

Scoping and Alternatives Report

Thompson Creek Mine EIS

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List of Acronyms & Abbreviations

AMSL	Above Mean Sea Level
BE	Biological Evaluation
BLM	Bureau of Land Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIEDRA	Central Idaho Economic Development and Recreation Act
CPOM	Course Particulate Organic Matter
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FLPMA	Federal Land Policy Management Act
FLTFA	Federal Land Transaction Facilitation Act
FSH	U. S. Forest Service Handbook
IDEQ	Idaho Department of Environmental Quality
IDL	Idaho Department of Lands
IDPR	Idaho Department of Parks and Recreation
IRA	Inventoried Roadless Area
MIS	Management Indicator Species
MMPO	Modified Mining Plan of Operations
NEPA	National Environmental Policy Act of 1969
NMFS	National Marine Fisheries Service
NOA	Notice of Availability
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
RAC	Resource Advisory Committee
RMP	Resource Management Plan
ROD	Record of Decision
TCM	Thompson Creek Mine
TCMC	Thompson Creek Mining Company
TMDL	Total Maximum Daily Load

TEPCS	Threatened, Endangered, Proposed, Candidate, and Sensitive
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WHBMA	Wild Horse and Burro Management Area

1.0 Introduction

This report describes the strategy, methods, and techniques that were used to involve the public in scoping of the Environmental Impact Statement (EIS); summarizes the input received from the public, agencies, Native American tribes, and other interested parties prior to and during the scoping period; and describes the process used to identify a reasonable range of practicable alternatives for the EIS.

Thompson Creek Mining Company (TCMC) has submitted a Modified¹ Mining Plan of Operations (MMPO) to the Bureau of Land Management (BLM) Challis Field Office; the U.S. Forest Service, Salmon-Challis National Forest (Forest Service); and other cooperating agencies for an expansion and extension of mine life of the Thompson Creek Molybdenum Mine (Mine) in Custer County, Idaho. In relation to the MMPO, TCMC is also expected to submit an application to the U.S. Army Corps of Engineers (USACE) for a permit under section 404 of the Clean Water Act of 1972, as amended (CWA), to discharge dredged or fill materials into waters of the U.S. In addition, TCMC has submitted a proposal to exchange Federal land administered by the BLM for private lands controlled² by TCMC. The BLM and Forest Service have determined that their required responses to the MMPO and land exchange proposal would be significant Federal actions requiring preparation of an EIS.

The BLM, Forest Service, and USACE must issue interrelated decisions in response to the MMPO, section 404 permit application, and land exchange proposal. Consequently, these agencies are collaborating in the preparation of a single EIS that will be the basis for the agencies to issue their decisions. The U.S. Environmental Protection Agency (EPA), Idaho Department of Environmental Quality (IDEQ), and Idaho Department of Lands (IDL) are also collaborating in the preparation of the EIS to ensure that the preferred alternative is in compliance with these agencies' relevant laws, regulations, and policies. Analysis of the effects of the Federal responses to the MMPO, section 404 permit application, and land exchange proposal, including the preparation of an EIS and issuing Records of Decision (RODs) pursuant to the National Environmental Policy Act of 1969, as amended (NEPA), is hereafter referred to as "the project."

TCMC mines molybdenum³ on private land and on Federal land open to mineral entry pursuant to the General Mining Laws of the U.S. These laws confer a statutory right to conduct operations that are reasonably incident to exploration and development of locatable mineral deposits, in compliance with other applicable laws and regulations. TCMC submitted the MMPO describing operations necessary to continue to develop the Mine in a reasonable (economical, technologically feasible, and safe) manner. The operations described in the MMPO are necessary for TCMC to continue to supply national and worldwide demand for molybdenum. TCMC is expected to submit the section 404 permit application to obtain authorization to discharge dredged or fill materials into waters of the U.S. Such discharge would be necessary for TCMC to implement the MMPO.

¹ Supplemental under 36 CFR 228.4(a)(3).

² The lands are owned by TCMC's agent, Western States Land Management, Inc.

³ In the form of a concentrate of the mineral molybdenite formally known as molybdenum disulfide (MoS₂).

TCMC is allowed to propose a land exchange involving Federal land pursuant to section 206 of the Federal Land Policy Management Act of 1976, as amended (FLPMA). Exchanges of Federal lands are permitted pursuant to section 206 of the FLPMA if the public interest would be well served by the exchange. TCMC proposed the land exchange primarily to consolidate its land ownership in the vicinity of the Mine and allow TCMC to safely, efficiently, and effectively manage the Mine. The land exchange would also allow the U.S. to obtain land with resource qualities considered to be of significant value to the public in exchange for the Federal land that would be distinctly impacted by mining operations. TCMC intends to expand its mining operations onto portions of the selected land pursuant to the General Mining Laws of the U.S. and TCMC's ownership of unpatented mining claims. Hence, the Federal land would be impacted by the proposed mining operations with little benefit to the general public, apart from economic impacts. If the land exchange occurred, the BLM would administer the offered lands for the benefit of the general public in exchange for the selected land that would be impacted by mining.

1.1 Proposed (Federal) Actions

The BLM and Forest Service propose to respond to the MMPO in accordance with 43 CFR 3809.411(d) (BLM) and 36 CFR 228.5 (Forest Service) by either approving the MMPO as submitted or approving the MMPO subject to changes, including additions, or conditions necessary to meet the requirements of the BLM surface management regulations (43 CFR 3809) and/or Forest Service mining regulations (36 CFR 228A). In response to the anticipated section 404 permit application, the USACE will evaluate the alternatives and decide whether or not to issue a section 404 permit. Any permit issued may require special conditions or require the applicant to mitigate for project impacts to offset unavoidable adverse impacts to wetlands, streams, and other aquatic resources authorized by the issuance of a permit under section 404 of the CWA. In response to the land exchange proposal, the BLM proposes to decide whether to approve a Federal land disposal action⁴ and amendment of the 1999 Challis Resource Management Plan (RMP) to identify the Federal land involved in the exchange as suitable for disposal pursuant to the FLPMA.

1.2 Purpose and Need

The purpose of the proposed Federal action in response to the MMPO is for the BLM and Forest Service to determine if changes, including additions, or conditions to the MMPO are necessary to meet the requirements of the BLM surface management regulations (43 CFR 3809) or Forest Service regulations (36 CFR 228A), within the context of TCMC's statutory rights under the General Mining Laws of the U.S. The purpose of the proposed section 404 permit decision by the USACE is to ensure that any discharge that would be authorized by the permit would comply with the CWA and 33 CFR 320 *et seq.* The purpose of the proposed BLM action in response to the land exchange proposal is for the BLM to complete a land disposal action if such would be in the overall public benefit pursuant to section 206 of the FLPMA and, if so, for the BLM to amend the Challis RMP to identify the selected land as suitable for disposal in compliance with section 102 of the FLPMA.

⁴ The BLM uses "land disposal" to refer to any action which involves land leaving Federal ownership, e.g., a land exchange or land sale.

The need for the proposed Federal actions is the agencies' responsibilities under applicable Federal laws and regulations to consider and respond to the MMPO, 404 permit application, and land exchange proposal.

1.3 National Environmental Policy Act and Public Involvement Process

The NEPA requires an environmental review of major Federal actions that have the potential to significantly affect the quality of the human and natural environment. One of the primary purposes of the NEPA is to ensure that environmental considerations are incorporated into Federal decision-making.

In accordance with the NEPA, public comments were solicited during a 30-day scoping period from August 3 through September 1, 2010. However, all scoping comments received to date by the agencies were reviewed and also included in this report. Comments received after completion of this report will still be accepted and considered as well as is feasible by the agencies. The goal of public involvement is to gain public understanding and participation in the analysis and decision-making process regarding the proposed Mine expansion and land disposal. Comments were used to develop issues to be addressed in the EIS (**Section 4.0**) and were also used to refine and/or create alternatives to be analyzed in the EIS (**Section 5.0**).

1.4 Scoping Process

1.4.1 Notice of Intent

The Notice of Intent to Prepare an EIS (NOI) was published on August 3, 2010, in the *Federal Register*, Volume 75, No. 148, Page 45652 (**Appendix A**). The publication of the NOI initiated the formal 30-day scoping period. The NOI complied with the requirements of 40 CFR 1508.22 and U.S. Forest Service Handbook (FSH) 1909.15.21 and 1909.15.11.

1.4.2 Project Website

A website for the project was launched concurrently with publication of the NOI on August 3, 2010, and will remain active throughout the project. The site is available via the BLM Idaho State Office NEPA website (http://www.blm.gov/id/st/en/info/nepa/nepa/thompson_creek_mine.html). Scoping information posted to the site includes the NOI, BLM news releases, a description of the MMPO and land exchange proposal, an explanation of the NEPA process, a copy of the scoping letter, a blank comment sheet, 11 maps and figures, and contact information (**Appendix A**). The email address initially provided for public comment in the scoping documents was invalid. A correction notice and revised documents with the correct email address were placed on the site on August 11, 2010.

1.4.3 Legal Notice and Press Releases

A legal notice (**Appendix A**) was published in *The Challis Messenger*, Challis, Idaho, and *The Idaho Statesman*, Boise, Idaho on August 5, 2010. A BLM press release was also sent to Idaho newspapers, television stations, and radio on August 3, 2010. The email address initially provided for public comment in the legal notices and press release was invalid. Legal notices with the correct email address were published in *The Challis Messenger* and *The Idaho*

Statesman on August 19, 2010, and August 14, 2010, respectively. A corrected press release was sent on August 11, 2010, to parties who had received the August 3, 2010, release.

1.4.4 Scoping Mailing

The agencies prepared a scoping letter that summarized the MMPO, the land exchange proposal, and proposed Federal actions. The scoping letter also included information on participating in the public involvement process, including information on public scoping meetings (**Section 1.4.5**). The letter, a more detailed description of the MMPO and land exchange proposal including maps, and a blank comment form were mailed to 617 potentially interested parties on August 3, 2010. As these documents also contained an invalid email address for public comment, a postcard with the correct email address was mailed to these parties on August 12, 2010. The mailing list of potentially interested parties (**Appendix B**) was compiled from all recent BLM, Forest Service, and USACE NEPA mailing lists for projects in Custer County, as well as the mailing list for the Idaho Cobalt Project EIS. The mailing list for the Thompson Creek Mine EIS also includes additional parties who might be interested in the project such as adjacent land owners or land managers.

The mailing list will continue to be revised during the project by adding parties who respond as a result of the legal notice, NOI, public meetings, website, and Draft EIS (DEIS) or parties that request to be on the list.

The scoping comment form included a place to indicate whether a party wished to be on the mailing list. Respondents who were not already on the list and who checked the form were added to the list. Non-governmental parties on the list who did not respond will be removed from the list. The mailing list may also be reduced in size during the project by parties who indicate they would like to be removed or will obtain future project information via the project website.

1.4.5 Public Scoping Meetings

Two public scoping meetings were held in Boise and Challis:

- August 23, 2010: 6:00 PM to 8:00 PM, BLM Boise District Office, 3948 Development Avenue, Boise, Idaho
- August 24, 2010: 6:00 PM to 8:00 PM, Challis Middle School, 700 Main Street, Challis, Idaho

The open house format meetings provided attendees with copies of the description of the MMPO and the land exchange proposal, an explanation of the NEPA process, the scoping letter, and maps of the project area. Posters were also used to depict the MMPO and the land exchange proposal and to provide background information on current mining operations and environmental conditions. Comment forms were available at the meetings. Representatives of the agencies and JBR Environmental Consultants, Inc. were present at each meeting to answer questions, discuss the project, and accept public comments. In addition, representatives from TCMC were present to answer questions about the project. There were 19 attendees at the Boise meeting and 39 attendees at the Challis meeting (**Appendix C**).

1.5 Internal Scoping

1.5.1 Internal Scoping Meeting

An internal scoping meeting was held on November 24, 2009, in Challis to solicit comments from State and Federal agencies with jurisdiction or interest in the project. Minutes from the meeting are in **Appendix D**. A summary of the agency scoping comments obtained at the meeting and immediately following, including suggestions for alternatives to the MMPO and land exchange proposal, are provided in **Table 1.5-1** and **Table 1.5-2**. Note that not all these comments will be analyzed in the EIS.

Table 1.5-1 Summary of Agency Comments from the Internal Scoping Meeting

Summary of Agency Comments from the Internal Scoping Meeting
General
The EIS should analyze how regulatory oversight of the selected land would change once it transitions from public to private.
What is the rationale for the size of the land requested for exchange (i.e., why is the selected land so large)?
Complete information on the power line is needed in the EIS (i.e., what roads would be necessary for construction and maintenance, whether wetlands would be impacted, etc.).
The EIS should analyze the potential impacts (direct and indirect) to human health from injury or death of people working at the Mine due to rockfall, industrial accidents, etc. The impacts should be analyzed using past data from the Mine and relevant statistics (perhaps driving to work on highway has the greatest risk).
The EIS should analyze the cumulative impacts of a potential future TCMC-Forest Service land exchange and the impacts of Forest Service mining regulations (36 CFR 228) no longer applying to the mine.
The reclamation plan should be summarized in the EIS and key changes highlighted, such as cast blasting of pit walls, long-term water management, benching of the tailings embankment face, and final contouring of reclaimed facilities (map or photo simulations would be good).
The preferred alternative should identify and evaluate selected land (in public or private ownership) that could be used as borrow areas for Mine closure.
Under the MMPO as submitted, TCMC would cease production in approximately 2025, but substantial reclamation work, and its associated environmental and economic impacts, would occur for years, with a minor amount of reclamation work occurring for the foreseeable future. The EIS should extend long-term impact analysis for all resources beyond 2025 to include reclamation work.
The EIS should evaluate the impacts of the lack of single-source documentation describing the evolution and exact configuration of existing and planned Mine facilities (particularly the tailings impoundment) including maintenance and monitoring plans on the ability of future site managers to minimize the potential for facility failures and adverse environmental impacts over the life of the Mine through closure, reclamation, and long-term water management.
Air Quality and Noise
Ongoing mining operations will release greenhouse gases, which should be quantified in the EIS.
The EIS should assess the impacts of fugitive dust, blasting, vehicle traffic, emissions from operations, etc.
The EIS should assess air quality in terms of human health and safety for TCMC employees and surrounding communities.
Point source air emissions that remain unchanged by the project and are already permitted are not a significant issue.
Cumulative Impacts: Global Warming/Climate Change Greenhouse gas emissions: the EIS should evaluate current levels produced from the Mine as compared with what would occur following Mine expansion, compare alternatives, and evaluate on a global scale (if reasonable). The EIS should evaluate air quality to include emissions from vehicle traffic related to the Mine such as employees commuting and the hauling of the molybdenum concentrate to Pennsylvania. Evaluate alternative locations for hauling (e.g., other processing plants). Some assessment of climate change predictions for the Mine locality should be made to determine if such predictions merit consideration when evaluating impacts to water quality, vegetation, soil (i.e. sediment loss), etc.

Summary of Agency Comments from the Internal Scoping Meeting
The EIS should assess impacts to local air quality from key pollutants (i.e., fugitive dust (PM ₁₀), CO, CO ₂ , NO _x , hydrocarbons, and SO ₂).
Compare SO ₂ emissions from the Mine with other industrial sources and evaluate the potential “acid rain” impact for the administrative record (and, if meaningful, in the EIS).
Visual and Aesthetic Resources
The EIS should develop or describe any planned mitigation measures for the visual impacts or to improve the main access road cut (i.e., blasting and/or vegetation).
Geology, Minerals, and Paleontology
The EIS should assess short-term and long-term stability of the expanded tailings dam, expanded waste rock facilities, and open pit, under both static and seismic conditions, including all reasonably foreseeable seismic conditions.
The Forest Service doesn’t have slope stability standards, so industry standards should be applied in the EIS.
Dewatering is critical for slope stability on tailings stockpiles; it is not clear that adequate dewatering of tailings would be possible under the proposed expansion.
The Forest Service would want to see design plans for any road realignments.
If exchanged, the selected land would no longer be available for saleable, locatable, or leasable minerals entry under Federal laws and regulations. A minerals potential study would need to be completed.
Irreversible, permanent impacts would occur: Molybdenum would be irreversibly removed from public land. This needs to be quantified and assessed in the EIS.
Check for known graptolite fossil localities (see Churkin 1963).
Soils
The EIS should assess the potential for restoring site productivity with soil resources.
The EIS should assess potential soil erosion and loss of productivity.
The EIS should disclose the potential for soil contamination from petroleum or other chemical spills.
New disturbance would disrupt soil textures and destroy biological soil crusts, which should be characterized in the EIS.
Vegetation, Forest Resources, and Invasive and Non-Native Species
Benefits provided by forest vegetation, such as water uptake, soil stabilization, etc., are more valuable than the timber due to poor timber quality and steep slopes. The EIS should assess what would be lost due to Mine expansion.
The EIS should assess the loss of carbon sequestration that would occur due to timber loss.
Trees would likely establish naturally on reclaimed areas identified as unsuitable for tree cover. This could destabilize waste materials and/or release pollutants to the environment.
Reclamation should be analyzed in the EIS.
The land exchange should include conservation agreements on the selected land to protect resource values (e.g., forest resources, fisheries, etc.).
The EIS needs to assess additional impacts to 1 st order streams and riparian vegetation.
The reclamation seed mix should be reviewed to ensure that it reflects current science.
Changes in vegetation patterns would occur and need to be identified in the EIS.
Range Resources
The EIS needs to identify how grazing permittees on the Squaw Creek allotment would access water.
The land exchange would lead to the loss of access to long-term vegetation measurement stations on the selected land (an upland and riparian station on Thompson Creek, one riparian station on Squaw Creek). This loss needs to be addressed in the EIS.
Cattle currently have access to private (TCMC) land. Any changes need to be addressed in the EIS.
AUMs need to be lowered to reflect decreased acreage available because of Mine development.
The EIS should assess how the land exchange would impact access for public and grazing permittees on Thompson Creek and Squaw Creek.
A portion of Broken Wing Ranch would become part of a horse and burro herd management area.
Access to the Saturday Mountain Pasture needs to be provided via Mine access roads leading past the core facility.

