. Fish and Wildlife Service, Helena, Montana, August 6, 2003.

Newell, A., Historical Research Associates, Inc. December 17, 1991. Letter to D. White, Section of Energy and Environment, Interstate Commerce Commission.

Phillips, R.L., A.H. Wheeler, J.M. Lockhart, T.P. McEneaney and N.C. Forrester. 1990. Nesting ecology of golden eagles and other raptors in southeastern Montana and northern Wyoming. U.S. Fish and Wildl. Serv., Fish and Wildl. Tech. Rep. 26, Washington, D.C.

Rau, Larry. 2003. Personal Communication. Biologist, Bureau of Land Management, Miles City, MT, September 23, 2003.

Sasse, Donald. 2003. Personal Communication, Zone Wildlife biologist, U.S. Forest Service, Ashland Ranger District, Ashland, MT, September 11, 2003.

Sumner, J. 1979. Montco peregrine falcon survey. Tech. rep. for Montco.

Surface Transportation Board. 2003. Amended Notice of Intent to Prepare a Supplement to the Final Environmental Impact Statement and Request for Comments on the Adequacy of the Final Scope of the Supplement Dated February 3, 1999. STB Finance Docket No. 30186 (Sub-No. 3).

Thompson, B.C., J.A. Jackson, J. Burger, L.A. Hill, E.M. Kirsch, and J.L. Atwood. 1997. Least Tern (*Sterna antillarum*). *In* the Birds of North America, No. 290

(A. Poole and FF. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington. D.C.

Undlin, K. 2003. Personal Communication, Bureau of Land Management, Miles City, Montana, September 17, 2003.

U.S. Census Bureau. 2000. Census 2000 Redistricting Data (Public Law 94-171) Summary File, Matrices PL1, PL2, PL3, and PL4. http://factfinder.census.gov/bf/_lang=en_vt_name=DEC_2000_PL_U_QTPL_geo_id=16000US3049525.html. Retrieved on September 5, 2003.

U.S. Fish and Wildlife Service. 1986. Recovery Plan for the Pacific bald eagle. U.S. Fish and Wildl. Serv., Portland, Oregon.

U.S. Fish and Wildlife Service. 1988. Black-footed Ferret recovery plan. U.S. Fish and Wildl. Serv. Denver, Colorado 154pp.

U.S. Fish and Wildlife Service. 1989. Black-footed ferret survey guidelines for compliance with the Endangered Species Act. U.S. Fish and Wildl. Serv., Denver, Colorado.

U.S. Fish and Wildlife Service. 1990. Recovery Plan for the Interior Population of the Least Tern (*Sterna antillarum*). U.S. Fish and Wildlife Service, Twin Cities, Minnesota, 90pp.

U.S. Fish and Wildlife Service. 1992. Fish and Wildlife Coordination Act report for the Tongue River Dam rehabilitation project. Montana state office, Helena.

U.S. Fish and Wildlife Service. 1994. Whooping Crane Recovery Plan. Albuquerque, New Mexico. 92 pp.

U.S. Fish and Wildlife Service. 1995. Biological opinion on Tongue River Railroad Company's additional rail line from Ashland to Decker, Montana. Montana state office, Helena.

U.S. Fish and Wildlife Service. 1999. Endangered and threatened wildlife and plants: proposed threatened status for the mountain plover. Federal Register 64(30):7587-7601, February 16, 1999.

U.S. Fish and Wildlife Service. 2000. 12 Month Administrative Finding for the Black-tailed Prairie Dog Pierre, South Dakota. 108 pp.

U.S. Fish and Wildlife Service. 2002. Mountain Plover Survey Guidelines. March, 2002. Received from Hanebury, personal comm., 2003.

U.S. Fish and Wildlife Service. 2003a. Federally-Listed Endangered, Threatened, Proposed and Candidate Species In Montana Counties. June, 2003. http://montanafieldoffice.fws.gov/Endangered_Species/Listed_Species/countylist%2006_03.pdf. Retrieved on August 6, 2003.

U.S. Fish and Wildlife Service. 2003b. News release: US Fish and wildlife Service Withdraws Proposal to List the Mountain Plover as a Threatened Species. http://news.fws.gov/newsreleases/r6/3F64A0A5-2B0A-4BF3-81144B1AEADC4F78.html. Retrieved on September 9, 2003.