Summary of Agency Comments from the Internal Scoping Meeting
The Wild Horse and Burro Management Area (WHBMA) may be affected by the offered lands. The WHBMA adjoins and overlaps the Broken Wing Ranch. The EIS should address how the post-exchange management would adhere to the management plan for the WHBMA.
Wildlife Resources
The EIS should address how wildlife habitat (Threatened, Endangered, Proposed, Candidate, and Sensitive (TEPCS) species and general wildlife) would be affected and/or lost due to Mine expansion.
The EIS needs to describe how migration routes for big game would be impacted by Mine expansion.
The land exchange should include conservation agreements on the selected land to protect resource values (e.g., wildlife, TEPCS, fisheries, etc.).
Fencing of the selected land (after the land exchange) could impact wildlife. The potential for this to occur should be analyzed in the EIS
Following the land exchange, the selected land would function as wildlife refuge (due to TCMC's policy of no hunting on TCMC land), which could lead to wildlife impacts on habitat and vegetation. These impacts need to be analyzed in the EIS.
Direct injury or death of wildlife from mining operations is not a meaningful impact.
Impacts to wildlife from blasting should be assessed in the EIS.
Water Resources
The EIS should assess groundwater impacts from tailings seepage, overburden fills, and pit lake connection to surface water regime.
The EIS should describe site water balance for the tailings, overburden fills, and the open pit.
The EIS should assess adequacy of the water treatment plant and water management systems for long-term (post-mining) conditions.
The EIS should assess effects of operations on surface water quality and quantity.
The EIS should assess impacts to water rights.
The EIS should assess adequacy of post-closure financial assurance for restoring site productivity and maintaining long-term water quality (see Financial Assurance).
The EIS should assess adequacy of the reclamation/closure plans for maintaining site stability and long-term water quality.
TCMC must still follow regulations and laws pertaining to water quality as appropriate. For example, if the new waste rock facility would require a new 404 permit, or modification of the existing 404 permit, the appropriate analysis (wetland delineation) would be required.
The EIS should explain the financial responsibility of TCMC for water quality (see Financial Assurance).
The EIS should describe the effect of the filling of the pit on local hydrology (quantity and quality) in the short- and long-term.
The EIS should assess the untreated pit water for alternative uses such as an emergency, fire fighting, or supplementing flows in local drainages and the Salmon River under extreme low flow conditions.
The EIS should quantify linear feet of streams that would be impacted by proposed operations.
The EIS should estimate cumulative linear feet of streams already impacted by existing operations.
Wetlands, Riparian Areas, and Floodplains
The EIS should quantify areas of wetlands, riparian areas, and floodplains that would be impacted by proposed operations.
The EIS should assess stability of the tailings facility cover and potential impacts on waters of the U.S. (i.e., design of the Bruno Creek channel).
The EIS should assess impacts of existing and proposed facilities on jurisdictional waters (upstream and downstream of National Pollution Discharge Elimination System (NPDES) outfalls).
The EIS should describe mitigation of impacts to wetlands disturbed by the Mine.
The EIS should assess the effects of the land exchange proposal on wetlands.
Offsite 404 wetland mitigation may be possible in the Lyon Creek meadow (Broken Wing Ranch) but would need to occur on private property (i.e., not acquired Federal land). Any such mitigation could affect the fair market value of the land.
Fisheries and Aquatics

Summary of Agency Comments from the Internal Scoping Meeting
Fisheries could be impacted by project activities through the loss of first order streams, reduction in water quality, reduction in coarse particulate organic matter (CPOM) input, etc.
Water quality degradation (i.e., from selenium contamination) in Thompson Creek could impact fisheries.
The EIS should assess the impact to Salmon River fisheries from discharge at NPDES outfall 005 (as opposed to discharging at 001 and 002).
The EIS should assess the impacts to water quality and fisheries if the No Name waste rock facility is developed.
Under the land exchange, the BLM/Forest Service would not be able to manage fisheries/fisheries habitat in Thompson Creek and Squaw Creek. This needs to be assessed in the EIS and mitigated.
The EIS should assess impacts to fishing along sections of Thompson Creek under the land exchange proposal.
Recreation and Land Use
The EIS should assess public access issues related to disposition of BLM-administered land.
The EIS should identify how TCMC's requirements for safety and access would affect public access.
The EIS should assess the need for an easement to allow public access on Thompson Creek and Squaw Creek roads if the land exchange occurs.
BLM and Forest Service lands are used for hunting, hiking, camping, photography, etc. via Thompson Creek. The EIS should analyze whether hunting would continue to be allowed on these lands.
The project would impact recreation and recreation access, primarily through the land exchange. The EIS should examine how recreation would be affected and compare current recreation use to what would be available after the land exchange.
The EIS needs to assess how the newly acquired lands (offered lands) would be promoted for recreation opportunities.
BLM and USFS staff can provide user information regarding recreation use.
For the Broken Wing Ranch, the boat ramp should be located downstream of the L and W Mine, on the highway side of the river.
The East Fork campground could be converted into a day use area and a new campground created on the Broken Wing Ranch near the boat ramp (downstream of the L and W Mine, on the highway side of the river).
The EIS needs to discuss how TCMC would use the selected land.
The EIS should include an analysis of the range of reasonable development options TCMC could take with the selected land.
The EIS should look at the 9 th Circuit Court case (No. 07-16423, Center for Biological Diversity et al. v. BLM and ASARCO, 2009) involving mines and land exchanges. What is the "highest and best use," as defined by BLM, of the selected land? Is it mining? How does the BLM or TCMC justify that they won't be mining that acreage if mining is the "highest and best use" of the selected land?
The EIS should explain why is it reasonable for TCMC to keep the current management of the selected land, including if it is for financial reasons.
The EIS should explain whether TCMC would subdivide the selected land. It should also explain whether TCMC would decide to expand operations onto the selected land once it is private.
The land exchange may affect fire management on the selected land; the EIS should explain whether TCMC would protect that land like the BLM/Forest Service do now. It should also analyze whether mining operations would increase or decrease the risk of wildfire.
The EIS should analyze how protective management would change.
The EIS should assess future use of the lands that would become public domain through the land exchange (i.e., the ranch could be subdivided by the BLM).
The EIS should assess maintaining the main ranch house for use as seasonal housing, conferences, etc.
The EIS should explain how the landscape would be affected by the land exchange for both offered and selected land.
The land exchange acreage ratio is very high in favor of the TCMC. The EIS should explain how the values (e.g., economic, natural resource, extraction) are compared.
The BLM would lose \$60,000 in annual mining lease revenue paid by TCMC for mining claims on the exchanged land. How would this be compensated?
The EIS should assess whether the current main access road to the Mine would be reclaimed once it is no longer in

Summary of Agency Comments from the Internal Scoping Meeting
use.
The EIS should assess if the land exchange would affect access to the private Twin Apex property.
The EIS should assess how the allotment permittees would access the Saturday Mountain Pasture on the Squaw Creek Allotment.
Expansion up the Bruno and Buckskin drainages would come close to the Squaw Creek Inventoried Roadless Area (IRA) and needs to be overlaid in GIS to see if those boundaries overlap.
Socio-economic Factors
The No Action Alternative would have a socioeconomic effect on the local community, including impacts on: <ol style="list-style-type: none"> 1. Property taxes 2. Electricity rates 3. Jobs 4. Tax revenue 5. Property values
The land exchange could be a benefit in that BLM could get out of management of the selected land and TCMC already owns the minerals.
The term “Life of Mine” (LOM) should be changed to “Phase 8” to avoid misleading the public. This is a general comment pertaining to all future documents.
The EIS should analyze the cumulative impact of the No Action Alternative on molybdenum prices. The No Action Alternative would cause a spike for 1-2 years in world molybdenum prices because the Mine contributes approximately 5 percent of the total world supply. However, in the longer term world molybdenum production would match supply (i.e., no net reduction in world molybdenum production).
Native American Religious Concerns/Tribal Treaty Rights and Interests
Tribal scoping: make sure the tribes have an opportunity to comment, government to government.
Conversation with Shoshone-Bannock has occurred between BLM and Shoshone-Bannock and was recorded.
Water quality impacts to Treaty Rights, Tribal hunting rights, and access rights to tribes need to be addressed in the EIS.
The Garden Creek property is within ceded lands of the Fort Hall Indian Reservation, which needs to be considered in the EIS.
Environmental Justice
Not an issue for the EIS, because there are no affected populations.
Cultural Resources
Bruno Millsite is just outside the proposed expansion. The EIS should assess if it would be impacted now or in the future by the expansion or by the public, especially after the Mine shuts down.
The buildings on the Broken Wing Ranch should be inspected for historic significance and a historic resources report prepared. The results of this report should be used in the EIS analysis.
Broken Wing Ranch – BLM Resource Advisory Committee (RAC) recommends tearing down the Maraffio house, if the action is to manage the property. This property needs to be assessed for heritage values. A condition assessment needs to be done on the entire ranch before management plans are developed.
The Broken Wing Ranch is an historic landscape that the EIS needs to assess and demonstrate to the public.
Financial Assurance
The EIS should analyze the impacts the land exchange would have on financial assurances and the effectiveness of bonding measures pertaining to reclamation, particularly with respect to long-term water management.
The EIS should explain the financial responsibility of TCMC for long-term water quality under the current and proposed land management and other regulatory authorities.
The land exchange proposal would remove the Mine from BLM surface management regulations, including those governing financial guarantees (“bonding”). The EIS should explain what financial guarantees would be held by which agencies under the preferred alternative.
Transportation and Access
More information on roads and other infrastructure is needed in the EIS. Specifically, what roads would be needed for expansion, what roads would be needed post-closure, what roads would be reclaimed post-closure.

Summary of Agency Comments from the Internal Scoping Meeting
Hazardous and Solid Wastes
Transportation of hazardous materials has the potential to impact water quality, fisheries, wildlife, soils, etc.
The EIS should assess the potential for contamination from petroleum or other chemical spills.

Table 1.5-2 Suggested Alternatives from the Internal Scoping Meeting

MMPO
Develop an alternative that would include not developing currently permitted areas that are not necessary for the mining operation, if possible. The permits for the permitted areas that aren't going to be used should be withdrawn as an agreement, e.g., Upper Pat Hughes. The BLM and Forest Service issued RODs in 1980 approving a mine footprint (Figure B-1 in the 1980 EIS). However, because the Mine extracted more ore and less waste rock than originally planned, waste rock facility #6 (Upper Pat Hughes) and portions of waste rock facilities #3 (Lower Buckskin) and #4 (No Name) will not be used to complete Phase 7. The MMPO does not describe using these areas for Phase 8, but it is possible the areas might be used for post-Phase 8 mining (Phase 9, Phase 10, etc). Hence, to provide a conservative impact analysis, the EIS will evaluate using these areas for Phase 8 waste rock storage under the No Action Alternative. As a result, the EIS will not evaluate a separate alternative in which these previously evaluated and approved areas would not be used. Instead, the BLM and Forest Service will continue to administer the use of these areas via the plan of operations under 43 CFR 3809 and 36 CFR 228 Subpart A. That is, if TCMC for unforeseen reasons wishes to use the areas for waste rock storage, TCMC would probably be able to do so without additional NEPA analysis by these agencies, but would need to provide these agencies with detailed designs, geotechnical analyses, water quality information, etc., and obtain all necessary permits.
Include the overburden facility in the No Name drainage, as originally proposed by TCMC, as an action alternative.
Assess alternate reclamation and closure methods.
Land Exchange
The selected land should be reduced to include only that land needed to conduct Phase 8 activities proposed in the MMPO. This alternative was suggested because the current and proposed mining surface disturbance would occur on only portions of the selected land. However, the agencies determined that this alternative would not be feasible as it would result in a block of BLM-administered land being converted into an unmanageable, irregular patchwork of private and BLM-administered land.
One alternative should assess maintenance of Federal control over stream corridors.
As an alternative to the proposed Broken Wing Management Plan, consider developing a public interpretation site(s) of early homesteading at the ranch and stabilizing one or two of the older log structures.

1.5.2 Additional Agency Comments

Internal scoping has not been limited to the November 24, 2009, meeting but has been ongoing throughout the project among the BLM, Forest Service, USACE, EPA, IDEQ, and IDL. This has occurred via discussions during bi-monthly conference calls, as well as during other unscheduled calls and email. In addition, another Interdisciplinary Team meeting was held on December 13, 2010. The discussions have focused on potential alternatives, mitigation, issues, and indicators. These topics are discussed separately below.

Potential Alternatives

Potential alternatives to the MMPO and land exchange proposal submitted by TCMC were initially discussed by the Interdisciplinary Team in an internal scoping meeting on November 24, 2009, and in subsequent conference calls between agency project contacts on February 16, March 2, and March 16, 2010. Alternatives were refined further in an Interdisciplinary Team meeting on December 13, 2010. The alternatives are described in **Section 5.0**.

Mitigation

Following the November 24, 2009, meeting, the agencies advanced the concept of a conservation easement alternative to address concerns about the management of certain environmental resources on the selected land. After reconsidering the matter in more detail, the agencies decided to drop the alternative and propose mitigation measures, including conservation easements, which could be applied to the selected land under the land exchange proposal and all land disposal alternatives. The mitigation measures are described in **Section 5.2.1**.

Issues and Indicators

Following the November 24, 2009, meeting, preliminary issues and indicators were sent out to project contacts from the BLM, Forest Service, USACE, and cooperating agencies. Agency comments from the December 13, 2010 Interdisciplinary Team meeting and other communication, as well as comments from public scoping, were then used to further define the issues discussed in **Section 4.0**.

Idaho Department of Parks and Recreation Comment Letter

The Idaho Department of Parks and Recreation (IDPR) submitted additional scoping comments in a letter dated August 23, 2010. The IDPR commented on the potential for impacts to recreation and the need to address these impacts in the EIS.

EPA Comment Letter

The EPA submitted additional scoping comments in a letter dated September 27, 2010 (**Appendix F**). The EPA comments are extensive and are summarized in **Table 1.5-3**. The EPA had representatives at the November 24, 2009, meeting, and many of the comments in the letter are similar to the comments obtained during the internal scoping meeting (**Table 1.5-1**).

Table 1.5-3 Summary of Additional EPA Scoping Comments

Summary of Additional EPA Scoping Comments
General
The NEPA analysis should include a clear, concise statement of the underlying purpose and need for the project, including the broader public interest and need.
Since the Mine is an existing mine, a large amount of data and reports are available to support the EIS. However, given the number of reports available, some direction should be given as to which reports are relevant to specific analyses. Further, the EIS should provide a summary of referenced reports and data, and relevant reports should be made easily available to the public.
The EIS should be a standalone document and include any pertinent information from past analyses and data collection. The information presented should include a clear description of the environmental setting; past performance and current water quality issues; detailed mitigation, reclamation, and post closure activities; and existing and proposed Mine operations.
Due to the level of uncertainty in mathematical (numeric) models, the EIS should use caution in describing absolute outcomes based on modeling. Rather, it is recommended that a conservative approach be taken with modeling and that a range of predictive outcomes be discussed.
A site-specific conceptual model should be developed for Mine expansion using EPA recommendations.
The EIS should describe current conditions related to climate and future predictions of climate shifts, and how these would impact resources analyzed in the EIS, including reclamation.
The EIS should consider alternatives that would reduce the footprint of disturbance.
The project should include monitoring to evaluate whether or not proposed Mine facilities conform to model predictions.
The EIS should describe project monitoring and agency oversight in detail following EPA recommendations (see

Summary of Additional EPA Scoping Comments
EPA comment letter in Appendix F).
The EIS should include an analysis of cumulative effects using the best available science through a watershed approach. EPA guidance on cumulative effects should be considered in evaluating the adequacy of the cumulative impacts assessment (see EPA comment letter in Appendix F).
Air Quality and Noise
The EIS should evaluate reasonable alternatives and mitigation measures, including measures to minimize impacts to groundwater, surface water, and air.
The EIS should include air quality data previous to operation of the TCM, as well as data from existing monitoring. The EIS should identify anticipated issues based on past practices and disclose current and proposed mitigation used to minimize/constrict air emissions and fugitive dust.
The EIS should analyze greenhouse gas emissions and include mitigation measures suggested by the EPA (see EPA comment letter in Appendix F).
Wildlife Resources
The EIS should include an analysis of impacts to TEPCS species and their habitats. The EIS should also include the Biological Evaluation (BE) and the results of consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS).
Water Resources
The EIS should analyze impacts to surface and groundwater quality.
The existing water quality data set should be evaluated to ensure that the data are of the appropriate type and quality to support modeling and impact analysis.
Documents clearly stating the purpose, questions of concern, methods, data, and model limitations need to be provided for the “Phase 8 Pit Water and Groundwater Study Plan” and other modeling.
The EIS should include an analysis of impacts to waters of the U.S., including appropriate mitigation and compliance with section 404(b)(1) of the CWA.
The EIS should evaluate reasonable alternatives and mitigation measures, including measures to minimize impacts to groundwater, surface water, and air.
The EIS should clearly outline the physical design of current and proposed facilities, as well as water movement and water balance.
In order to provide reliable projections of wastewater and solid wastes from the project, the physical and chemical characteristics of ore and waste rock should be determined. The samples used to support projections should represent a range of conditions that currently occur and that could occur in the future. Analysis should consider EPA recommended analyses.
The EIS should discuss current surface water quality and natural background conditions, including water bodies listed under section 303(d) of the CWA and any applicable Total Maximum Daily Loads (TMDLs). The analysis must also include a discussion of whether or not the project would achieve requirements that there be no net degradation of water quality in water bodies that are listed under section 303(d) but that do not have approved TMDLs.
The EIS should evaluate and disclose the adequacy, reliability, and operational uncertainty associated with proposed water management techniques over the range of operating and climatic conditions. The analysis should include detailed information on chemical compositions of process water, drainage water, storm water, and treated and untreated effluents.
The EIS should characterize risks related to transportation incidents and describe mitigation, response planning, and monitoring programs to mitigate for expected problems.
Wetlands, Riparian Areas, and Floodplains
The EIS should include an analysis of direct and indirect impacts to wetlands and a discussion of how section 404 requirements would be met.
Fisheries and Aquatics
The EIS should include an analysis of impacts to TEPCS species and their habitats. The EIS should also include the BE and the results of consultation with USFWS and NMFS.
Recreation and Land Use
The EIS should discuss the value of the lands being traded and the difference in acreage of public land being

Summary of Additional EPA Scoping Comments
exchanged for significantly less acreage of private land.
The EIS should include an alternative that reduces the acreage of public land being offered.
All land exchange alternatives should include conservation easements to protect riparian values and resources of concern on the public land being offered. This may include a proposal to limit development within 1/8 mile of Thompson Creek and Squaw Creek.
Native American Religious Concerns/Tribal Treaty Rights and Interests
The EIS should discuss cultural resources and impacts to Native Americans.
The agencies should work on a Government-to-Government basis with Native American tribes and consider inviting the affected governments to participate in the NEPA process as cooperating agencies.
Financial Assurance
Financial assurance is an important component of the project and must be disclosed in the EIS. Disclosure of information on the costs of reclamation and form of financial assurance is essential to understanding the adequacy of mitigation, risks to the environment, and financial risks to the public.
The land exchange proposal would eliminate the ability of the Federal government to require or administer financial assurance as bond administration would transfer to the State. The EIS should clearly disclose these impacts, as well as the current bond amount, the need to update estimates, and the financial assurance mechanism that would exist to protect the public's resources.
It is critical to anticipate the reasonably foreseeable range of environmental impacts and not just the specifically predicted or expected case, and to have financial assurance mechanisms in place to deal with such impacts.
Transportation and Access
The EIS should analyze existing and proposed roads; roads can contribute sediment to streams and interrupt the subsurface flow of water, disturb wildlife, fragment habitat, increase fire danger, and increase the introduction of noxious weeds.

1.6 Government-to-Government Consultation

Per Executive Order 13175, Government-to-Government tribal consultation was conducted as part of the scoping process. The lands involved in the project are lands traditionally used by the Shoshone-Bannock Tribes (lands ceded by the Fort Bridger Treaty of July 3, 1868) and are within the typical area-of-interest of the Tribes. The Tribes have a treaty right to hunt on unoccupied lands of the U.S. (Fort Bridger Treaty, Article 4).

The lands involved in the project are not traditionally used by the Nez Perce Tribe (lands ceded by the Camp Stevens Treaty of June 11, 1855), nor are the lands within the typical area-of-interest of this Tribe. However, the Nez Perce Tribe has treaty hunting and gathering rights on open and unclaimed lands of the U.S. (Camp Stevens Treaty, Article III), and the Tribe is interested in the project because of concern about downstream impacts to anadromous fisheries.

1.6.1 Shoshone Bannock Tribes

Formal Government-to-Government consultation was initiated with the Shoshone-Bannock Tribes on March 8, 2007, regarding the land exchange proposal and RMP amendment. The Tribes were also formally consulted about the land exchange proposal, RMP amendment, proposed MMPO, and proposed 404 permit on March 18, 2009. At that time, the Tribes asked to be involved in the development of a preferred management alternative for the Broken Wing Ranch (part of the offered lands). To address that concern, the RAC for the BLM Idaho Falls District formed a sub-committee to evaluate management alternatives for the ranch. The sub-committee included Chad Colter, RAC member and representative for the Tribes. Consultation with the Tribes is ongoing and included Government-to-Government letters mailed to the Tribes

on March 22, 2010, and September 28, 2010. The letters included project information and offers of a site tour and additional Government-to-Government consultation regarding the project.

The Tribes submitted comments in a letter dated November 29, 2010. A summary of the comments is provided below, and the letter is included in **Appendix F**.

- As a matter of policy, the Tribes do not support land tenure adjustments for Federal lands that result in a net loss of acreage. Additional clarification is needed on the disparity in acreage between the selected land and the offered lands, as well as the purpose behind the exchange.
- The land exchange is a discretionary action, unlike approving a plan of operations for locatable minerals, which involves significantly less BLM-administered land than the selected land. The Tribes recommend that each acre be closely scrutinized to determine whether it is truly an essential component of the project.
- The Tribes would prefer to see multiple alternatives developed to provide a spectrum of configurations for the selected land, from the least amount of acres to the current proposal of 5,000 acres.
- The Tribes are concerned about the stability of the expanded tailing facility, especially under seismic conditions, and the potential for impacts to water quality and anadromous salmonids in the Salmon River basin. The EIS needs to include objective studies of the tailings impoundment stability under seismic conditions. The EIS should also include analysis of the potential for a large spring flood event to overtop the structure. A decision on the proposed expansion cannot be made without an objective analysis of tailings stability.
- The Tribes do not support a plan of operations that does not call for complete reclamation of the open pit, complete treatment of any discharged water from the Mine, and perpetual monitoring of any component of the mined area.
- A detailed description of the mine bond process should be included in the EIS, including how the bond process will account for fluctuations in the price of molybdenum that have historically occurred.
- The current bond will not be adequate to cover the additional liabilities associated with mine expansion, and a description of how closure would be implemented without incurring significant taxpayer costs should be included in the EIS.

1.6.2 Nez Perce Tribe

A Nez Perce technical staff member was notified about the project in July 2009, and the staff member toured the Mine site and the Broken Wing Ranch in August 2009. The BLM mailed a Government-to-Government letter to the Tribe with extensive project information on March 22, 2010, and offered a site tour and asked if the Tribe desired formal Government-to-Government consultation regarding any aspect of the project.

A conference call was held on May 12, 2010, among the BLM, Forest Service, Nez Perce Tribe technical staff, and JBR Environmental Consultants to discuss the project. A wide range of

issues was discussed, and a summary of the key concerns raised by the Nez Perce Tribe technical staff is provided below. Minutes from the call are in **Appendix E**.

- The Nez Perce Tribe noted that water quality information provided on the scoping figure should have included more detailed data about water discharged from the waste rock facilities (the Mine does not need to discharge water from the mill). The information in the tables shows the number of times the Mine has exceeded water quality standards in the permitted receiving streams. Although the data come from monitoring sites on the Salmon River, Thompson Creek, and Squaw Creek, data from the actual waste rock facilities (Buckskin and Pat Hughes) are also available. The Nez Perce Tribe requested that more specific information be added to these tables and also asked for documentation of requirements from the NPDES permit.
- The Nez Perce Tribe is concerned that the reclamation plans to cap the Pat Hughes waste rock facility may be insufficient to prevent leaching and contamination of ground and surface water.
- Bonding should be sufficient to insure that reclamation activities are adequately funded and guaranteed, particularly for reclamation related to fisheries. The Nez Perce Tribe also wanted assurances about how bonding would be affected if the land exchange occurs.
- The Nez Perce Tribe expressed concern about reclamation of the pit, its stability, and potential impacts of the pit lake on water quality. Stability of the pit under seismic events was a related concern that the Tribe would like addressed in the EIS.
- The long-term water quality treatment plan and any plans for a new treatment plant should be provided.
- The Nez Perce Tribe has concerns about the stability of the tailings impoundment and would like to know the results of studies being conducted on the impoundment.
- If the land exchange occurs, continued agricultural hay production on the Broken Wing Ranch would not benefit the public.
- Enhancement of steelhead spawning and rearing in Lyon Creek would benefit the public and would directly benefit the Nez Perce Tribe.
- If the land exchange occurs, the Nez Perce Tribe would like to see any water rights from the Broken Wing Ranch applied to Salmon River instream flows and would like a breakdown of the water rights for the ranch.
- The FLPMA indicates that the intended use of the exchanged Federal land would not, in the determination of the authorized officer, significantly conflict with established management objectives on adjacent Federal lands and Indian Trust lands. If there is a significant conflict, then the agencies will not be able to approve the exchange.
- When conducting a feasibility analysis of the land exchange, the BLM should not overlook tribal treaty rights. The treaty right is a burden on the title that could affect the value to value exchange of the land.

- The BLM should analyze the difference between State mining regulations and Federal mining regulations in the EIS, since the regulatory jurisdiction would shift to the State if the land exchange occurs.

The BLM also mailed a Government-to-Government letter to the Tribe on September 28, 2010, with a project update and another offer of formal consultation and a site tour.

2.0 Respondents and Comment Analysis

Public scoping comments regarding the MMPO and the land disposal are compiled in this report to help determine the concerns and alternatives for evaluation in the EIS. Comments were received by mail (Thompson Creek Mine EIS, c/o Brian Buck, JBR Environmental Consultants, 8160 S. Highland Drive, Sandy, UT 84093 or BLM Challis Field Office, 1151 Blue Mountain Road, Challis, Idaho 83226), facsimile (Brian Buck, 801-942-1852), email (tcm_eis@jbrenv.com or ken_gardner_blm.gov), or hand delivery to the BLM Challis Field Office. All of the comments received by the BLM were delivered to JBR.

For the purposes of this scoping analysis, the following definitions apply: “Response” refers to a discrete piece of correspondence (letter, comment form, fax, email); “respondent” refers to each individual or organization to whom a mail identification number is assigned (e.g., a single response may represent several organizations without one primary author); and “signature” refers to each individual who adds his or her name to a response, endorsing the view of the primary respondent(s). “Comment” refers to a specific concern isolated within a given response.

By the close of the 30-day scoping period, 189 responses had been received. In addition, 23 responses were received between September 1 and September 27, 2010, for a total of 212 responses. Some responses had multiple signatures, for a total of 219 respondents. A list of respondents is included, and copies of all letters, comment forms, faxes, and e-mails received are included in **Appendix F**.

No form letters were received during the scoping period. However, TCMC sent an internal scoping letter (**Appendix G**) to employees and vendors encouraging them to provide scoping comments to the BLM. As a result, many of the public comments are similar.

3.0 Comment Summary

Each response was assigned a letter number (regardless of comment format), scanned, and filed in electronic and hard copy. A working copy was printed for comment coding. This process, with embedded quality control procedures, ensured that all scoping responses to the project were accounted for, without duplication, and transitioned to the coding phase of the process.

Each response was individually read and coded to ensure that individual comments were identified. Coding consists of identifying discrete comments, delineating them, and assigning comment codes relating to issues discussed below. Individual comments are identified numerically (x.y), with x indicating the response number and y indicating the consecutive comments within that letter. Comments are summarized by resource topic below and include citations to responses and comment numbers for reference. The comment summaries were paraphrased from the original comments to convey the content of multiple similar comments.

The notation of [RESOURCE] indicates that the comment applies to multiple resources and that the comment is also included in the noted additional resource section. Not all these comments will be analyzed in the EIS.

3.1 General

- 3.1.1** Respondent supports expansion of the Thompson Creek Mine. (1.1, 3.1, 9.1, 11.1, 14.2, 19.4, 23.1, 24.3, 25.1, 26.3, 27.3, 30.1, 31.1, 32.3, 34.3, 35.3, 37.4, 39.3, 48.1, 48.3, 49.1, 60.1, 62.1, 63.2, 64.1, 71.5, 72.1, 74.1, 76.2, 80.2, 81.1, 84.1, 84.4, 111.2, 136.2, 141.2, 174.1, 176.3, 177.2, 182.1, 196.2, 197.3, 208.1, 198.3, 199.1)
- 3.1.2** Respondent opposes expansion of the Thompson Creek Mine. (73.5)
- 3.1.3** The EIS should consider the intrinsic value of the Thompson Creek area and not just the financial gains from mining. (73.1)
- 3.1.4** The TCMC has a proven record of responsible action with regard to its environmental impacts, and its environmental record and commitment should be taken into account in the EIS process (2.2, 4.3, 8.2, 8.5, 12.1, 15.1, 16.4, 17.2, 19.2, 20.2, 26.2, 32.1, 34.2, 36.2, 37.2, 42.1, 43.2, 46.3, 48.4, 49.2, 50.1, 52.2, 55.1, 55.4, 56.1, 56.4, 57.1, 58.2, 61.2, 62.3, 62.4, 67.2, 67.5, 74.2, 76.1, 79.2, 80.1, 81.2, 83.3, 90.2, 93.2, 108.2, 109.2, 111.3, 113.2, 116.1, 117.1, 118.2, 122.2, 125.2, 126.2, 128.2, 129.2, 134.3, 135.2, 138.1, 139.2, 140.1, 141.4, 144.2, 144.2, 145.1, 147.5, 148.5, 149.5, 150.3, 152.2, 153.3, 154.2, 163.2, 164.1, 164.2, 167.2, 168.2, 172.2, 173.2, 176.2, 179.3, 180.2, 181.1, 183.4, 184.2, 188.2, 190.1, 192.2, 196.1, 196.4, 197.2, 206.3, 209.2, 210.3, 18.3, 200.5, 213.3)
- 3.1.5** TCMC is committed to conducting operations in a safe and responsible manner. (152.3, 173.3, 206.4)
- 3.1.6** Expansion of the Mine would not increase environmental impacts. (71.4)
- 3.1.7** The EIS should address only the environmental impacts of the amended plan of operations submitted by TCMC. The Mine has operated since 1983, and the amended plan only requires a small amount of additional Federal land. Thus, only limited environmental impacts should result from the amended plan of operations and be analyzed in the EIS. (55.3, 56.3, 61.5, 106.2, 137.2)
- 3.1.8** Due to the extremely large size of the Thompson Creek Mine, the EIS should include a comprehensive and detailed consideration of long-term impacts, rather than just the short-term impacts of Mine operations through 2025. (13.1, 13.4)
- 3.1.9** The final approved mining phase is scheduled for completion in 2016; when does TCMC actually need to begin work in the proposed expansion areas? (193.4)
- 3.1.10** The EIS should explain how waste management at TCMC would be affected if the MMPO is not approved. (193.9)

3.2 Air Quality and Noise

- 3.2.1** The BLM should design alternatives that minimize air pollution risks, particularly those from diesel-fueled equipment. Specifically, former Mine sites should have the

potential to be developed as renewable energy facilities should these resources (wind, solar, geothermal) be available. (77.1)

- 3.2.2** TCMC should upgrade equipment and power supplies to reduce harmful emissions. (77.2)

3.3 Visual and Aesthetic Resources

- 3.3.1** The Mine closure plan needs to include additional information on the type, pattern, and projected ecological succession on all reclaimed areas. Specifically, the pit should be refilled to the maximum extent possible, and where external waste rock facilities remain, these areas should be re-contoured in such a way as to blend into the surrounding environment instead of remaining in ziggurat form. (77.8)

3.4 Geology, Minerals, and Paleontology

- 3.4.1** [SOCIO-ECONOMIC FACTORS] Mineral resources can be exploited responsibly in ways that boost the local and national economy. (2.3, 205.2)
- 3.4.2** TCMC provides a valuable product to the world. Molybdenum is important in the modern world and is used in many important green technologies. It is vital in the preservation and efficient use of natural resources. Development of the orebody at the Mine should not be halted due to constraints on the tailings facilities. (8.3, 8.4, 54.2, 64.4, 209.3, 209.4)
- 3.4.3** [SOCIO-ECONOMIC FACTORS] The sale of molybdenum to foreign corporations would help increase the financial security of the U.S. (71.2, 200.2)
- 3.4.4** A strong, environmentally compliant, mining industry needs to be maintained in the U.S to decrease dependence on foreign sources. (18.6, 79.3, 198.2)

3.5 Soils

- 3.5.1** Mine expansion should include provisions to protect soil from contamination. (73.3)

3.6 Vegetation, Forest Resources, and Invasive and Non-Native Species

- 3.6.1** Disturbance to flora from Mine expansion should be kept at a minimum. (73.4)

3.7 Range Resources

- 3.7.1** [FISHERIES AND AQUATICS, RECREATION AND LAND USE] The land exchange would convert a portion of the BLM Thompson Creek grazing allotment to private property, which would effectively eliminate grazing on the allotment and negatively affect the permittee and its management of the allotment. The EIS should consider alternative land exchange configurations that would meet the purpose and need, including moving the western boundary of the selected land at least 500 yards east of Thompson Creek. This alternative would protect potential livestock grazing, which is limited to the riparian corridor by steep terrain. (194.1, 194.3, 194.4, 194.5, 211.1, 211.2, 211.4)
- 3.7.2** Livestock should be excluded from the upper meadow above the Lyon Creek property. (77.21)

3.8 Wildlife Resources

- 3.8.1** TCMC takes efforts to avoid disturbance to wildlife. (67.3)
- 3.8.2** Disturbance to wildlife from Mine expansion should be kept at a minimum. (73.4)
- 3.8.3** [RECREATION AND LAND USE] The selected land should remain public land and not be given to TCMC because it is home to a wide variety of wildlife and provides recreational and hunting access for the public. (76.7)
- 3.8.4** There could be adverse impacts to birds and other wildlife from exposure to contaminated pit lake water after mining operations have ceased. Mine operations need to have a contingency plan to treat water in perpetuity after Mine closure, if water does not consistently meet water quality standards. (13.3, 77.9)
- 3.8.5** [WATER RESOURCES] The proposed expansion should not compromise watersheds and water sources for humans and wildlife. (73.2)

3.9 Water Resources

- 3.9.1** Past and current mining by TCMC has not contaminated water resources. (67.4, 213.4)
- 3.9.2** The Salmon River and its resources should be given the highest level of protection from contamination. (66.1)
- 3.9.3** [WILDLIFE] The proposed expansion should not compromise watersheds and water sources for humans and wildlife. (73.2)
- 3.9.4** The EIS and any applicable operating permits should clearly state how Federal agencies, including EPA, would comply with state water law and upstream water rights. TCMC should first acquire all necessary water rights before expanding. (6.2, 77.4)
- 3.9.5** [FISHERIES AND AQUATICS] The EIS should examine the effects of a tailings dam leak (both major and minor), including impacts to adjacent streams and the Salmon River. As the area is prone to earthquakes, the analysis should include an earthquake scenario. (13.2, 70.2)
- 3.9.6** It would be prudent and less risky to keep the tailings dam slope at 3 to 1 or reduce it to 3.25 to 1 to reduce the risk of dam failure. TCMC should look at the maintenance of its dams from a risk-based perspective because the dams simply cannot fail. (79.4, 79.5)
- 3.9.7** The EIS should examine the long-term plans for dealing with acid mine drainage under each alternative, including funds to pay for it when the Mine is no longer operational. To address these issues, waste rock and ore need to be more carefully evaluated, segregated, and handled. (70.3, 77.11, 77.12)
- 3.9.8** Water quality information contained in the project information was collected by TCMC rather than independent agencies. Due to the history of pollution by mines promoting themselves as environmentally sensitive, the public can't accurately judge the overall impacts of the existing the Mine without independent, comprehensive data. (75.4)

- 3.9.9** The EIS should explain how the MMPO would affect the current NPDES permits and if EPA would be making any decisions relative to the current NPDES permit. (193.10)
- 3.9.10** The BLM should design alternatives to reflect increased water conservation, specifically measures in addition to the current recycling of water. (77.3)
- 3.9.11** The BLM should evaluate an alternative in which the tailings are relocated back into the main pit or other geologically stable area, double lined with groundwater monitoring, capturing, pumping, and treatment capabilities. The cost of this alternative should be weighed against the expense of catastrophic dam failure. (77.7)
- 3.9.12** The EIS should project whether water identified for discharge or exposed in a pit lake (at NPDES Outfall 002 or 005) could meet water quality standards, and if not, alternatives should be developed to ensure standards are met. (77.10)
- 3.9.13** The EIS should analyze whether the BLM can hold water rights for irrigation purposes and whether the Challis RMP would need to be amended to allow the BLM to manage agriculture. (194.15, 194.16)

3.10 Wetlands, Riparian Areas, and Floodplains

- 3.10.1** If the tailings dam expansion entails dumping potentially toxic waste material into Bruno Creek, a water of the U.S., this is inconsistent with the CWA. The disposal of any pollutants (including sediment) needs to at least be consistent with any established TMDLs developed; otherwise, alternate sources of disposal need to be identified. (77.5)
- 3.10.2** The tailings dam expansion would result in the loss of wetlands, floodplain, and riparian areas in Bruno Creek both upstream and downstream of the tailings dam. (77.25)
- 3.10.3** Wetland plants may absorb and concentrate contaminants once the tailings impoundment is re-vegetated, and thus toxins would enter the environment. Respondent suggests installing a geosynthetic clay liner over all potentially hazardous materials, covered by a layer of coarse drain material with growth medium on top, designed to ensure contaminants stay submerged and saturated. (77.6)

3.11 Fisheries and Aquatics

- 3.11.1** The Salmon River and its resources should be given the highest level of protection from contamination. (66.1)
- 3.11.2** Expansion of the Mine is unwarranted in light of the progressive decline in water quality and fish populations in the Salmon River due to over a century of pollution by mine waste and runoff. (75.5)
- 3.11.3** The NPDES outfalls present a risk to fish and wildlife, and the EIS should analyze the impacts of NPDES outfalls (under all alternatives) to Endangered Species Act (ESA)-listed fish species and habitat. (194.10)
- 3.11.4** [RANGE, RECREATION AND LAND USE] The land exchange proposal would place Thompson Creek in private ownership and would jeopardize the protection of habitat for terrestrial wildlife and native fish species, including three fish species

protected by the ESA: bull trout, Chinook salmon, and steelhead. The EIS should consider alternative land exchange configurations that would meet the purpose and need, including moving the western boundary of the selected land at least 500 yards east of Thompson Creek. This alternative would enable better protection of habitat for fish and wildlife. If any alternatives include Thompson Creek as a boundary, the EIS should include an assessment of whether such an alternative is a reasonable alternative, as defined by NEPA, to the stated purpose and need of the land exchange (e.g., to consolidate land position and best manage the Mine). The stated purpose and need does not reflect the need for BLM or USFWS to protect and recover ESA-listed fish in Thompson Creek and is not in the best interest of the American public as expressed through the ESA. (194.2, 194.4, 194.7, 194.8, 194.9, 211.5, 211.6)

- 3.11.5** The EIS should include an analysis of impacts to ESA-listed fish species and wildlife from continuing use of the Broken Wing Ranch for irrigated agriculture. (194.14)
- 3.11.6** [RECREATION AND LAND USE] The BLM should develop alternatives which maintain, improve, redesign, or dismantle the current network of irrigation ditches in the upper Lyon Creek meadow so that more water is available in Lyon Creek for spawning of ESA-listed fish species. (77.22)
- 3.11.7** [WATER] The EIS should examine the effects of a tailings dam leak (both major and minor), including impacts to adjacent streams and the Salmon River. As the area is prone to earthquakes, the analysis should include an earthquake scenario. (13.2, 70.2)

3.12 Recreation and Land Use

- 3.12.1** A camping facility along the Salmon River at the Broken Wing Ranch would be a valuable asset for IDPR. (4.2)
- 3.12.2** Before the development of an IDPR campground on the Broken Wing Ranch is considered, especially considering there is already one at the confluence of the Salmon River and East Fork, the negative effects of increasing use, particularly increased motorized use in the area, should be considered. Additionally any campground should be on the right/east side of the Salmon River and not on the west side. (77.18)
- 3.12.3** The private bridge which accesses the Lyon Creek property could be opened to pedestrian or mountain bike use, as engineering and liability issues likely preclude use of the bridge by the public in full-sized vehicles. Converting the two-track road into a non-motorized, single-track trail would provide increased non-motorized opportunities. (77.20, 77.26)
- 3.12.4** TCMC should be allowed to acquire the selected land to continue mining. (3.2, 6.1, 16.1, 19.4, 20.3, 22.2, 23.2, 24.2, 25.2, 33.2, 34.4, 35.1, 40.1, 44.2, 45.1, 79.6, 84.3, 92.1, 98.1, 104.1, 115.1, 124.1, 128.3, 130.2, 141.3, 153.1, 165.2, 179.1, 184.3, 192.1, 195.1, 196.3, 213.5)
- 3.12.5** The land exchange would exchange inaccessible land for accessible land and would be good for management and public use. (189.2)
- 3.12.6** The land exchange is important because it would strengthen ties between local government branches. (33.3)