U.S. Forest Service. 2003. Prairie Dog Data received from U.S. Forest Service, Custer National Forest, Ashland Ranger District. Received from Tawni Parks, September 25, 2003.

U.S. Geological Service (USGS). 2001. Surface Water Data for Montana: Calendar Year Streamflow Statistics. http://waterdata.usgs.gov/mt/nwis/annual/calendar_year?. Retrieved on September 5 and 9, 2003.

Western Technology and Engineering, Inc. (WESTECH). 1982. Terrestrial and aquatic fauna resources, Youngs Creek study area, Big Horn County, Montana 1975-1981. Draft tech. rep. by WESTECH for Shell Oil Co., Houston, Texas.

Whitford, Tom. 2003. Personal Communication. Biologist, Custer National Forest. September 29, 2003.

Appendix I. Description of bald eagle nest site management zones (MBEWG 1994).

Zone 1 - Nest Site Area

Zone 1 includes the area in which human activity or development may stimulate abandonment of the breeding area, affect successful completion of the nesting cycle or reduce productivity, either annually or long-term. It includes the area within a 1/4 mile (440 m) radius of all nest sites in the breeding area that have been active within 5 years or until an active nest is located. Then, Zone 1 applies only to the active nest.

Objectives:

1. Eliminate disturbance.

2. Maintain or enhance nest site habitat suitability.

Guidelines:

1. Existing levels of human activities can continue if the breeding area has at least a 60% nest success, has fledged at least 3 young during the preceding 5 years, and has a low potential hazard rating on the Bald Eagle Nest Survey Form. Low intensity activities such as dispersed recreation can occur, but high intensity activities such as heavy equipment use, blasting, logging, or concentrated recreation should not occur during the nesting season. High intensity activity can occur during the non-nesting season if designed to minimize potential disturbance and avoid conflicts with bald eagle key use areas.

2. Additional human activity should not occur within Zone 1 from initiation of nest site selection to one month after hatching, unless the activity is consistent with bald eagle conservation. A short duration (less than one hour), nonrecurring, nonmotorized activity may occur during the late nestling to 2 weeks post fledgling period if the activity is under direct supervision of eagle specialists. Low intensity human activities such as dispersed recreation can occur during the non-nesting period or when the breeding area is not occupied.

3. Permanent development should be prohibited within Zone 1 of all nests (including alternates). Habitat alteration which may negatively affect the suitability of the breeding area for bald eagles should also be avoided. Such activities include, but are not limited to, timber harvest, prescribed fire,

powerline construction, pesticide use, land clearing, stream channeling, levee or dam construction or wetland drainage.

4. If conflicts persist, subsequent levels of planning should ensue.

Zone 2 - Primary Use Area

Zone 2 includes the area 1/4 mile (400 m) to 1/2 mile (800 m) from all nest sites in the breeding area that have been active within 5 years or until an active nest is located. Then, Zone 2 applies only to the active nest. The Working Group assumes that 75% of activity (foraging, loafing, bathing, etc.) of a breeding pair occurs within the boundary of Zone 2 (including Zone 1).

Objectives:

1. Minimize disturbance.

2. Maintain the integrity of the breeding area.

3. Eliminate hazards.

Guidelines:

1. Low intensity activities such as dispersed recreation can occur, but high intensity activities such as heavy equipment use, blasting, or concentrated recreation use should not occur during the nesting season. Higher intensity activities can occur during the non-nesting season if designed to minimize potential disturbance and avoid conflicts with bald eagle high use areas.

2. Habitat alterations should be designed and regulated to ensure that preferred nesting and feeding habitat characteristics are maintained.

3. Permanent developments that may increase human activity levels during the nesting season should not be constructed within Zone 2 of all nests (including alternates). If conflicts persist, subsequent levels of planning should ensue.

4. Structures that pose a hazard such as overhead utility lines should not be constructed within Zone 2 of all nests (including alternates). Existing structures that pose risks of injury or death should be removed or modified.

5. Permanent developments should not be constructed.

6. If conflicts persist, subsequent levels of planning should ensue.

Zone 3 - Home Range

Zone 3 represents most of a home range used by eagles during the nesting season. It usually includes all suitable foraging habitat within 2.5 mi of all nest sites in the breeding area that have been active within 5 years.

Objectives:

1. Maintain suitability of foraging habitat.

2. Minimize disturbance within key areas.

3. Minimize hazards.

4. Maintain integrity of the breeding area.

Guidelines:

1. Human activities, including permanent developments, should be designed and regulated to minimize disturbance and avoid conflicts with bald eagle key use areas.