- 3.12.7** BLM should dispose of, or sell, the land surrounding the Mine to TCMC rather than conduct a land exchange. (4.1, 7.7, 68.1)
- 3.12.8** Selling the selected land (i.e., rather than conducting a land exchange) would provide funds to pay for the large maintenance backlog on public lands. (68.2)
- 3.12.9** The land exchange is unnecessary for expansion of the Mine. (9.3)
- 3.12.10** Public land should not be exchanged to accommodate commercial exploitation of natural resources. (75.1)
- 3.12.11** [FISHERIES AND AQUATICS] The BLM should develop alternatives which maintain, improve, redesign, or dismantle the current network of irrigation ditches in the upper Lyon Creek meadow so that more water is available in Lyon Creek for spawning of ESA-listed fish species. (77.22)
- 3.12.12** The BLM parcel identified for exchange has not been designated as available for disposal, so the BLM needs to provide reasons for why this parcel was originally excluded. (77.23)
- 3.12.13** The EIS should analyze whether the land disposal is necessary or appropriate to further the stated purposes of land consolidation and Mine management. (211.3, 211.6)
- 3.12.14** The EIS needs to provide copies of all appraisals of the public and private properties to be exchanged so the public can understand if equal values are being exchanged. (194.11)
- 3.12.15** The BLM should identify the regulatory environment under different management scenarios (i.e., how would it differ if TCMC owns the land) as a scoping issue, to address differences in mitigation and monitoring in dealing with catastrophic events (such as spills, acid mine drainage, failure of design features). As such, the EIS should compare the number of agency inspections, depth of inspections, frequency of bonding review, bonding amounts, history of bonding increases, and amount of imposed fines for violations under different management scenarios. (70.1, 77.13)
- 3.12.16** The land exchange proposal should include a condition requiring TCMC to remove unwanted structures following Mine closure. (69.1)
- 3.12.17** The land exchange should include a condition that upon completion of mining and reclamation, an easement would be established to allow public access. This would highlight successful reclamation and allow full access to surrounding BLM- and Forest Service-administered land. Allowing access to the selected land for hunting (without TCMC fees) would limit TCMC liability under Idaho law. (69.3, 69.4)
- 3.12.18** The proposed eastern boundary of the selected land would border private land owned for recreation residences and would decrease property values and create user conflict. The proposed eastern boundary of the selected land would also include land involved in a pending land sale between BLM and another private land owner. The EIS should include an alternative in which the eastern boundary of the selected land does not extend north of Bruno Creek or east of the ridge dividing the Bruno Creek and Squaw Creek drainages. Additional public land south of Bruno Creek and west of the Squaw Creek road could be included in the land exchange, rather than the area north of Bruno Creek (72.2, 72.3, 72.4, 72.5, 72.6, 72.7)

- 3.12.19** The proposed eastern boundary of the selected land would include a portion of the Squaw Creek road. The public should retain access to all parts of this road, as it leads to public land higher in the drainage. (201.1)
- 3.12.20** [RANGE, FISHERIES AND AQUATICS] Alternatives extending the land exchange boundary to Thompson Creek should be eliminated from analysis in the EIS. If any alternatives include Thompson Creek as a boundary, the EIS should include an assessment of whether such an alternative is a reasonable alternative, as defined by NEPA, to the stated purpose and need of the land exchange (i.e., to consolidate land position and best manage the Mine). The stated purpose and need does not reflect the need for BLM or USFWS to protect and recover ESA-listed fish in Thompson Creek and is not in the best interest of the American public as expressed through the ESA. (194.8, 194.9)
- 3.12.21** Instead of the selected land, particularly Thompson Creek and Squaw Creek, TCMC should be given the remaining land between parcels in the center area of the Mine. (76.11)
- 3.12.22** The transfer of Thompson Creek and Squaw Creek to TCMC is unnecessary because the current uninhibited use of Thompson Creek, along with the requested Phase 8 Expansion, is adequate for TCMC's needs. (76.5, 76.6, 76.8)
- 3.12.23** The land exchange would open up sportsman access on the offered lands and would be good for tourism. (45.2, 51.2, 52.3, 114.2, 130.3)
- 3.12.24** The acquisition of the Broken Wing Ranch by the BLM is not a wise decision because the value of the ranch would be biased toward agricultural and livestock pastoral use and benefit only the lease holder. (76.9)
- 3.12.25** The offered lands would not add any measurable value to the public domain and would likely be sold. As a result, the land exchange amounts to selling off public land, rather than a useful land exchange. (75.3)
- 3.12.26** Although the appraised value of undeveloped public land and ranch property may make the offered and the selected lands comparable, the selected land contains resources values that are irreplaceable. Specifically, the environmental resource values of Thompson and Squaw Creek are far greater than those of the Salmon River frontage and Lyon Creek on the Broken Wing Ranch. (75.2, 76.3, 76.4, 212.1, 212.3)
- 3.12.27** The appraisal process does not adequately reflect the true value of the BLM-administered land proposed for disposal. To understand the true value of that land, the EIS should calculate costs as if that land were not available for use as an expanded dump site and TCMC had to find a different suitable dump location. In essence, the use of that land would allow TCMC to extract significant amounts of ore, worth a significant value. These evaluations should be considered with traditional appraisals that assess timber or development potential. (77.14, 77.15)
- 3.12.28** The BLM should develop additional alternatives of private lands for exchange in the event that land trade evaluations require additional private properties, such as private in-holdings and mining claims in the White Clouds, Frank Church River of No Return Wilderness, and Sawtooth National Recreation Area. An expanded land exchange that includes the Broken Wing Ranch, the Garden Property, and additional properties (with

improved infrastructure more suitable for wildlife and public uses) is preferable to an outright sale. (77.16, 77.24, 212.2)

- 3.12.29** The offered lands are worth more than the selected land due to the Broken Wing Ranch's prime river frontage and riparian habitat, and the land exchange represents a gain for the public. (17.3, 192.3, 192.4)
- 3.12.30** Lands on the Broken Wing Ranch where agriculture would continue under BLM administration should be made available for public lease through a bid process. (5.1)
- 3.12.31** The University of Idaho should be considered as a potential overseer of Broken Wing Ranch management because the BLM is understaffed in its current management of allotments. (76.10)
- 3.12.32** The land exchange should include development of a boat ramp and parking area on Parcels D, E, and F of the Broken Wing Ranch. (66.3)
- 3.12.33** Problematic land use issues should be addressed on the land exchange parcels before transferring them to public ownership. Improvements should be considered such as fencing riparian and other areas from livestock grazing, improving road and trail systems to reduce resource impacts, and closing, rehabilitating, and signing roads and trails that are problematic. In addition, as the 404 permitting process is quicker and simpler for private lands, the land exchange proposal should include a condition requiring TCMC to get all applicable permits for removal of the dam on Lyon Creek prior to transfer of ownership. (69.2, 77.17)
- 3.12.34** The EIS should include a land exchange alternative that analyzes the impacts of the Broken Wing Ranch being returned to native vegetation with no irrigated agriculture. (194.12)
- 3.12.35** The EIS needs to analyze reasonable alternatives for the operation of the Broken Wing Ranch, including the level of public access and examples from other BLM-administered land with similar agricultural activities. (194.17)
- 3.12.36** Development of the Broken Wing Ranch could lower adjacent private land values. There should be no development adjacent to this property, including buildings, campgrounds, tree removal along the irrigation canal, or discontinuation of water flow through the irrigation canal. And roads should discourage frequent or noise traffic. (201.2, 201.3)

3.13 Socio-economic Factors

- 3.13.1** The Mine provides important economic benefits to local economies and communities in central Idaho, including jobs for TCMC employees. Expansion of the Mine is necessary for the benefits to continue. (2.1, 3.3, 8.1, 9.2, 10.1, 10.3, 11.2, 14.1, 15.3, 15.4, 15.5, 16.2, 17.1, 17.4, 18.1, 19.3, 20.1, 21.1, 22.1, 23.3, 24.1, 26.1, 27.1, 27.2, 28.1, 29.1, 31.2, 32.2, 33.1, 34.1, 35.2, 36.1, 37.1, 37.3, 38.1, 39.1, 39.2, 40.2, 41.1, 42.2, 42.3, 43.1, 43.3, 44.1, 46.1, 46.2, 47.1, 47.2, 48.2, 49.3, 49.4, 50.2, 51.1, 52.1, 53.4, 55.2, 56.2, 57.2, 58.1, 59.1, 61.1, 61.3, 62.3, 62.5, 63.1, 64.3, 67.1, 71.1, 71.3, 74.3, 79.1, 80.3, 82.1, 83.1, 83.2, 84.2, 85.1, 86.1, 87.1, 88.1, 89.1, 90.1, 92.2, 93.1, 95.1, 96.1, 98.2, 99.1, 100.1, 101.1, 102.1, 103.1, 104.2, 105.1, 106.1, 107.1, 108.1, 109.1, 111.1, 112.1, 113.1, 114.1, 115.2, 116.2, 117.2, 118.1, 119.1, 121.1, 122.1,

124.2, 125.1, 126.1, 127.1, 128.1, 129.1, 130.1, 131.1, 132.1, 134.1, 135.1, 136.1, 138.2, 139.1, 140.1, 141.1, 142.1, 143.1, 144.1, 146.2, 147.1, 147.4, 148.1, 148.4, 149.1, 149.4, 150.1, 151.1, 152.1, 153.4, 154.1, 156.1, 157.1, 158.1, 159.1, 160.1, 162.1, 163.1, 164.1, 166.1, 167.3, 168.1, 168.3, 169.1, 170.1, 171.1, 172.1, 175.1, 176.1, 177.1, 178.1, 179.2, 180.1, 181.2, 183.1, 183.2, 184.1, 185.1, 186.1, 187.1, 188.1, 189.1, 190.2, 191.1, 192.5, 196.6, 197.1, 204.1, 205.1, 205.3, 206.1, 207.1, 209.1, 210.1, 198.1, 200.1, 213.1)

- 3.13.2** The Mine is important for the economic health of industries and vendors that support the TCMC and its employees. (53.1, 58.1, 61.1, 62.2, 132.3, 135.1, 146.1, 146.3, 147.2, 148.2, 149.2, 153.2, 191.2)
- 3.13.3** Economic impacts of the Mine not only affect central Idaho, but they can be felt in surrounding states and on a national level. (173.1, 178.2, 190.2, 200.1)
- 3.13.4** [GEOLOGY] Mineral resources can be exploited responsibly in ways that boost the local and national economy. (2.3, 205.2)
- 3.13.5** [GEOLOGY] The sale of molybdenum to foreign corporations would help increase the financial security of the U.S. (71.2, 200.2)
- 3.13.6** TCMC and its employees donate time and money to local communities and are important in making these communities places where current and future generations can live and work. (133.1, 140.2, 144.1, 147.3, 148.3, 149.3, 150.2, 155.1, 167.1, 196.5, 200.3, 206.2, 210.2, 213.2)
- 3.13.7** Prohibiting expansion of the Mine would create economic hardship for local communities and have negative social impacts on local communities. (14.1, 16.3, 83.4, 132.2, 134.2, 137.3, 147.6, 148.6, 149.6, 150.4, 151.2, 159.2, 161.1, 165.1, 181.3)
- 3.13.8** The No Action Alternative would have negative economic impacts to local economies in central Idaho and would have no environmental benefits. (52.4, 53.2, 61.6, 129.3, 137.1, 144.3, 183.3, 200.4, 54.1)
- 3.13.9** The MMPO would have direct and indirect social and economic effects but would have only limited environmental effects. (18.2)
- 3.13.10** Timely completion of the EIS is crucial to avoid any interruption in mining operations and associated impacts to the economic health of the TCMC and local economies in central Idaho. (15.2, 15.6, 19.1, 52.5, 53.3, 53.5, 55.5, 56.5, 61.7, 62.6, 67.6, 74.4, 120.1, 137.4, 144.4, 154.3, 188.3, 18.4, 200.6, 54.3)
- 3.13.11** The EIS should analyze the direct and indirect social and economical effects of the project. (61.4)
- 3.13.12** The EIS should discuss what percentage of Custer County's income is directly and indirectly attributable to TCMC and what the county will do to adjust if expansion is not approved. (193.7, 193.8)
- 3.13.13** The land exchange would add the selected land to the tax base of Custer County, which would have positive economic impacts. (192.6)

- 3.13.14** The land exchange would have a temporary positive impact on tax revenues in Custer County, as the selected land would become privately owned. However, once mining ceases, the selected land would contribute little to the local economy and the overall effect of the land exchange would be negative. (7.2, 7.4, 199.2)
- 3.13.15** The majority of Custer County is public land, and the Broken Wing Ranch should remain in private ownership. Converting the Broken Wing Ranch from private to public land would remove valuable agricultural land from the county and from county tax rolls. (4.1, 7.1, 7.5, 9.4, 11.3)
- 3.13.16** Custer County is 97 percent public land and 3 percent private land; additional public land should be made available for private industry to compensate for lost tax revenue as a result of the land exchange, or the land exchange should be for private land outside Custer County and not for agricultural property currently in production. (199.2, 199.3)
- 3.13.17** Analysis of the land exchange proposal should include analysis of the lost and gained value from the land exchange on ad-valorem property taxes. (194.13)
- 3.13.18** Federal ownership of the Broken Wing Ranch would create greater burdens on law enforcement and other local services than under private ownership. (7.3)
- 3.13.19** The costs to manage the Broken Wing Ranch would be greater under Federal ownership than private ownership as more workers would be required, there would be more administrative overhead, and more equipment and fuel costs. (7.6)

3.14 Cultural Resources

- 3.14.1** It is not necessary to destroy historic structures (e.g., old homestead buildings) on Parcels D, E, and F of the Broken Wing Ranch. (66.2)
- 3.14.2** The BLM should initiate the section 106 process for the project. (202.1)

3.15 Financial Assurance

- 3.15.1** The EIS should explain how often reclamation costs are updated and whether BLM or IDL is in charge of reclamation. (193.5, 193.6)

3.16 Transportation and Access

- 3.16.1** The EIS should consider alternative land exchange configurations that would meet the purpose and need, including moving the western boundary of the selected land at least 500 yards east of Thompson Creek. This alternative would protect current public and State and Federal agency access to the upper portion of the Thompson Creek watershed. (194.4, 194.6)
- 3.16.2** The road accessing the Lyon Creek property from the south is in poor condition and should be closed or converted to a non-motorized, single-track trail with an alternate access route developed to access the property. The current access road that parallels the river crosses several high-gradient streambeds which regularly wash out the road. Continued use of this road contributes to sedimentation in the Salmon River. (77.19)

3.16.3 To reduce the impact on roads, efforts should be made to provide carpooling or other mass transportation for TCMC employees traveling to and from work. (123.1)

3.17 Comments Outside Project Scope

3.17.1 There should be a clear statement of the role of the commercial consulting firm in preparation of the EIS. There should also be clear disclosure of who pays the commercial consulting firm. (75.6)

3.17.2 The delay in publication of the NOI gives a poor reputation to the NEPA process and should be explained. The NEPA process should be streamlined as it is a large investment for private companies, agencies, and the public. (193.1, 193.2)

3.17.3 Are better, more simplified descriptions and maps of the land exchange alternatives available? (193.11)

3.17.4 Respondent does not support the Central Idaho Economic Development and Recreation Act (CIEDRA) or HR980 closing down mines and taking away public grazing lands for wilderness. (10.2)

3.17.5 What is the target date for issuing the Draft EIS? (193.3)

3.17.6 The land exchange process is unduly complicated and prohibitive for future projects. (199.4)

3.17.7 Inclusion of the Broken Wing Ranch in the land exchange needs to be by choice of TCMC and not due to pressure by BLM. (64.2)

3.17.8 Individuals from outside the area should not be allowed to dictate the social and economic effects that would result from not approving the MMPO. (18.5, 198.4, 199.5)

4.0 Issues

Based upon internal agency scoping, public scoping, and consultation with Native American tribes, the agencies have identified issues associated with the MMPO and the land exchange proposal. These issues address components of both the human and natural environment. They evolved from the scoping input and are generally stated concerns (which may incorporate multiple scoping comments) over how environmental resources may be affected. The issues help to make reasoned choices between the alternatives and to address significant impacts. The following subsections discuss each of the identified issues.

4.1 Atmospheric Resources and Noise

The project emissions may cause air quality effects that are different from existing operations due to relocation of mining emissions and from increased traffic on haul roads and possibly off-site access roads.

The Mine may impact or be impacted by climate change, including greenhouse gas emissions.

Noise from Mine operations including traffic on haul roads and traffic on access roads, may increase with an expanded mining operation.

4.2 Visual and Aesthetic Resources

The Mine may adversely affect visual resources in the area, both during and following production.

The land exchange may cause a change in the visual aesthetics of the offered lands.

4.3 Geology, Minerals, and Paleontology

Mineral extraction represents an irretrievable loss of the mineral resource.

The EIS should assess short- and long-term stability of the expanded tailings dam, expanded waste rock facilities, and open pit, under both static and seismic conditions, including all reasonably foreseeable seismic conditions.

If sold or exchanged, the selected land would no longer be available for saleable, locatable, or leasable minerals entry under Federal laws and regulations.

4.4 Soils

The mining operations and related transportation activities may affect soil resources in the project area through disturbance or contamination. This may affect post-mining soil productivity.

4.5 Vegetation, Forest Resources, and Invasive and Non-Native Species

The mining operations and related transportation activities would remove native vegetation and may affect vegetation patterns and productivity in the project area, including TEPCS plant species habitat.

Mine expansion would remove timber and decrease carbon sequestration in the project area.

Land leaving Federal ownership may contain TEPCS plant species habitat.

4.6 Range Resources

Mine expansion would occur on lands currently permitted for livestock grazing.

The BLM would no longer make the Thompson Creek allotment available to grazing.

Disposal of selected land may impact permitted livestock grazing within and adjacent to the project area.

4.7 Wildlife Resources

The mining operations may physically affect terrestrial wildlife, including TEPCS and Management Indicator Species (MIS), through direct disturbance and fragmentation of their habitat.

The filling of the pit with water following Mine closure may impact birds and other wildlife if the pit lake water does not meet applicable water quality standards for wildlife habitat. The pit lake may also entrap some wildlife seeking access to the water.

Disposal of selected land may result in known or suitable TEPCS or MIS habitat leaving Federal ownership and management.

Transfer of the selected land to private ownership may create a refuge from hunting for wildlife, with wildlife concentrating in these areas, particularly during hunting season. Such refuge may negatively impact vegetation and lead to increased mortality (wildlife and humans) due to motor vehicle collisions.

4.8 Water Resources

The Mine may cause changes to the quantity and quality of surface water or ground water in the project area, i.e., within the Thompson Creek and Squaw Creek watersheds and in the Salmon River. These changes may continue in perpetuity.

TCMC may need additional or modified water quality permits due to the Mine expansion.

Mine expansion may affect current water rights.

If the U.S. acquires the Broken Wing Ranch, there could be changes in the water rights associated with the ranch.

4.9 Wetlands, Riparian Areas, and Floodplains

The Mine would cause tailings, overburden fills, and other surface disturbances that would directly affect waters of the U.S. including wetlands. The effects could include changes in water quality (e.g., increased metal and sediment loading) and quantity in both surface water and ground water, some of which supports wetlands.

Wetland plants may absorb and concentrate contaminants once the tailings impoundment is re-vegetated.

The land exchange may result in changes in ownership and management of wetlands and riparian areas providing high value plant and wildlife habitat.

4.10 Fisheries and Aquatics

The Mine may affect native fish, amphibians or aquatic resources in the project area. Native fish species that may be affected includes TEPCS species such as bull trout, Chinook salmon, steelhead, and westslope cutthroat trout.

The land exchange may result in changes in ownership and management of known or suitable habitat for native fish, amphibians or other aquatic resources. Native fish species that may be affected include TEPCS species such as bull trout, Chinook salmon, steelhead and westslope cutthroat trout.

4.11 Recreation and Land Use

Recreational use and public access to the project area may be limited or prevented by mining activities and could impact adjacent private lands.

Mine expansion may affect IRAs or areas with BLM wilderness characteristics.

Recreational use and public access may change on lands proposed for disposal and acquisition through the land exchange.

Lands involved in an exchange may be used for purposes that are different from purposes in the past.

The land exchange may create user conflict with private landowners adjacent to lands proposed for disposal and acquisition and could devalue these lands.

The land exchange would affect agricultural production on the offered lands and increase administrative costs.

The land exchange would result in a net loss of BLM-administered land.

4.12 Socio-economic Factors

Decreased production or closure of the Mine would have adverse effects on local, state, and national economies.

Decreased job opportunities and economic stability from decreased production or Mine closure would adversely affect social conditions in local communities.

The Mine production affects the supply and price of molybdenum on the world market.

The Mine production affects the reliance of the U.S. on foreign sources of molybdenum.