2. Human activity should not reach a level where cumulative effects decrease habitat suitability.

3. Habitat alteration should be designed to ensure that prey base and important habitat components, such as perch trees or screening vegetation, are maintained or enhanced.

4. Pesticides should not be used in a manner which pose a hazard to bald eagles.

5. Structures which pose a hazard should be located and designed to minimize or avoid risk to bald eagles or their prey.

6. If conflicts persist, subsequent levels of planning should ensue.

Appendix M

Native American Consultation

Table 1. Tongue River Railroad Native American Consultation

DATE	FORMAT	FROM	AFFILIATION	TO	AFFILIATION	COMMENTS
8/28/1998	Letter	Patrick Walker-Kuntz	Ethnoscience	Charles Sooktis	Cheyenne Cultural Commission, Acting Chair	Initial Consultation Contact Regarding Western Alignment. Request for comments and/or meeting.
8/28/1998	Letter	Patrick Walker-Kuntz	Ethnoscience	William Walks Along	Northern Cheyenne Tribal Chair	Initial Consultation Contact Regarding Western Alignment. Request for comments and/or meeting.
8/28/1998	Letter	Patrick Walker-Kuntz	Ethnoscience	Steve Brady	Northern Cheyenne, Crazy Dogs	Initial Consultation Contact Regarding Western Alignment. Request for comments and/or meeting.
8/28/1998	Letter	Patrick Walker-Kuntz	Ethnoscience	Viola Washington	Northern Cheyenne, Native Action	Initial Consultation Contact Regarding Western Alignment. Request for comments and/or meeting.
8/28/1998	Letter	Patrick Walker-Kuntz	Ethnoscience	Gilbert White Dirt	Cheyenne, Keeper of the Sacred Hat Lodge	Initial Consultation Contact Regarding Western Alignment. Request for comments and/or meeting.
8/28/1998	Letter	Patrick Walker-Kuntz	Ethnoscience	Clara Nomee	Crow Tribal Chair	Initial Consultation Contact Regarding Western Alignment. Request for comments and/or meeting.
8/28/1998	Letter	Patrick Walker-Kuntz	Ethnoscience	Burton Pretty On Top	Crow Cultural Committee	Initial Consultation Contact Regarding Western Alignment. Request for comments and/or meeting.
8/31/1998	Phone	Butch Sooktis	Northern Cheyenne Cultural Committee, Chairman	Patrick Walker-Kuntz	Ethnoscience	Tongue River Railroad plotted. He also asked if pedestrian survey had been conducted and when construction is supposed to

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9/14/1998	Phone	Patrick Walker-Kuntz	Ethnoscience	Viola Washington	Northern Cheyenne, Native Action	Told to send Letter to Gail Small of Native Action.
9/14/1998	Letter	Patrick Walker-Kuntz	Ethnoscience	Gail Small	Northern Cheyenne, Native Action	Initial Consultation Contact Regarding Western Alignment. Request for comments and/or meeting.
9/15/1998	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Cheyenne Cultural Commission	She said she will send us a letter with comments on the project.
9/16/1998	Phone	Gail Small	Northern Cheyenne, Native Action	Patrick Walker-Kuntz	Ethnoscience	Suggested we talk to Butch Sooktis and Jenny Parker. Named important contacts in Birney area: Elmer Fighting bear, Frida Standing Elk, Burton and AbertaFisher, Gilbert and Nancy White Dirt
9/16/1998	Phone	Patrick Walker-Kuntz	Ethnoscience	Pretty On Top	Crow Cultural Committee	Call not answered.
9/16/1998	Phone	Patrick Walker-Kuntz	Ethnoscience	William Walks Along	Northern Cheyenne Tribal Chair	said Jennie Parker and Butch Sooktis are the people to contact.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Norma Gourneau	Northern Cheyenne, Acting Tribal Chair	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Butch Sooktis	Northern Cheyenne Cultural Commission	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Northern Cheyenne Cultural Commission	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.