The land exchange would change property tax revenues for Custer County and have economic effects on local communities.

The land exchange would affect BLM revenues from the selected land.

4.13 Tribal Treaty Rights and Interests

The Mine and land exchange may impact the ability of tribal members to exercise their treaty rights in the project area and may impact resources of cultural significance to tribal members.

The Mine and land exchange would affect the locations available to exercise treaty rights.

Health risks may increase due to consumption of water, fish and wildlife.

4.14 Cultural Resources

Cultural resource sites may be impacted in the project area.

The heritage values (resources) of the project area may be compromised by the Mine expansion or land disposal alternatives.

4.15 Financial Assurance

The current reclamation bond may not be adequate to cover the MMPO as proposed.

The regulatory environment would change as a result of the land disposal alternatives, i.e., the Idaho Administrative Code Rules 20.03.02 would govern the portion of the Mine not governed by the BLM surface management regulations at 43 CFR 3809. There could be a different frequency of agency inspections, different financial guarantee requirements for long-term water treatment related to the MMPO, different amounts of fines for regulatory violations, etc.

4.16 Transportation and Access

There is the potential for spills of molybdenum concentrate during shipment due to traffic accidents.

The Mine and land exchange may affect existing access for grazing allotment permittees, recreationalists, and other members of the public.

4.17 Hazardous and Solid Waste

Contamination of water, soil, and air could occur due to petroleum or other chemical spills and on-site disposal of solid waste.

5.0 Alternatives

As described in **Section 1.5.2**, the agencies identified a set of potential alternatives to both the MMPO and land exchange proposal submitted by TCMC. The alternatives identified are summarized in this section. Mine expansion alternatives (including the MMPO submitted by TCMC) are discussed in **Section 5.1**, followed by the set of land disposal alternatives (including TCMC's land exchange proposal) in **Section 5.2**. The alternatives identified are then evaluated in **Section 8.0** using various criteria (**Section 7.0**) taken from Council on Environmental Quality (CEQ) and agency requirements (**Section 6.0**). The alternatives selected for analysis in the EIS following the screening process are listed in **Section 9.0**, with the alternatives eliminated from consideration in the EIS listed in **Section 10.0**.

5.1 Mine Expansion Alternatives

5.1.1 TCMC-Developed Alternatives

In December 2008 and January 2009, TCMC submitted an MMPO to the BLM, Forest Service, and other cooperating agencies. A revised MMPO was submitted in October 2009. The December 2008 MMPO described the need for expanding the open pit and increasing waste rock and tailings disposal capacity. Five areas were identified as possible waste rock storage locations: Basin Creek, Upper Buckskin, Lower Buckskin, No Name Creek, and Upper Pat

Hughes. Other than increasing the height of the existing storage facilities (e.g., Upper Buckskin and Pat Hughes), many of these proposed facilities were eliminated from the revised MMPO submitted in October 2009 for reasons described later in this document (**Section 8.0**). The history of the development of each alternative is documented respectively, where applicable.

MMPO

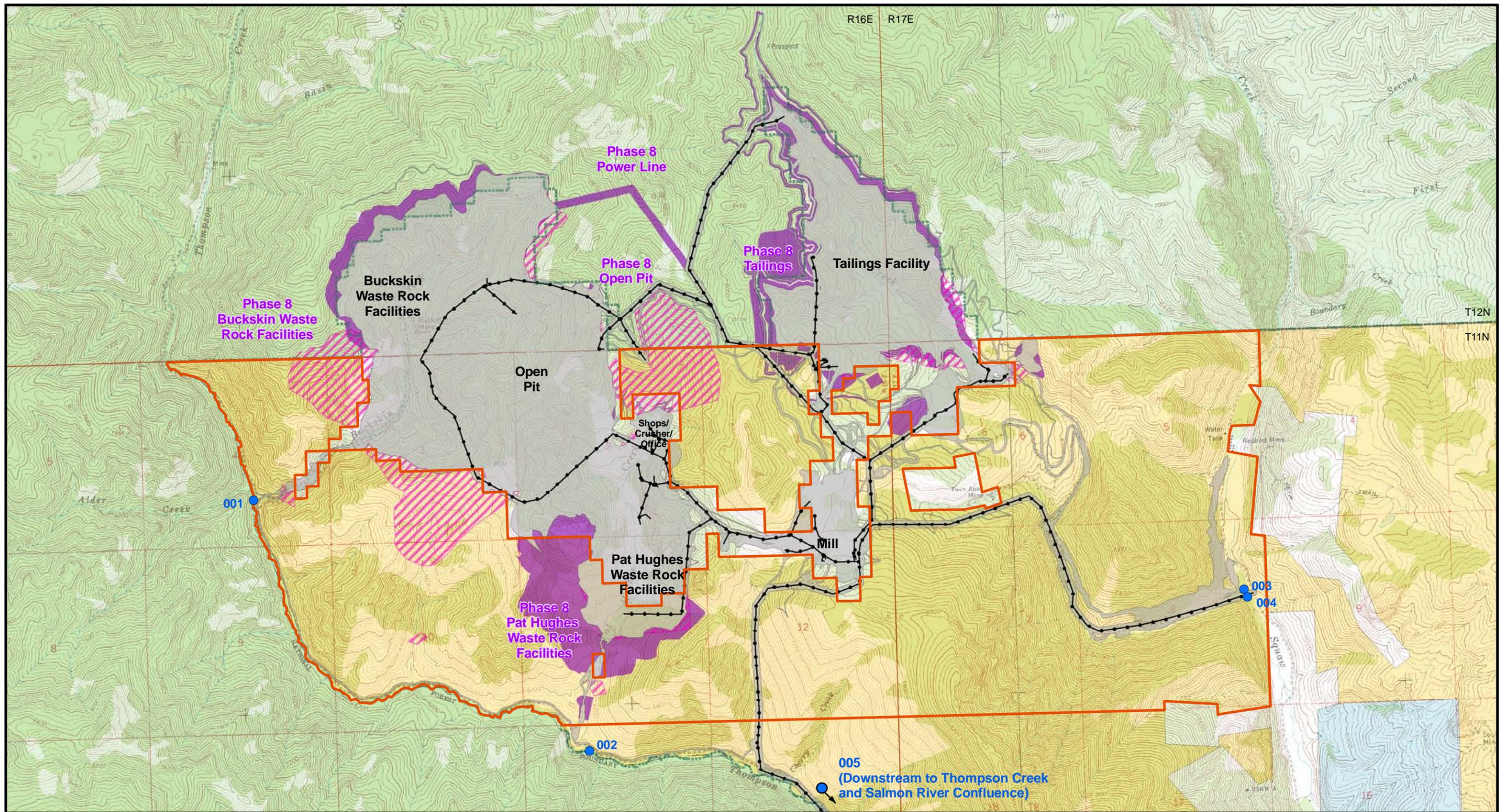
The revised MMPO describes new surface disturbance associated with Phase 8 mining including expansion of the open pit, waste rock facilities, and tailings impoundment (**Figure 5.1-1**). The proposed disturbance would be on approximately 77 acres of private and 344 acres of Federal lands. The disturbance would be in addition to the area already disturbed (2,715 acres). Phase 8 expansion of the open pit would be entirely on patented mining claims owned by TCMC. However, due to pit expansion, an existing 25 kV power line on Forest Service-administered land would be relocated to the ridge between Bruno Creek and the head of Pat Hughes Creek. Phase 8 waste rock disposal would be accomplished through expansion of the existing Upper Buckskin and Pat Hughes waste rock facilities. The existing tailing impoundment would also be expanded by realigning the left abutment of the embankment centerline to the southwest and by raising the elevation of the embankment to 7,760 feet AMSL. The MMPO also describes proposed modifications to the existing long-term water management plan, all of which would utilize the existing NPDES permit.

Basin Creek Waste Rock Facility

The Basin Creek area was considered for waste rock storage in the December 2008 MMPO, but the facility was not included in the October 2009 revision of the MMPO. The Basin Creek facility would disturb approximately 327 acres of Forest Service-administered land and would hold approximately 240,000,000 tons of waste rock (**Figure 5.1-2**). Use of this facility would require a long uphill haul and cause mining disturbance in a currently unaffected watershed.

Lower Buckskin Waste Rock Facility

The Lower Buckskin drainage area (**Figure 5.1-3**) was considered for waste rock storage in the December 2008 MMPO and in the revised MMPO submitted in October 2009. The Lower Buckskin facility would hold approximately 180,000,000 tons of waste rock, potentially reducing the final height of the Upper Buckskin and Pat Hughes waste rock facilities for Phase 8. Initial stability analysis of this alternative indicated that buttressing the lower portion of the overall slope would be required, necessitating hauling to this lower elevation. In addition, it would be possible to store all of the required waste rock in the proposed Upper Buckskin facility without increasing the area of the proposed Upper Buckskin facility. TCMC withdrew this proposed waste rock facility in a July 27, 2010, amendment to its MMPO.



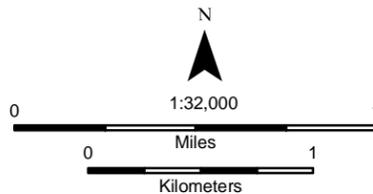
Legend

Selected Lands	Bureau of Land Management (BLM)
Existing Mining Disturbance	Private
Undisturbed Existing Permitted Mining Area	State
Phase 8 Expansion Areas	United State Forest Service (USFS)
Existing Power Line	
NPDES Outfall	

NPDES - National Pollution Discharge Elimination System

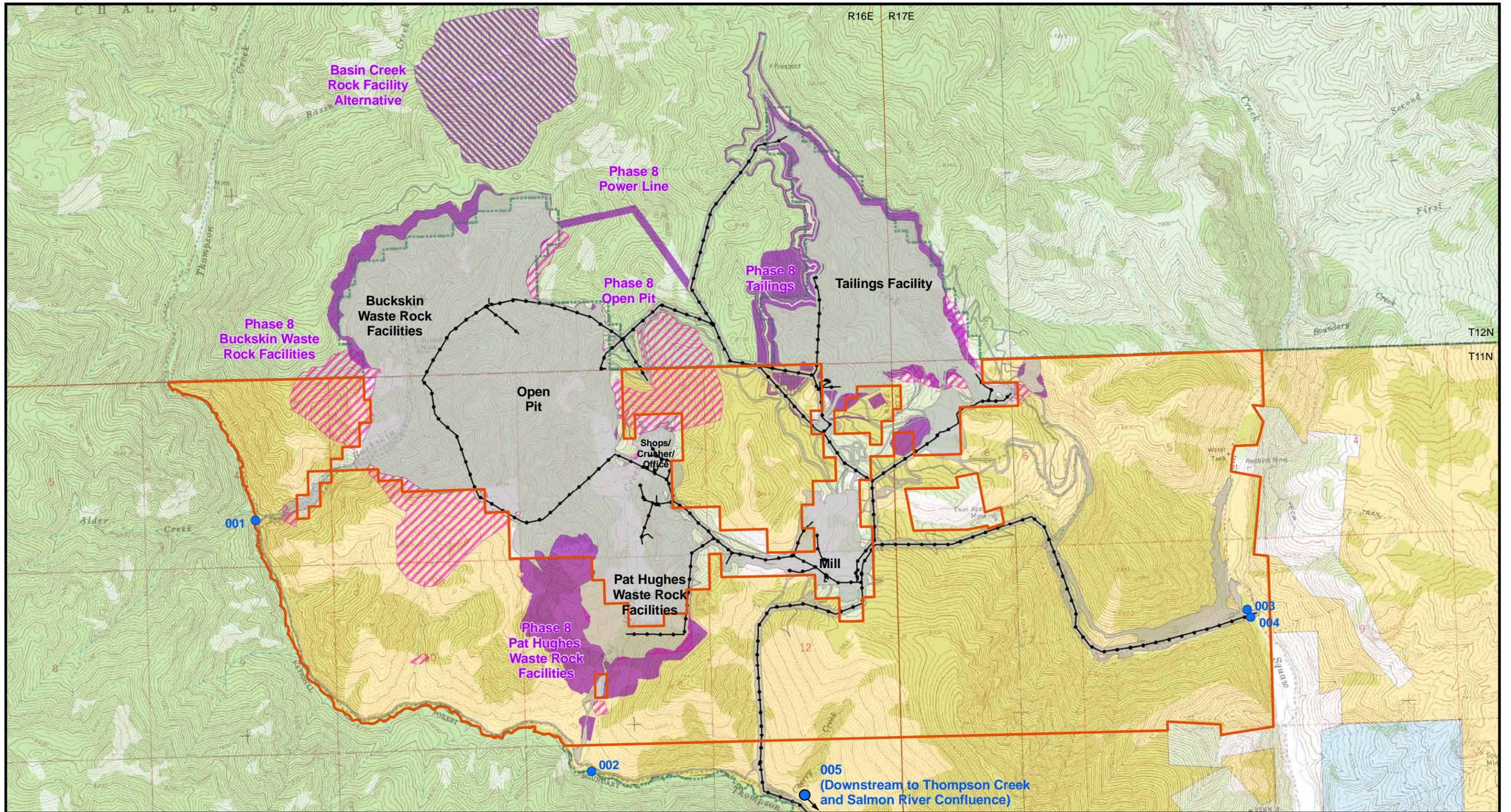
Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,000 scale. Coordinate system UTM Zone 11 NAD 83

Map created October 28, 2010
By C. Pixton



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 5.1-1
MMPO Proposed Phase 8 Expansion and Selected Land
Thompson Creek Mine Expansion EIS



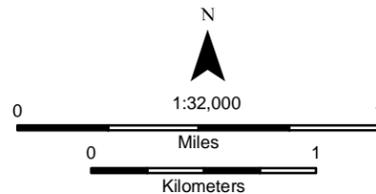
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|---|---------------------|------------------------------------|
| Selected Lands | Existing Power Line | Land Ownership |
| Existing Mining Disturbance | NPDES Outfall | Bureau of Land Management (BLM) |
| Undisturbed Existing Permitted Mining Area | | Private |
| Phase 8 Expansion Areas | | State |
| Basin Creek Waste Dump Facility Alternative | | United State Forest Service (USFS) |

NPDES - National Pollution Discharge Elimination System

Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,000 scale. Coordinate system UTM Zone 11 NAD 83

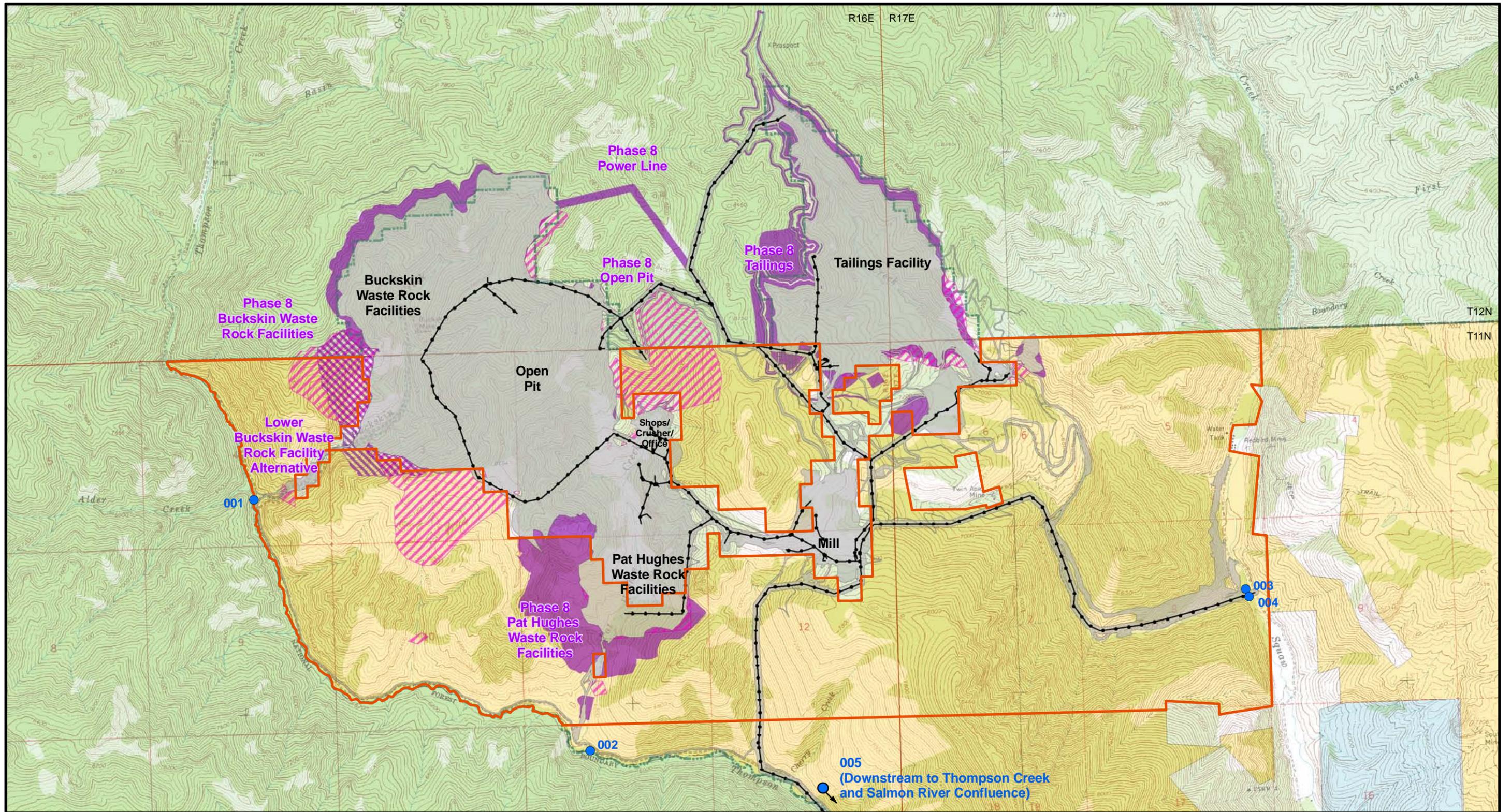
Map created October 28, 2010
By C. Pixton



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Figure 5.1-2
Basin Creek Waste Rock Facility
Thompson Creek Mine Expansion EIS

drawings\Thompson Creek Mine EIS\Figures\Alternative Analysis Report\5.1-3 Lower Buckskin Waste Rock Facility.mxd



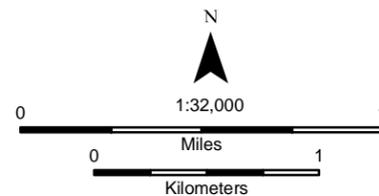
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|--|---------------------|------------------------------------|
| Selected Lands | Existing Power Line | Land Ownership |
| Existing Mining Disturbance | NPDES Outfall | Bureau of Land Management (BLM) |
| Undisturbed Existing Permitted Mining Area | | Private |
| Phase 8 Expansion Areas | | State |
| Lower Buckskin Waste Facility | | United State Forest Service (USFS) |

NPDES - National Pollution Discharge Elimination System

Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,000 scale. Coordinate system UTM Zone 11 NAD 83

Map created October 28, 2010
By C. Pixton



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Figure 5.1-3
Lower Buckskin Waste Rock Facility
Thompson Creek Mine Expansion EIS