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1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Steve Brady	Northern Cheyenne Crazy Dogs	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Gilbert and Nancy White Dirt	Cheyenne Keeper of the Sacred Hat Lodge	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Burton and Abera Fisher	Northern Cheyenne	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Elmer Fighting Bear	Northern Cheyenne	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Frida Standing Elk	Northern Cheyenne	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Viola Washington	Northern Cheyenne, Native Action	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Clara Nomee	Crow Tribal Council Chair	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
1/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Burton Pretty On Top	Crow Cultural Committee Chair	Follow up consultation letter regarding Western Alignment. Request for comments and/or meeting.
2/15/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Raymond Uses the Knife	River Souix Reservation, Wolakota Cultural Affairs Committee	Initial Consultation Letter. Request for comments and/or meeting.

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2/15/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Mel Lone Hill	Souix Reservation Cultural Committee	Initial Consultation Letter
2/15/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Tony Iron Shell	Rosebud Reservation	Initial Consultation Letter
2/15/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Gerald Redman	Traditional Elders Committee	Initial Consultation Letter
3/2/1999	Letter	Jennie Parker	Northern Cheyenne Cultural Commission	Patrick Walker-Kuntz and Sherri Deaver	Ethnoscience	Medicine is new Chairman of the Cultural Commission. Other members are Hugh Clubfoot, Gilbert Little Wolf, Eldora Bement, Eugene Russell, Charles Sooktis, Jennie Parker.
3/8/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Norma Gourneau	Northern Cheyenne Tribal Council Vice President	Called her about PA. She was in a meeting, I left a message.
3/11/1999	Phone	Mel Lone Hill	Pine Ridge Sioux	Patrick Walker-Kuntz	Ethnoscience	treaty Sioux territory. Will talk to tribal council and send comments. Would like to set up a meeting.
3/11/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Butch Sooktis	Northern Cheyenne Cultural Commission	phone number for Scott Steinwert and Mary Bean in case he has technical questions.
3/17/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Norma Gourneau	Northern Cheyenne Tribal Council Vice President	Called her about PA. She will be out of the office all week. I left a message.
3/22/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Mark Wandering Medicine	Cheyenne Cultural Commission Chairman	Copy of Initial Consultation Letter

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3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Cheyenne Cultural Commission	Called to schedule a meeting. Left a message on voice mail.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Gail Small	Northern Cheyenne, Native Action	Gail Small out of the office, will call back in about an hour.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Pretty On Top	Committee Chair	No answer.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Gerald Redman	Arapaho Traditional Elders	Busy signal.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Gerald Redman	Arapaho Traditional Elders	Not in the office right now. Call back later.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Norma Gourneau	Northern Cheyenne Tribal Council Vice President	No answer.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Gail Small	Northern Cheyenne, Native Action	Not in right now. She will call back.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Gerald Redman	Arapaho Traditional Elders	Not in office right now. Called his cell phone and left message.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Mel Lone Hill	Pine Ridge Sioux Cultural Committee	Line was busy.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Raymond Uses The Knife	River Reservation Sioux Cultural Committee	Out of the office today. Call later in the week.
3/22/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Mel Lone Hill	Pine Ridge Sioux Cultural Committee	Left a message.
3/23/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Burton Pretty On Top	Crow Culture Committee Chair	No Answer.

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3/23/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Burton Pretty On Top	Crow Culture Committee Chair	No Answer.
3/23/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Burton Pretty On Top	Crow Culture Committee Chair	Out of the office right now. Left a message about project and request for comments.
3/23/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Gail Small	Northern Cheyenne, Native Action	She will be gone for a couple of weeks. Left a message.
3/23/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Northern Cheyenne Cultural Commission	Not at her desk. Left a message on her voice mail regarding a meeting with the Cultural Commission.
3/24/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Gerald Redman	Arapaho Traditional Elders	Not in office, will be back tomorrow afternoon.
3/29/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Cheyenne Cultural Commission	Cultural Commission at Tribal Office in Lame Deer for April 19, 1999.
3/30/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Tony Iron Shell	Rosebud Reservation Sioux Cultural Committee	No answer.
3/30/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Raymond Uses The Knife	River Reservation Sioux Cultural Affairs	No in yet, call back later today.
3/30/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Mel Lone Hill	Pine Ridge Reservation Sioux Cultural Committee	Not in yet, left a message.
4/14/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Northern Cheyenne Cultural Commission	April 19. Jennie Parker stated that the Cultural Commission will be unable to meet. Will talk to Cultural Commission to schedule a new date in April to meet.

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4/15/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Wandering Medicine, Hugh Clubfoot, Gilbert Little Wolf, Eldora Bement, Eugene Russell, Charles Sooktis, Jennie	Northern Cheyenne Cultural Commission	Letter requesting a meeting and field trip with the Cultural Commission.
4/20/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Northern Cheyenne Cultural Commission	tomorrow and may be able to schedule a meeting for next week. The Commission will be unavailable the week after next.
4/23/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Northern Cheyenne Cultural Commission	Left a message regarding a meeting date.
4/26/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Mel Lone Hill	Pine Ridge Reservation Sioux Cultural Committee	Left a message.
4/26/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Raymond Uses The Knife	River Reservation Sioux Wolakota	Left a message.
4/26/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Tony Iron Shell	Rosebud Reservation Sioux Cultural Committee	hospital. The TRR information has been handed over to Fremont Fallis of the Treaty Commission.
4/26/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Fremont Fallis	Rosebud Reservation Sioux Treaty Commission	Out of the office today. Call back later.

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4/27/1999	Phone	Raymond Uses The Knife	Cultural Committee Chairman, Cheyenne River Reservation Sioux	Patrick Walker-Kuntz	Ethnoscience	more information to present to the Wolakota Cultural Committee to see if any members are interested in participating in the TRR project. Next meeting in mid May.
4/28/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Raymond Uses The Knife	Chairman, Cheyenne River Reservation	Letter containing information on TRR and request for comments and/or meeting.
5/3/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Cheyenne Cultural Commission	Left message requesting meeting.
5/14/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker	Cheyenne Cultural Commission	Said Cultural Commission is very busy. Suggested I talk to Mark Wandering Medicine.
5/14/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Mark Wandering Medicine	Cheyenne Cultural Commission, Chairman	Not in office. He only comes in occasionally. Left a message.
5/14/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Gail Small	Northern Cheyenne, Native Action	Gail Small is out of town until Monday (5/17/99). Left a message.
5/14/1999	Phone	Jennie Parker	Northern Cheyenne Cultural Commission	Patrick Walker-Kuntz	Ethnoscience	Jennie Parker has set up a meeting for Ethnoscience to discuss TRR with the Northern Cheyenne Cultural Commission on 5/19/99.
5/14/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Mel Lone Hill	Pine Ridge Reservation Sioux Cultural Committee	Not in the office.

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5/14/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Raymond Uses The Knife	Chairman, Cheyenne River Reservation	Out of town until Monday (5/17/99).
5/14/1999	Letter	Patrick Walker-Kuntz	Ethnoscience	Francis Brown	Traditional Elders Committee, Chairman	Letter containing information on TRR and request for comments and/or meeting.
5/14/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Fremont Fallis	Rosebud Reservation Sioux Treaty Commission	Out of the office until Monday. Left message.
5/19/1999	Meeting	Lynelle Peterson and Patrick Walker-Kuntz	Ethnoscience	Northern Cheyenne Cultural Commission		Commission Members included Mark Wandering Medicine, Butch Sooktis, Eugene Russell, Eldora Bement
6/1/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Raymond Uses The Knife	Chairman, Cheyenne River Reservation	He is in a meeting. Left a message and number for him to call back.
6/1/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Mel Lone Hill	Pine Ridge Reservation Sioux Cultural Committee	Mr. Lone Hill said he gave all the TRR information to the Tribal Land Director, Milo Yellow Hair.
6/1/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Fremont Fallis	Rosebud Reservation Sioux Treaty Commission	received the TRR information from Tony Iron Shell. I told him I would fax the information to him today.
6/1/1999	Letter via fax	Patrick Walker-Kuntz	Ethnoscience	Fremont Fallis	Rosebud Reservation Sioux Treaty Commission	on TRR and request for comments and/or meeting. I said I would call in a couple of weeks.
6/1/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Raymond Uses The Knife	Chairman, Cheyenne River Reservation	Mr. Uses The Knife is gone for the day.