No Name Waste Rock Facility

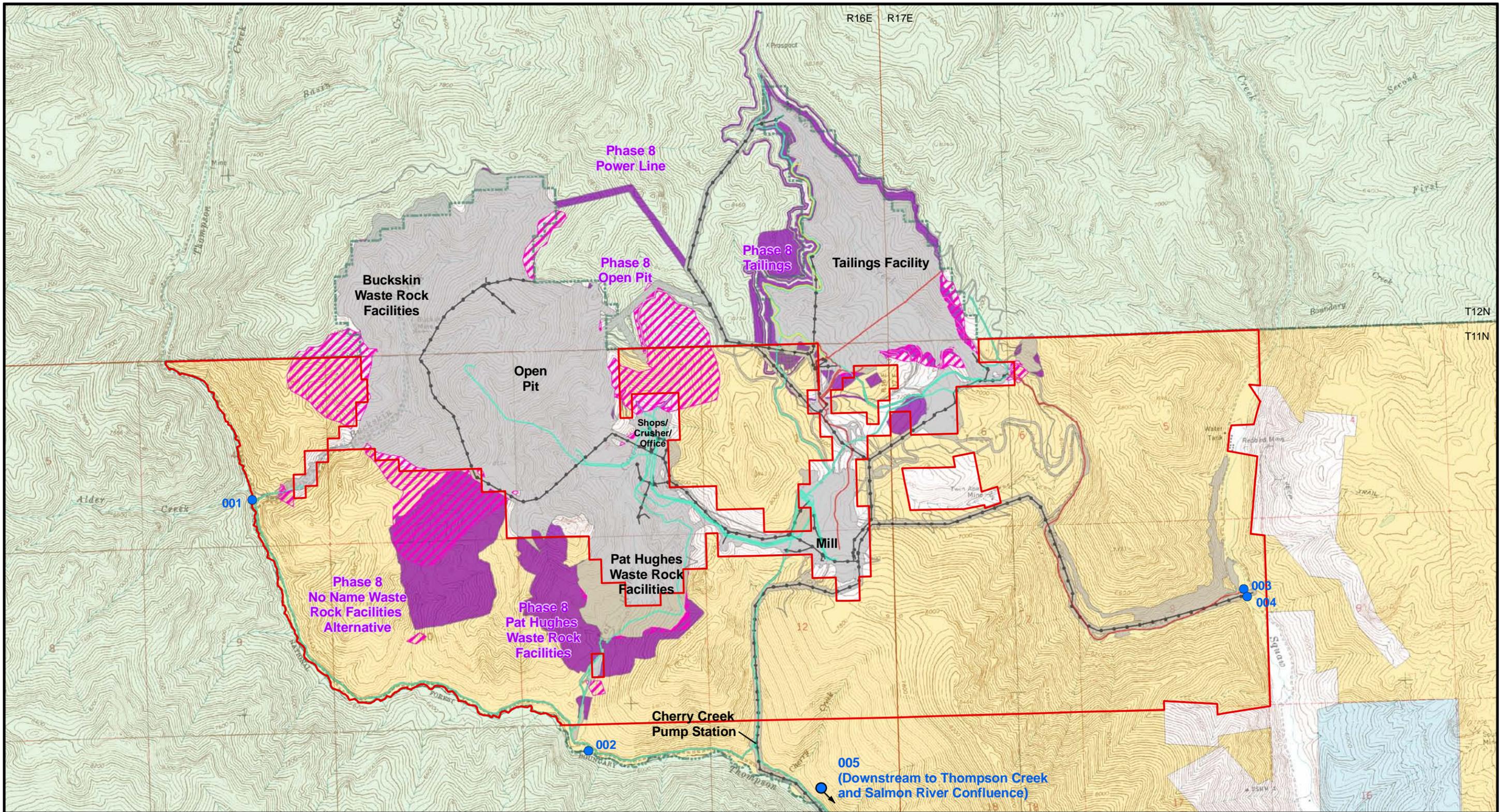
Construction of a waste rock facility in the No Name drainage was considered in the December 2008 MMPO, but the facility was not included in the October 2009 revision of the MMPO. The facility would contain approximately 115,000,000 tons of waste rock on 345 acres of undisturbed BLM-administered land. The location is economically favorable due to its proximity to the open pit and a level haul (**Figure 5.1-4**). Under this alternative, less waste rock would be placed in the Upper Buckskin and possibly the Pat Hughes waste rock facilities during Phase 8. A waste rock facility in the No Name drainage will also be analyzed to some extent under the No Action Alternative (**Section 5.1.3**). However, the No Name waste rock facility analyzed under the No Action Alternative would have a different configuration than the waste rock facility considered under this alternative (e.g., the No Name waste rock facility under this alternative would be located in some portions of the drainage that are outside the currently permitted areas that could be used under the No Action Alternative) and may not contain the same volume of waste rock.

Upper Pat Hughes Waste Rock Facility

Construction of a waste rock facility in the Upper Pat Hughes drainage was considered in the December 2008 MMPO, but the facility was not included in the October 2009 revision of the MMPO. The facility would contain approximately 50,000,000 tons of waste rock on approximately 75 acres of BLM-administered land and 50 acres of Forest Service-administered land, which would reduce the height and potential lateral expansion of the existing waste rock storage areas. The Upper Pat Hughes area is a possible location because a short haul would make it possible to dump material from the upper portion of the pit northeast highwall. The location for this facility would be the same as shown for the No Action Alternative in **Figure 5.1-5**. Hence, this alternative will not be considered for full evaluation as part of Phase 8 but will instead be considered as part of the No Action Alternative (**Section 5.1.3**).

Full Realignment of the Tailings Dam with an Upstream Raise

The design report for the Phase 8 tailings expansion described two potential alternatives to the tailings impoundment as proposed in the MMPO, a full realignment of the tailings dam with and upstream rise, and a new tailings starter dam downstream of the Existing Dam. Under this alternative, a new dam would be constructed on top of the existing tailings upstream of the current dam (upstream construction). The required ultimate dam crest elevation using this alternative would be approximately 7,772 feet AMSL, based on preliminary volume storage estimates. However, Idaho regulations (IDAPA 37.03.05.045.01.b) prohibit upstream construction of tailings dams unless the embankment and tailings density can be shown to be 60 percent or greater during earthquake loading. Compliance with this rule would be difficult under this alternative and the design team recommended against it.



Legend

Selected Lands	Existing Power Line	Land Ownership
Existing Mining Disturbance	Pyrite Pipeline	Bureau of Land Management (BLM)
Undisturbed Existing Permitted Mining Area	Tailings Pipeline	Private
Phase 8 No Name Alternative Expansion Areas	Water Pipeline	State
NPDES Outfall		United States Forest Service (USFS)

(NPDES - National Pollution Discharge Elimination System)

Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner.
 Alternative data from Thompson Creek Mine drawing files and converted to shapefiles.
 Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
 Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
 Coordinate system UTM Zone 11 NAD 83

Map created March 31, 2011
 By C. Pixton

No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

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New Tailings Starter Dam Downstream of the Existing Dam

This alternative was included in the design report for the tailings expansion. It considers creating a new centerline raise dam downstream of the current tailings dam near the current location of the seepage return dam (SRD). As the topography of the Bruno Creek valley behind this dam does not allow for all the Phase 8 tailings to be stored behind it, the remaining Phase 8 tailings would be stored in a manner similar to what is proposed in the MMPO. This alternative would require the existing dam with the partial crest realignment to be raised to approximately 7,726 feet AMSL, while the new centerline raise dam would have a maximum elevation of approximately 7,174 feet AMSL. Under this alternative, the current seepage return facility would be buried under tailings and would be re-constructed downstream of the new dam. The existing drainage facilities for the dam would be modified and integrated into the new tailings storage facility. There would be additional disturbance to the Bruno Creek valley downstream of the current tailings storage facility due to the inundation of this part of the valley with tailings deposited between the new dam and the existing one. Additionally, as this alternative would also require raising the existing dam to within 18 feet of the crest elevation of the proposed elevation of the existing facility, much of the proposed additional disturbance around the existing tailings facility would still occur. The design team recommended against this alternative.

5.1.2 Alternatives Suggested During Public Scoping

A 30-day public scoping period began on August 3, 2010, with publication of the NOI. Public scoping included a BLM website with project information, legal notices and press releases in various media outlets, a scoping letter and project information mailed to 617 potentially interested parties, and two public scoping meetings in Challis and Boise. Several of the comments received to date pertain to potential alternatives and were considered as part of the project (**Appendix H**). The following comments pertaining to mine expansion were selected for more detailed consideration.

Increase Water Conservation in Mine Operations

This alternative would consider other methods to substantially reduce water consumption from Mine operations. Approximately 98 percent of the water used at the Mine is in the milling process, and the main consumptive use of this water is loss of water in the tailings impoundment through evaporation, seepage, and incorporation in the tailings solids. The current operations recycle all the water realistically possible from the tailings pond, open pit, and waste rock facilities back to the mill. Additional water (makeup) is pumped from the Salmon River to make up any shortfalls in required process water. Currently, the average water use in the mill is 8,150 gpm and the average makeup water consumption is 1,150 gpm, about 14 percent of the total. The only practicable approach to substantially reducing makeup water would be to reduce water losses in the tailings pond. This would require a major revision of the current tailings thickening, cycloning, and slimes-handling systems, which would add substantial capital costs and additional energy consumption for pumping and costly revision of the current piping systems to handle the tailings sand and slimes.

Backfilling the Open Pit at Closure

This alternative would consider re-locating waste material from the tailings impoundment and/or waste rock facilities to the open pit after mining to reduce the height and/or area of these facilities and to fully backfill the open pit. The BLM requires a mining operator to provide

information on the feasibility of pit backfilling which details economic, environmental, and safety factors (43 CFR 3809). In this case, a backfill feasibility study by TCMC demonstrates that it would not be economically feasible (e.g., \$50 million to \$70 million at the end of Phase 7 and thus ~\$100 million at the end of Phase 8) to backfill the pit after mining. Geotechnical studies of the proposed final configurations of the waste rock facilities demonstrate that the facilities would be stable. Partial backfill of the open pit would involve less relocation of waste material at less cost. However, there would be no environmental benefits at the waste disposal facilities (slope stability, visual impacts, soil degradation, etc.) because the temporary storage of the waste materials prior to re-location would produce the same disturbance (and impacts) of resources as the MMPO.

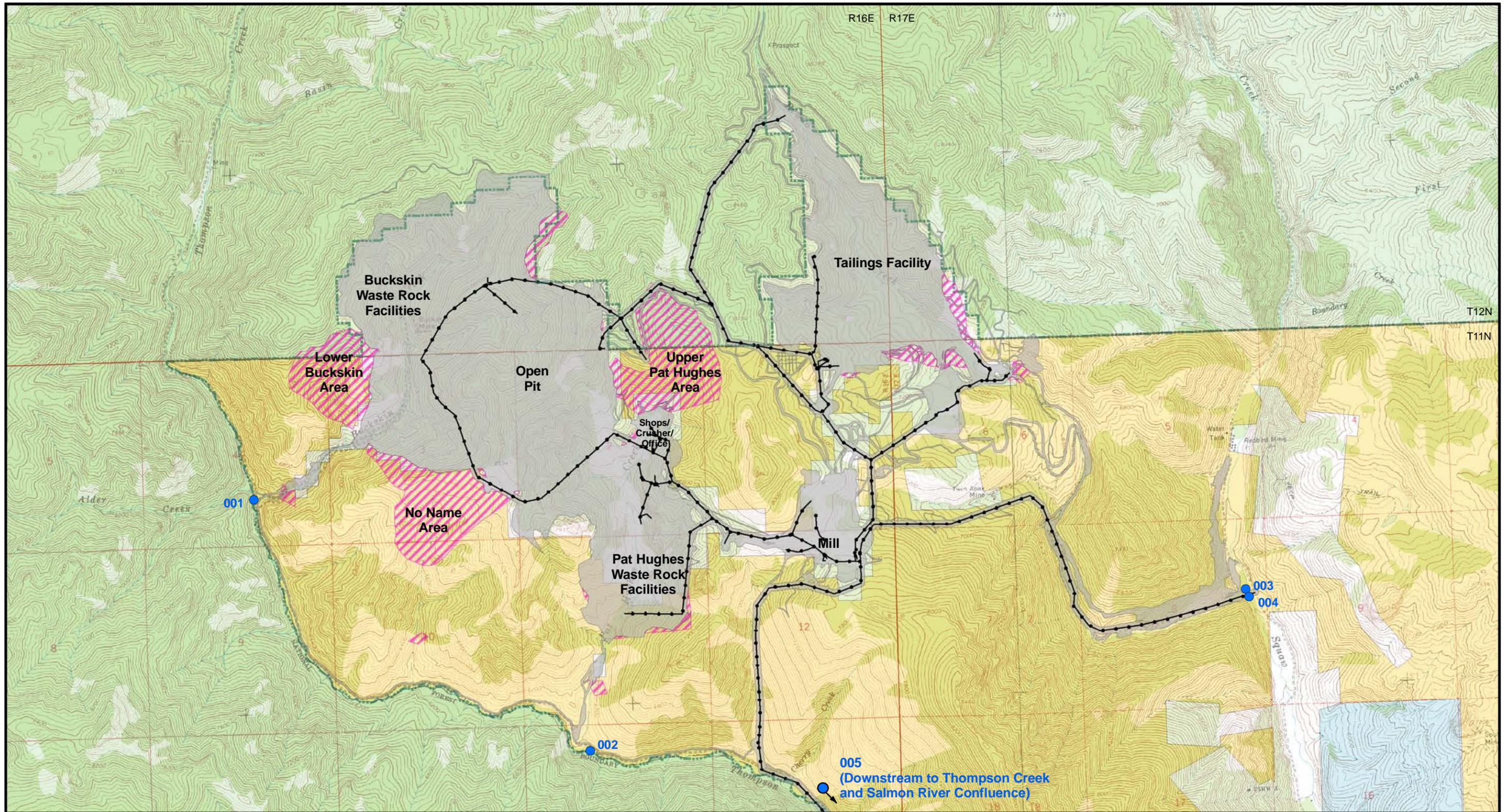
5.1.3 Alternatives Developed by the EIS Preparers

Potential alternatives to the MMPO submitted by TCMC were initially discussed by the Interdisciplinary Team in an internal scoping meeting on November 24, 2009, and in subsequent conference calls between agency project contacts on February 16, March 2, and March 16, 2010. Alternatives were refined further in an Interdisciplinary Team meeting on December 13, 2010.

No Action Alternative

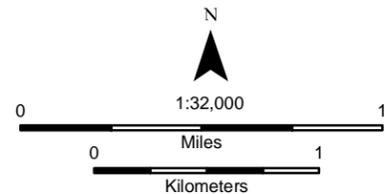
Under this alternative, the MMPO Phase 8 expansion plans and section 404 permit application under the CWA would not be approved by the Federal agencies. The current mining (and tailings) operations would continue through the completion of the currently permitted (i.e., Phase 7) description and boundaries (**Figure 5.1-5**). However, under the 1980 EIS and Records of Decision, there are additional areas approved for disturbance by mining activities that TCMC has not utilized and does not intend to utilize for Phase 7 or Phase 8. These areas are shown on **Figure 5.1-5** with red hatching and include portions of the Upper Pat Hughes drainage, the lower Buckskin drainage, and the No Name drainage. These areas are available because TCMC mined more ore and less waste rock than originally planned. Under the No Action Alternative, TCMC would utilize these areas, primarily for waste rock storage. Currently, there are no plans or designs for facilities in these areas. To utilize these areas, TCMC would probably need to submit a Modified Plan of Operations with designs for mining facilities that would fit within these approved disturbance footprints, and amend the reclamation plan and financial guarantee for these new facilities (which the agencies would probably process administratively, i.e., without additional NEPA analysis). Note that for the BLM and Forest Service, the No Action Alternative will be fully evaluated only to provide the reference (baseline) condition, as these agencies may not select the No Action Alternative for mining operations conducted pursuant to the General Mining Laws of the U.S. in lands open to mineral entry (43 CFR 3809.411 and 36 CFR 228.5).

drawings\Thompson Creek Mine EIS\Figures\Alternative Analysis Report\5.1-5 No Action Alternative.mxd



Legend

- | | |
|--|-------------------------------------|
| Selected Lands | Bureau of Land Management (BLM) |
| Existing Mining Disturbance | Private |
| Undisturbed Existing Permitted Mining Area | State |
| Existing Power Line | United States Forest Service (USFS) |
| NPDES Outfall | |
- NPDES - National Pollution Discharge Elimination System



Selected land, existing mining disturbance from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,000 scale. Coordinate system UTM Zone 11 NAD 83

Map created October 28, 2010
 By C. Pixton



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 5.1-5
No Action Alternative
Thompson Creek Mine Expansion EIS

Modified Mine Facilities and Closure/Reclamation Plans Alternative

The agencies are considering fully evaluating an alternative reclamation plan to that submitted by TCMC in the MMPO. Once the environmental effects of the operations are better known, including the mitigative effects of the currently proposed closure and reclamation plans, the agencies will decide whether some modifications to any of the MMPO reclamation methods or designs would be evaluated in the EIS.

Locating Mining and Milling Facilities Elsewhere

There is no technologically feasible alternative for re-locating the open pit because mining must occur at the orebody, and the mill facilities must be as near the orebody as possible for economic reasons. Furthermore, it would be cost prohibitive (hundreds of millions of dollars) to re-locate these facilities. In addition, the existing waste rock, tailings disposal, and milling facilities were sited and constructed in their current locations after the 1980 EIS for the Mine evaluated a wide range of alternatives and selected the current locations as the optimum alternative.

Underground Mining

It would not be feasible technologically or economically at this point in the Mine life to mine the Phase 8 orebody underground, store waste rock or tailings underground, or re-locate other support facilities underground. Underground mining is technologically and economically preferable when the orebody in question is too deep or inaccessible for open pit operations, and removal of the overburden in an open pit is too expensive. This is not the case for the Mine operations, in which most of the overburden required to mine the Phase 8 ore will already have been removed by previous mining phases so only the incremental overburden required to expose the Phase 8 ore requires removal. Additionally, underground mining is typically applicable only in cases where the grade of the ore is relatively high, and not for lower grade ore bodies such as the Phase 8 ore at the Mine.

Using February 2011 data from InfoMine USA, Mining Cost Service, the least expensive underground mining technique is block caving. If such technique could be applied to the Thompson Creek ore deposit, the production of 25,000 metric tons per day of ore (equivalent to the current Mine production rate) would require a capital cost of approximately \$100,000,000 for adit entry or \$136,000,000 for shaft entry. The operating cost to underground mine the ore is estimated to range from approximately \$8 to over \$9 per metric ton. The operating cost of a one-product flotation mill processing 25,000 metric tons per day, such as that at the TCM, would be approximately \$7 to \$8 per metric ton. Thus, operating costs for a mill and underground mine at the TCM would be approximately \$15 to \$17 per metric ton. These operating costs do not include the off-site transportation, roasting, and packaging costs that are incurred to produce molybdenum from the mine.

The total cash production cost for 2010 (mining including stripping, milling, mine site administration, transportation, roasting, packaging, etc.) was \$5.20 per pound of molybdenum (Thompson Creek Metals Company, SEC Form 10 K, 2010), or approximately \$11.79 per metric ton of ore.

In short, it would not be economically reasonable at realistic molybdenum prices to convert the mine from surface to underground block caving operations as such would involve a capital cost

of over \$100,000,000 and an operating cost at least 35 percent greater (about \$50,000,000 per year) than that of the current surface mining operations. In addition, the proposed expansion of the open pit would occur within the existing surface disturbance at the Mine and underground mining would not substantially decrease the amount of surface disturbance.

Concurrent Backfilling Open Pit with Waste Rock or Tailings

Concurrently backfilling portions of the open pit with waste rock or tailings would reduce the volume of material placed on the waste rock facilities or tailings impoundment, incrementally reducing their height and their areas, compared with the MMPO configuration. However, the pit walls are uniformly steep and the orebody always occurs on the sides and floor of the pit. Therefore, there is no place in the pit to store waste material during mining operations; in other words, placing waste material in any portion of the pit would prevent the extraction of the underlying orebody. In addition, there would be substantial physical safety hazards from trying to simultaneously mine and backfill in the close confines of the pit floor. Concurrent backfilling is generally feasible only when mining a series of pits sequentially when the waste material from one pit may be placed into another existing pit.

Disposing of Mill Tailings or Mine Overburden through Offsite Utilization

There is potential to ship waste rock and/or tailings sand with the pyrite removed offsite for commercial uses, which potentially could reduce the size of the ultimate tailings embankment and waste rock facilities. However, there is no local market for any meaningful amounts of such material, and the low unit value of the material precludes shipping meaningful amounts of the material to other distant markets. There is no known commercial use of tailings slimes.