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6/1/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Milo Yellowhair	Land Director, Pine Ridge Reservation	Out of the office.
6/7/1999	Phone	Patrick Walker-Kuntz	Ethnoscience	Burton Pretty On Top	Crow Cultural Director	Mr. Pretty On Top stated that the TRR is Crow Country and the Crow are interested in the area. However, the Crow trust Northern Cheyenne tribe's involvement at this point. He requested being kept informed of cultural resource work.
6/16/1999	Phone	Mark Wandering Medicine	Northern Cheyenne Cultural Commission Chair	Lynelle Peterson	Ethnoscience	Stated he had received the maps Ethnoscience sent and was reviewing them. He will contact us if he needs anything more.
6/18/1999	Letter	Fremont Falls	Coordinator of the Rosebud Sioux Tribe Treaty Council	Patrick Walker-Kuntz	Ethnoscience	Stated that all future cultural resource correspondence should be sent to Mr. Terry Gray, Coordinator for the Cultural Resource Management Committee.
8/29/2003	letter	K. Blodgett	STB	Geri Small	Northern Cheyenne Tribe	invite participation as consulting party on PA
9/24/2003	Letter	Victoria Rutson	Chief STB SEA	Vernon Hill	Shoshone Business Council	invite participation as consulting party on PA

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9/24/2003	Letter	Victoria Rutson	Chief STB SEA	John Yellow Bird Steel	Oglala Sioux Tribal Council	invite participation as consulting party on PA
9/24/2003	Letter	Victoria Rutson	Chief STB SEA	Carl Venne	Crow Tribal Council	invite participation as consulting party on PA
9/24/2003	letter	V. Rutson	STB	Burton Hutchinson	Arapaho Business Council	invite participation as consulting party on PA
9/24/2003	letter	V. Rutson	STB	Jesse "Jay" Taken Alive	Standing Rock Sioux Tribal Council	invite participation as consulting party on PA
10/9/2003	phone message	Rory	E. Shoshone Business Council	Ken Blodgett	STB	request additional info on PA sent to Floyd Osborne, PO Box 538, Ft. Washakie, WY 82514 Fax: 307-332-3055
10/9/2003	phone	Ken Blodgett	STB	Geri Small	Northern Cheyenne	may have on draft PA, informed that Ms. Small on travel until 10/13. Referred to Dept. of Env.
10/9/2003	phone	Ken Blodgett	STB	Linda	Cheyenne Dept. of Natural Resources	no knowledge of PA at this time.
10/9/2003	phone	Ken Blodgett	STB	Rory	E. Shoshone Business Council	information we can provide, but not choosing to participate at this time.
10/17/2003	phone	Ken Blodgett	STB	Geri Small	N. Cheyenne	left message with person answering phone

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10/17/2003	phone	Geri Small	N. Cheyenne	Ken Blodgett	STB	I will send PA package to her by fax, provided Ethonoscience phone number
10/17/2003	fax	Ken Blodgett	STB	Geri Small	N. Cheyenne	faxed PA consulting party package for review and comment
10/21/2003	letter and fax	Ken Blodgett	STB	Floyd Osborne	E. Shoshone	add to service list, contact STB or Ethnoscience for more info (*)
10/21/2003	phone	Ken Blodgett	STB	Geri Small	N. Cheyenne	no answer
10/21/2003	phone	Ken Blodgett	STB	Geri Small	N. Cheyenne	left message to confirm her receipt of fax sent on 10/17 (1)
10/23/2003	phone	Ken Blodgett	STB	Geri Small	N. Cheyenne	no answer
10/23/2003						
	phone	Ken Blodgett	STB	Geri Small	N. Cheyenne	left message to confirm her receipt of fax sent on 10/17 (2)
10/24/2003	phone	Ken Blodgett	STB	Burton Hutchinson	Arapaho	left voice message (1)
10/24/2003	phone	Ken Blodgett	STB	John Yellow Bird Steele	Oglala Sioux	left message (w/person) following up on PA invitation (1)
10/24/2003	phone	Ken Blodgett	STB	Jesse “Jay” Taken Alive	Standing Rock Sioux	phone not in service
(854-7202)						
10/24/2003	phone	Ken Blodgett	STB	Carl Venne	Crow Tribal Council	phone not in service