Waste Rock Buttress of Tailings Dam

During a project briefing on December 20, 2010, EPA subcontractor Booz Allen Hamilton asked if TCMC had considered using some of the Type 1 waste rock produced during Phase 8 to help buttress the tailings dam. The rock toe dam at the base of the tailings dam would be raised to 6,960 feet above mean sea level (AMSL) during the construction of the Phase 8 tailings dam; however, the downstream slope of the sand dam would still be steepened to 2.75 H:1 V from the current 3 H:1 V. To reduce the sand volume required to raise the dam to the required Phase 8 elevation, TCMC could use Phase 8 Type 1 waste rock to further raise the rock toe dam or some other configuration. However, all of the Type 1 waste rock would be necessary for reclamation of the waste rock facilities and would not be available to buttress the tailings dam, and the amount of sand produced from the tailings would be insufficient to fill in the area behind the buttress. Further, a new road would be necessary to haul waste rock to the base of the tailing dam. In addition, analysis to date indicates the tailings dam would be stable at the end of both Phase 7 and the proposed Phase 8 operations.

5.2 Land Disposal Alternatives

The FLPMA requires that lands being exchanged be of equal (fair market monetary) value. To achieve this, all reasonable efforts must be made to equalize the value by adding or excluding lands and/or by making a cash equalization payment, up to 25 percent of the value of the public lands leaving Federal ownership (43 CFR 2201.6). This requirement ensures that the exchange is fair, despite the inevitable difference in the areas of the offered and selected lands, since not all land is worth the same dollar amount per area. Thus, the boundaries, areas and conditions of the

selected and offered lands in the land disposal alternatives are necessarily approximate, i.e., detailed “templates” of selected and offered lands believed to be of approximately equal value. If the BLM decides to exchange or sell land per one of the land disposal alternatives, relatively minor modifications may occur to the boundaries, areas or conditions depending on administrative items such as appraisals, title examinations, etc. Any exchange or sale would require an appraisal current to within 1 year of title transfer.

5.2.1 TCMC-Developed Alternatives

TCMC Land Exchange Proposal

The land exchange proposal involves exchanging approximately 5,000 acres of Federal land (selected land) for approximately 900 acres of private land (offered land) owned by TCMC. The selected land comprises all BLM-administered land in Sections 1 to 4, 9 to 12, T. 11 N., R. 16 E. and Sections 5 to 8, T. 11 N., R. 17 E., Boise Meridian, and contains the southern portion of the Mine and adjacent area, including various access roads and power line and pipeline corridors (**Figure 5.1-1**). If the land exchange proposal is approved, it may involve adjusting the east boundary of the selected land to the centerline of the Squaw Creek road (**Figure 5.2-1**) to address concerns from private landowners and maintain Federal ownership of most of Squaw Creek. The offered lands consist of the Broken Wing Ranch, 6 miles northeast of Clayton in Custer County, Idaho, and the Garden Creek property, 16 miles south of Pocatello in Bannock County, Idaho (**Figure 5.2-2**). The Garden Creek property contains some of the upper Garden Creek watershed, which drains to Marsh Creek and the Portneuf River. The Broken Wing Ranch borders both sides of sections of the Salmon River. If the BLM were to approve the land exchange, the offered lands would be managed as generally described in the project description on the BLM website.

Within the boundaries of the selected land (under this alternative and all other land disposal alternatives except the No Action) described above, there are concerns about differences in the long-term management of certain resources under private ownership compared to public ownership. These concerns would be addressed by the following provisions, which would be ensured with appropriate language in a legally binding easement that would be recorded and become part of the (perpetual) chain of title for the selected land. In addition, as related mitigation, certain access rights would be granted by recorded easements on private land now controlled by TCMC.

Squaw Creek Road access – Squaw Creek Road would continue to be a public road.

South Butte Road access – TCMC would grant public access along two sections of the South Butte Road, which currently passes through private property controlled by TCMC. This grant would provide meaningful new public access to approximately 7,000 acres of Federal and State lands that are now essentially inaccessible to the public due to rugged topography and the lack of public access on the existing road.

Twin Apex Property access – The BLM would grant the owners of the Twin Apex property access to the property via the Bruno Creek Road.

Thompson Creek Road access – The existing public access along the upper Thompson Creek Road would be retained by the United States. The public would also continue to be able to access the Thompson Creek Road via Forest Service Road 004 (“Slate Creek Bridge Northern Road”).

Management for big game (including provisions for hunting access; public access) – TCMC would allow non-motorized access to the selected land through the IDFG Access Yes Program with the exception of all private land that drains into Bruno Creek, Buckskin Creek, Pat Hughes Creek and Cherry Creek. The restricted areas are for the safety of both the public and TCMC employees. The restricted area would be posted at appropriate access points with maps explaining and delineating the restricted area.

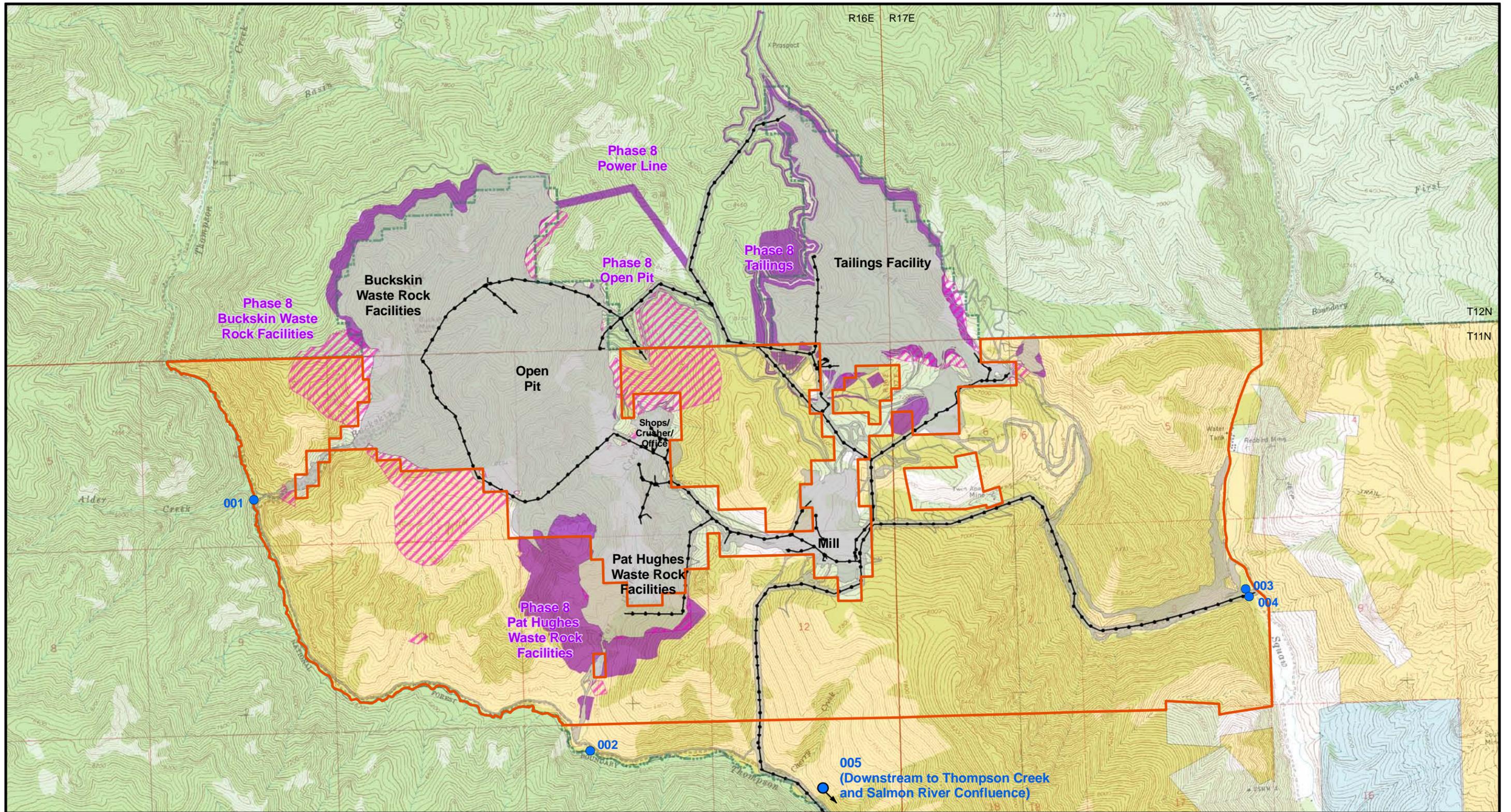
Squaw Creek Grazing Allotment, Saturday Morning Pasture – TCMC would grant administrative access to the BLM and its permittees to use roads on private property controlled by TCMC to reach the Saturday Mountain Pasture. This grant would provide access to these parties to approximately 2,500 acres of Federal and State land (excluding the selected land) that are now essentially inaccessible to these parties due to rugged topography and the lack of legal access on existing roads.

Challis East Subdivision trail easement – Barring public opposition, TCMC would grant public access via a trail within a 20-foot wide easement along one side of the perimeter of property owned by TCMC in the Challis East Subdivision. The details of the trail (e.g., motorized or non-motorized, north perimeter or southern perimeter, hours of use, what vehicles if motorized, etc.) would be evaluated in the EIS.

Limits on development near riparian areas – The Selected Land within ½ mile of Thompson Creek and Squaw Creek would remain undisturbed except for the maintenance of existing roads, structures (e.g., buildings, pipelines, power lines, etc.), and mine operations.

Limited diversion of water from Squaw Creek for fisheries (for fisheries enhancement) – TCMC would be willing to limit irrigation water from Squaw Creek used on private land controlled by TCMC, if agreements could be reached with the owners of downstream diversions that have greater potential to dewater Squaw Creek during low flows. However, obtaining such agreements appears to be outside the scope of the project.

drawings\Thompson Creek Mine EIS\Figures\Alternative Analysis Report\5.2-1 Selected Land - Modified East Boundary Alternative.mxd

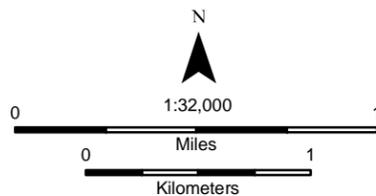


Legend

- | | |
|---|------------------------------------|
| Selected Lands Modified East Boundary Alternative | Bureau of Land Management (BLM) |
| Existing Mining Disturbance | Private |
| Undisturbed Existing Permitted Mining Area | State |
| Phase 8 Expansion Areas | United State Forest Service (USFS) |
| Existing Power Line | |
| NPDES Outfall | |
- NPDES - National Pollution Discharge Elimination System

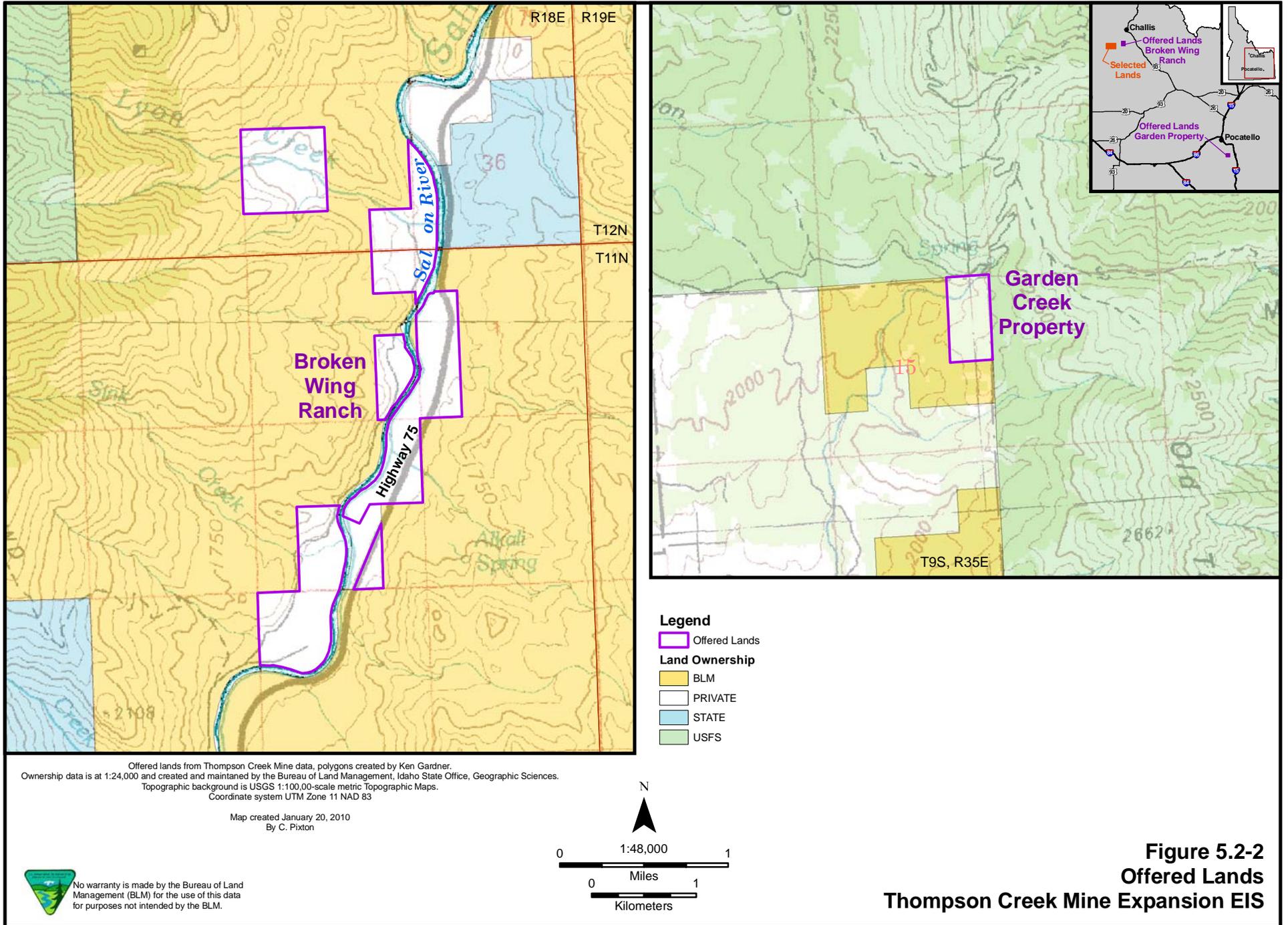
Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,000 scale. Coordinate system UTM Zone 11 NAD 83

Map created February 26, 2010
By C. Pixton



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Figure 5.2-1
Selected Land - Modified East Boundary Alternative
Thompson Creek Mine Expansion EIS



5.2.2 Alternatives Suggested During Public Scoping

As described in **Section 5.1.2**, a 30-day public scoping period began on August 3, 2010. Several of the comments received to date pertain to potential land disposal alternatives and were considered as part of the project (**Appendix H**). The following comments were selected for more detailed consideration.

Land Sale

Under this alternative, the BLM would sell the selected land to TCMC rather than conduct a land exchange. The selected land would be the same as that in the land exchange proposal (**Figure 5.1-1**), and would be sold to TCMC at the appraised fair market value.

The BLM initially did not believe that this alternative should be fully evaluated because (1) the BLM would need to amend the RMP to approve either a land sale or a land exchange (i.e., no savings in administration time or money between the two alternatives) and (2) since only the receipts from the sale or exchange (equalization payments) of lands identified as suitable for disposal in land use plans approved on or before July 25, 2000, can be deposited into the Federal Land Transaction Facilitation Act (FLTFA) account, a FLPMA sale of the subject land would simply bring money to the U.S. Treasury and not provide the general public with the benefits of the Broken Wing Ranch and Garden Creek parcel becoming Federal land.

However, this alternative would address comments from several members of the public, including TCMC. In addition, the Custer County Commissioners are known to desire to increase the county tax base by increasing the net amount of private land in the county. Also, the feasibility analysis for the land exchange proposal still needs the signature of the BLM Director; therefore, this alternative would be consistent with the NOI, which describes a proposed land disposal (land exchange or land sale) action. Moreover, this alternative would be relatively simple to analyze as it is a subset of the land exchange proposal, and fully evaluating this alternative would help provide the broadest range of reasonable land disposal alternatives.

Additional Alternatives for Private Lands

The BLM could develop additional alternatives for the land exchange proposal involving private lands other than those offered by TCMC to provide other options for the U.S. to obtain lands which possess resource qualities considered to be of substantial value to the public. For example, such property could be private in-holdings in the White Clouds, Frank Church River of No Return Wilderness, and Sawtooth National Recreation Area. However, the BLM cannot require a proponent to offer a particular property and will not evaluate a land exchange for which the proponent does not reasonably control the offered lands (which were assembled by the proponent to be approximately equal to the fair market value of the selected land). For these reasons it would be outside the scope of the project to evaluate a land exchange alternative with private lands other than those offered by TCMC.

Return Broken Wing Ranch to Native Vegetation

The EIS could include a land exchange alternative under which the Broken Wing Ranch would be returned to native vegetation with no irrigated agriculture and existing roads would be reclaimed. The proposed management plan includes restoration of more natural conditions to

portions of the ranch. However, restoring the entire ranch to native vegetation in a short time frame would not be technically or economically feasible (e.g., many years of intensive work to alter the soil conditions resulting from 100 years of agriculture) and would result in a high probability of substantial noxious weed infestation that would be environmentally worse than continued, properly managed agricultural use; there are a number of examples in Custer County of failed attempts to convert agricultural land to native vegetation. In addition, there is a distinct desire in the Challis locality to maintain traditional ranching. Furthermore, the existing roads on the ranch would provide reasonable access to the mouth of the Lyon Creek drainage (but only non-motorized travel within the drainage per the proposed management plan).

Move Selected Land Boundary 500 Yards East of Thompson Creek

This alternative was externally proposed to protect fisheries habitat and allow cattle grazing of the riparian habitat along Thompson Creek to continue to be permitted by the BLM. Under this alternative, the boundary of the selected land would be moved 500 yards east and north of the centerline of Thompson Creek, leaving a 500-yard-wide strip of BLM-administered land between private land and the Forest Service boundary along the creek centerline. Such a strip would distinctly conflict with the fundamental land management goal of obtaining/maintaining block ownership for efficient and practicable land management. Similarly, but with a goal to protect the Thompson Creek riparian area, the agencies considered that a strip of land (1/8 mile wide) could be incorporated into the adjacent Salmon-Challis National Forest (i.e., the land would continue to be part of a relatively large block of Federal land but be administered by the Forest Service under Forest Service laws and regulations). However, such alternative is not realistic as it would require an act of Congress to modify the boundary of the Salmon-Challis National Forest. The agencies also considered that the strip of land (1/8 mile wide) could remain Federal land under BLM laws, regulations, the Challis RMP, etc., but the Forest Service would administer such on behalf of the BLM. This alternative would be administratively cumbersome to the point where the alternative does not appear feasible (e.g., perpetual interagency agreements; Forest Service personnel would need to learn BLM laws, regulations, applicable guidance, etc).

5.2.3 Alternatives Developed by the EIS Preparers

As described in **Section 5.1.3**, potential land disposal alternatives were initially discussed by the Interdisciplinary Team in an internal scoping meeting on November 24, 2009, and in subsequent conference calls between agency project contacts on February 16, March 2, and March 16, 2010. Alternatives were refined further in an Interdisciplinary Team meeting on December 13, 2010.

No Action Alternative

The Mine would continue operations on a combination of private and Federal lands. Property rights and access for the Federal lands would continue to be those authorized under the General Mining Laws of the U.S. and, optionally, for some rights of way, the FLPMA.¹

¹ A right of way on Federal land necessary for a mining operation is typically authorized under the General Mining Laws of the U.S. as part of the approval of a plan of operations; however, a mining operator is not precluded from also obtaining authorization for a right of way under the FLPMA, which TCMC has done for some of its support facilities.

Reduced Area Land Exchange – Fee Simple

This alternative would reduce the area of the selected land to approximately 3,600 acres (**Figure 5.2-3**) and would reduce the area of the offered lands as necessary to maintain similar fair market values. More specifically, certain tracts of the Broken Wing Ranch (**Figure 5.2-4**) and/or the Garden Creek parcel would be step-wise eliminated from the land exchange. Note that the step-wise reductions would be made by the decision maker based on the impacts analysis, i.e., the Broken Wing Ranch parcel numbers in **Figure 5.2-4** do not indicate a priority of reduction.