Table 1. Tongue River Railroad Native American Consultation

10/29/2003	phone	Ken Blodgett	STB	Charles W. Murphy	Standing Rock Sioux	using new phone number provided by ethnoscience, phone still not in service
854-7560						
10/29/2003	fax	Ken Blodgett	STB	Ursula	Crow Tribal Council	following phone conversation, faxed a copy of PA invitation for Mr. Venne (1)
10/29/2003	phone	Ken Blodgett	STB	Burton Hutchinson	Arapaho Business Council	left message with Rosie (2)
10/29/2003	phone	Ken Blodgett	STB	John Yellow Bird Steel	Oglala Sioux	left voice message (2)
10/29/2003						
	phone	Ken Blodgett	STB	Geri Small	N. Cheyenne	left message with Barbara to confirm her receipt of fax sent on 10/17 (3)
10/31/2003	phone	Ken Blodgett	STB	Tom Iron	Standing Rock Sioux	Chairman Murphy is on extended absence. I will fax Vice Chairman Iron a copy of 9/24/03 letter.
10/31/2003	fax	Ken Blodgett	STB	Tom Iron	Standing Rock	
			Faxed Vice Chairman Iron a copy of 9/24/03 letter.			
11/3/2003	phone	Ken Blodgett	STB	Geri Small	N. Cheyenne	no answer
11/3/2003	phone	Ken Blodgett	STB	Tom Iron	Standing Rock Sioux	left message with Sharon, Mr. Iron and Mr. Murphy probably our for entire week (1)
11/3/2003	phone	Ken Blodgett	STB	John Yellow Bird Steel	Oglala Sioux	left voice message (3)

Table 1. Tongue River Railroad Native American Consultation

11/3/2003	phone	Ken Blodgett	STB	Burton Hutchinson	Arapaho Business	left voice message (3)
11/3/2003	phone	Ken Blodgett	STB	Carl Venne	Crow Tribal Council	left voice message with Lena (2)
11/3/2003	phone	Burton Hutchinson	Business Council	Ken Blodgett		
11/3/2003	phone	Ken Blodgett	STB	Burton Hutchinson	Arapaho Business	Return call ASAP, left message with receptionist (4)
11/4/2003	phone	Burton Hutchinson	Arapaho Business Council	Ken Blodgett	STB	Requested additional information and possible meeting. I gave him Lynelle's # and told him I would have Lynelle call him (*) (may send letter later)
11/4/2003	phone	Ken Blodgett	STB	Lynelle Peterson	Ethnoscience	asked her to call Burton Hutchinson of Arapaho
11/4/2003						
	phone	Ken Blodgett	STB	Geri Small	N. Cheyenne	left message with Charlene to confirm her receipt of fax sent on 10/17 (4)
11/12/2003	letter	Ken Blodgett	STB	Geri Small	N. Cheyenne	letter with contact information should they choose to make contact, as previous calls have not been returned. (*)
11/13/2003	phone	Ken Blodgett	STB	Tom Iron	Standing Rock Sioux	left message for Mr. Iron, follow-up on fax sent to him (2)
11/13/2003	phone	Ken Blodgett	STB	Carl Venne	Crow Tribal Council	left voice message with secretary (3)
11/13/2003	phone	Ken Blodgett	STB	John Yellow Bird Steel	Oglala Sioux	left message with Debbie (4)

Table 1. Tongue River Railroad Native American Consultation

11/21/2003	phone	Ken Blodgett	STB	Tom Iron	Standing Rock Sioux	left voice message for Mr. Iron/Murphy, follow-up on fax sent to him (3)
11/21/2003	phone	Ken Blodgett	STB	Carl Venne	Crow Tribal Council	left voice message on machine (4)
11/24/2003	Letter	Kenneth Blodgett	Chief STB SEA	Mr. Jesse "Jay" Taken Alive	Standing Rock Sioux Tribal Council	invite participation as consulting party on PA
11/24/2003	letter	Ken Blodgett	STB	John Yellow Bird Steel	Oglala Sioux	letter with contact information should they choose to make contact, as previous calls have not been returned. (*)
11/25/2003	phone	Ken Blodgett	STB	Tom Iron / Charles Murphy	Standing Rock Sioux	left message with secretary for Mr. Iron/Murphy, follow-up on fax sent to him (4)
11/25/2003	phone	Ken Blodgett	STB	George Reed - Cultural Rep.	Crow Tribal Council	left voice message on machine (5)
12/5/2003	letter	Ken Blodgett	STB	Charles Murphy	Standing Rock Sioux	letter with contact information should they choose to make contact, as previous calls have not been returned. (*)
12/5/2003	phone	Ken Blodgett	STB	George Reed - Cultural Rep.	Crow Tribal Council	Mr. Reed informed me that the Crow would like to participate as consulting party in PA process. He will be contact person. (*)

Appendix N

Chronology of Important Dates

APPENDIX N: CHRONOLOGY OF IMPORTANT DATES – TONGUE RIVER I, TONGUE RIVER II, AND TONGUE RIVER III

CHRONOLOGY OF IMPORTANT DATES IN TONGUE RIVER I:

08/07/80	SEE holds public scoping meetings in Miles City.
08/16/80	SEE serves a "Notice of Intent (NOI) to Prepare an Environmental Impact Statement."
06/02/83	TRRC files an application seeking authority for construction and operation of a rail line between Miles City and Ashland.
07/15/83	SEE serves the Draft EIS for public review and comment.
01/19/84	SEE serves the Supplement to the Draft EIS for public review and comment.
08/23/85	SEE serves Final EIS.
09/04/85	Administrative Law Judge issues initial decision approving Tongue River I.
05/09/86	ICC issues final decision approving Tongue River I.

CHRONOLOGY OF IMPORTANT DATES IN TONGUE RIVER II:

01/10/89	TRRC sends letter notifying ICC of its intent to file an application.
11/17/89	SEE publishes in *Federal Register* NOI to prepare EIS and to hold scoping meetings.
12/06-07/89	SEE holds EIS scoping meetings in Montana.
03/16/90	SEE publishes in *Federal Register* Final Scope of EIS.
06/28/91	TRRC files application.
07/17/92	SEE serves Draft EIS.
08/18-21/92	ICC holds oral hearings on merits of application in Montana and Wyoming with opportunity to comment on the Draft EIS.
12/06/93	SEE publishes in the *Federal Register* and serves on all parties a notice announcing intention to prepare a Supplement to the Draft EIS.
03/17/94	SEE serves the Supplement to the Draft EIS.
04/11/96	SEA serves the Final EIS.
11/08/96	The Board serves a final decision approving Tongue River II via Four Mile Creek Alternative, and imposes a three-year deadline for completion of the entire line.
07/15/97	TRRC files petition to reopen presenting the Western Alignment instead of the Four Mile Creek Alternative.
12/01/97	The Board serves a decision denying TRRC's petition to reopen, but stating that TRRC could file a new application.
03/23/99	The Board removes previously imposed requirement that construction be completed within three years.

CHRONOLOGY OF IMPORTANT DATES IN TONGUE RIVER III

12/22/97	TRRC submits a Notice of Intent (NOI) to file a new application for the Western Alignment.
02/09/98	TRRC requests waiver of the pre-filing notice required by the Board six months prior to the submittal of a project application.
02/13/98	SEA grants a waiver of six-month pre-filing notice pursuant to 49 CFR 1105.10(c)(1) on the basis that SEA has adequate information and familiarity with

	the case to allow the waiver.
04/27/98	TRRC files application for Western Alignment.
07/10/98	SEA publishes in the *Federal Register* a NOI to prepare a Supplement to the Final EIS (SEIS) prepared in Tongue River II, and asks for comments on the extent to which environmental analysis in Tongue River I and Tongue River II should be revisited due to significantly changed circumstances. (The NOI is included in Appendix A of this Draft SEIS.)
10/28/98	TRRC files a petition with the Board to remove a condition imposed in Tongue River II, which required complete construction of the entire line between Miles City and Decker within three years of the service date of that decision, i.e., by November 8, 1999.
02/03/99	SEA publishes final scope of the SEIS in the *Federal Register*.
03/30/99	Board grants TRRC's petition to remove the three-year time limit for construction of the entire line between Miles City and Decker.
03/02/00	TRRC requests that SEA suspend its environmental work on the SEIS.
12/19/02	TRRC informs the Board that it is now in a position to go forward with Tongue River III and requests SEA to recommence its environmental work.
01/17/03	TRRC files request with the Board to file supplemental evidence in order to provide a limited update on the transportation aspects of the Tongue River III application.
03/11/03	Board specifies the updated evidence that will be required.
03/26/03	SEA serves an amended NOI to prepare a SEIS announcing that the environmental review of the Tongue River III application will go forward, requesting comments on the scope of the SEIS, and asking whether the public has any new information to include in the SEIS.
05/01/03	TRRC files its supplementary evidence on the transportation merits.
08/22/03	SEA publishes amended Final Scoping Notice in the *Federal Register*, addressing the comments received on the amended NOI.
10/15/04	SEA serves for public review and comment Draft SEIS and schedules public meeting.
11/16/04	SEA holds public meeting on Draft SEIS in Miles City, MT
11/17/04	SEA holds public meeting on Draft SEIS in Ashland, MT