This alternative was identified during scoping by the agencies, public, and Shoshone-Bannock Tribes who questioned the necessity of exchanging 5,000 acres of selected land when the total Mine surface disturbance through Phase 8 on BLM-administered land would be 198 acres. While the surface disturbance is/would be a relatively small area of the selected land, the surface disturbance is/would be scattered throughout much of the selected land, forming a spider web of linear features. The agencies determined that it would not be feasible for the selected land to mirror the boundaries of the MMPO as submitted, as it would result in a block of BLM-administered land being converted into an unmanageable, irregular patchwork of private and BLM-administered land. However, a smaller block of 3,600 acres of selected land was identified as the minimum feasible area for this alternative (e.g., would contain the core mining operations, would leave no isolated areas of BLM-administered land, would have logical administrative boundaries, etc.).

Reduced Area Land Exchange – Conservation Easement Strategy

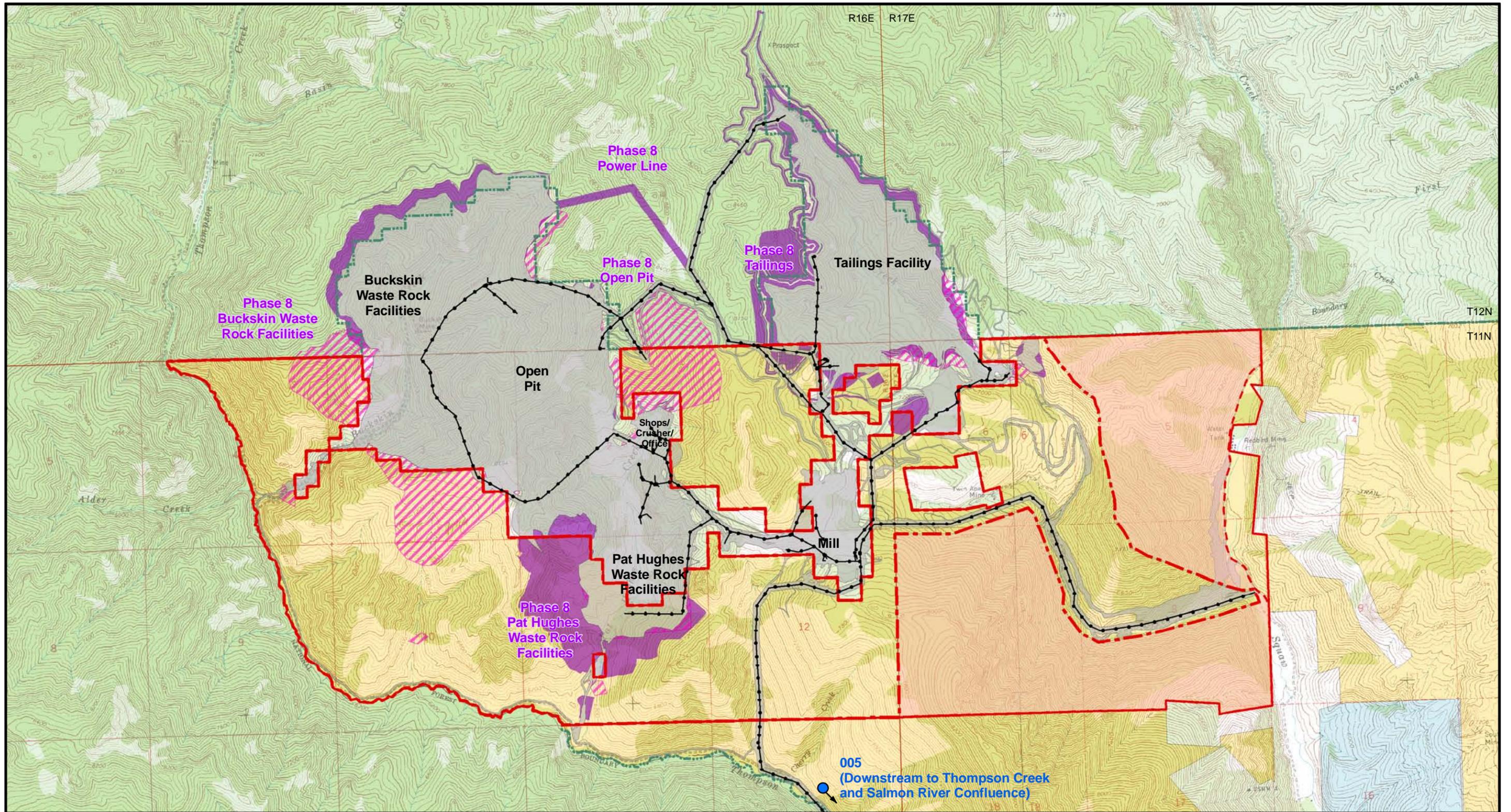
The selected land would be reduced from approximately 5,000 acres to 3,600 acres, and the fair market value of the offered lands would be correspondingly reduced via a conservation easement (e.g., substantial public access and preservation of the land) on large portions or all of the Broken Wing Ranch.

Under this alternative, the offered lands would comprise fee simple title to the Garden Creek parcel and a perpetual conservation easement running with the land for the Broken Wing Ranch or portions of the ranch with fee simple title offered for the remaining area of the ranch. **Figure 5.2-5** shows the areas of the ranch where obtaining fee simple title would be a priority for the BLM, along with the prioritization of the other areas for conservation easements. Upon completion of such land exchange, TCMC would probably sell its remaining fee simple ownership in the ranch to another private party, and the BLM would be responsible for administering the easement.

This alternative was identified by the BLM to balance the concept of a reduced area of selected land that was identified during internal and public scoping and by the Shoshone-Bannock Tribes. Specific requirements for the development of this alternative were that it should enhance block Federal ownership and leave no isolated areas of BLM-administered land and that the easement should apply foremost to land with structures and/or agriculture.

Under this alternative, the BLM would gain public access and some degree of conservation on the maximum area possible (corresponding to 3,600 acres of selected land) and avoid the difficulties of managing structures and agricultural lands.

drawings\Thompson Creek Mine EIS\Figures\Alternative Analysis Report\5.2-3 Selected Land - Reduced Area.mxd



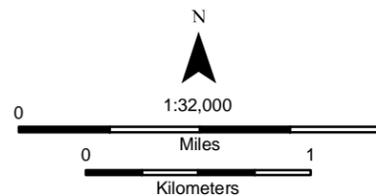
Legend

- | | | |
|--|------------------------|------------------------------------|
| Existing Mining Disturbance | Reduced Area Boundary | Land Ownership |
| Undisturbed Existing Permitted Mining Area | Reduced Area Easement | Bureau of Land Management (BLM) |
| Phase 8 Expansion Areas | Selected Lands | Private |
| Existing Power Line | Modified East Boundary | State |
| NPDES Outfall | | United State Forest Service (USFS) |

NPDES - National Pollution Discharge Elimination System

Selected land, existing mining disturbance, and Phase 8 expansion areas from Thompson Creek Mine data, polygons created by Ken Gardner. Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences. Topographic background from USGS 7.5' Quadrangles 1:24,000 scale. Coordinate system UTM Zone 11 NAD 83

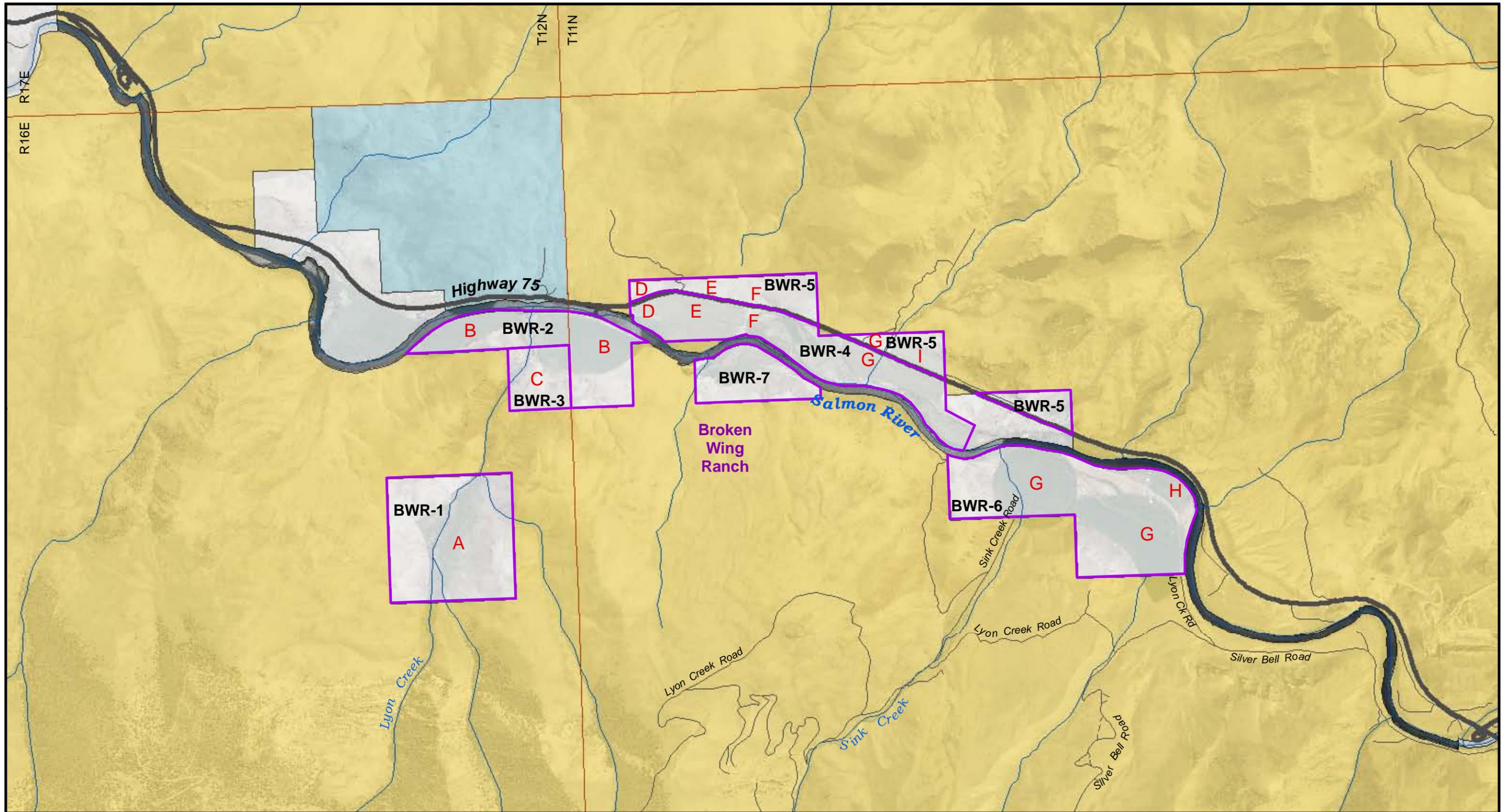
Map created February 25, 2010
By C. Pixton



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Figure 5.2-3
Selected Land - Reduced Area
Land Exchange Alternatives
Thompson Creek Mine Expansion EIS

drawings\Thompson Creek Mine EIS\Figures\Alternative Analysis Report\5.2-4 Broken Wing Ranch NEPA Parcels.mxd

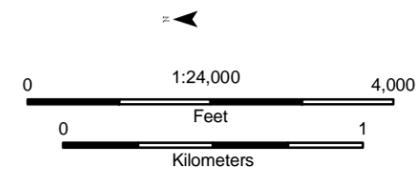


Legend

- Broken Wing Ranch NEPA Parcels
 - 2WD Road
 - Primitive Road
 - Trail
 - Stream
- BLM
 - Private
 - State
 - USFS

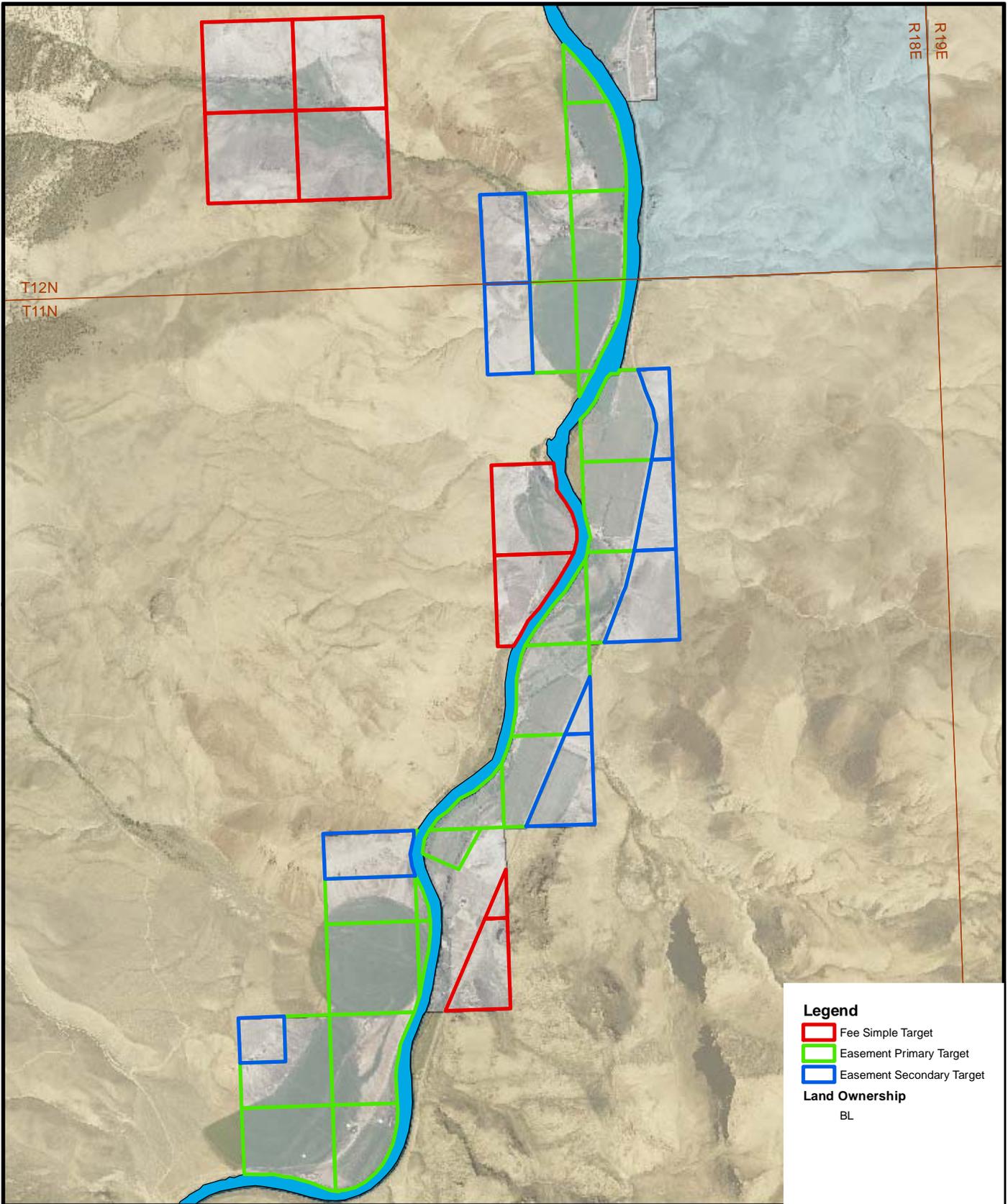
NEPA parcels for the Broken Wing Ranch from Thompson Creek Mine data, polygons created by Ken Gardner.
 Ownership data is at 1:24,000 and created and maintained by the Bureau of Land Management, Idaho State Office, Geographic Sciences.
 Topographic background from USGS 7.5' Quadrangles 1:24,000 scale.
 Coordinate system UTM Zone 11 NAD 83

Map created April 1, 2011
 By C. Pixton



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

Figure 5.2-4
Broken Wing Ranch NEPA Parcels
Thompson Creek Mine Expansion EIS



Offered lands from Thompson Creek Mine data, polygons created by Ken Gardner.
Ownership data is at 1:24,000 and created and maintained by the Bureau
of Land Management, Idaho State Office, Geographic Sciences.
Topographic background is USGS 1:100,00-scale metric Topographic Maps.
Coordinate system UTM Zone 11 NAD 83

Map created January 20, 2010
By C. Pixton



No warranty is made by the Bureau of Land Management (BLM) for the use of this data for purposes not intended by the BLM.

N

1:24,000

0 2,000

Feet

1,000

Meters

Figure 5.2-5
Broken Wing Ranch
Reduced Area Land Exchange
Conservation Easement Strategy
Thompson Creek Mine Expansion EIS

Reduced Area Easement Alternative

This alternative would be similar to the Reduced Area Alternatives described above in that it would address concerns related to the size of the selected land. Under this alternative the boundaries of the selected land would be the same as for the land exchange proposal (**Figure 5.2-1**). However, the areas of the selected land eliminated from the exchange under the Reduced Area Alternative (**Figure 5.2-3**) would be covered by an easement preventing future disturbance of the area. This approach would not leave “islands” of BLM-administered land and would not reduce the property value of the selected land to the degree of the other Reduced Area Alternatives. As a result, less adjustment to the value of the offered lands would be required. Any adjustment to the value of the offered lands would be accomplished through a step-wise reduction in the acreage of the offered lands, similar to the Reduced Area Land Exchange – Fee Simple Alternative.

6.0 CEQ/BLM/Forest Service/USACE Requirements for Alternatives

This section describes the various regulatory requirements for alternative selection. It includes requirements from CEQ regulations for implementing the NEPA, the BLM NEPA Handbook, the Forest Service Environmental Policy and Procedures Handbook, the USACE Procedures for Implementing NEPA, and CWA section 404(b)(1) guidelines.

6.1 CEQ Requirements

The NEPA directs Federal agencies to “*study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources*”(NEPA sec. 102(2)(E)). NEPA regulations and guidance issued by the CEQ do not specify the number of alternatives that need to be considered in the EIS but indicate that a reasonable range of alternatives should be explored and objectively evaluated in the EIS. For alternatives which are eliminated from detailed study, the EIS should briefly discuss the reasons for their being eliminated (40 CFR 1502.14(a)).

The CEQ defines reasonable alternatives as “*those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant*” (CEQ 1986, Question 2a. Forty Most Asked Questions Concerning CEQ’s NEPA Regulations, 51 Fed. Reg. 15618). The range of alternatives that must be discussed in the EIS includes all alternatives that are rigorously evaluated in the document as well as the other alternatives that were considered but eliminated from evaluation.

6.2 BLM Requirements

6.2.1 BLM NEPA Handbook (H-1790-1)

The BLM NEPA Handbook indicates that the range of alternatives should explore alternative means of meeting the purpose and need for the action. The purpose and need statement itself helps define the range of alternatives. Within the range of alternatives evaluated, the EIS must at least consider the proposed action and No Action Alternative, and provide a description of alternatives eliminated from further analysis (if any exist) with the rationale for elimination. The BLM must analyze the alternatives that are necessary to permit a reasoned choice. When working with cooperating agencies, the range of alternatives may need to reflect the decision space and authority of these other agencies, if decisions are being made by more than one

agency. The BLM Handbook also indicates that CEQ regulations direct that an EIS “include reasonable alternatives not within the jurisdiction of the lead agency” (40 CFR 1502.14(c)). Such circumstances would be exceptional and probably limited to the broadest, most programmatic EISs that would involve multiple agencies. For most actions the purpose and need statement should be constructed to reflect the discretion available to the BLM, consistent with existing decisions and statutory and regulatory requirements; thus, alternatives not within BLM jurisdiction would not be “reasonable.”

The BLM NEPA Handbook indicates that the agencies may eliminate an action alternative from detailed analysis for any of the following reasons:

- It is ineffective (it would not respond to the purpose and need).
- It is technically or economically infeasible (consider whether implementation of the alternative is likely given past and current practice and technology; this does not require cost-benefit analysis or speculation about an applicant’s costs and profits).
- It is inconsistent with the basic policy objectives for the management of the area (such as, not in conformance with the land use plan).
- Its implementation is remote or speculative.
- It is substantially similar in design to an alternative that is analyzed.
- It would have substantially similar to those of an alternative that is analyzed.

6.2.2 BLM Land Exchange Handbook (H-2100-1)

The BLM Land Exchange Handbook provides explicit direction for the consideration of land exchanges involving BLM-administered lands. Its intents are to ensure that statutory and regulatory requirements are met and that the public interest is protected.

Land exchanges are generally conducted under the authority contained in sections 102, 205, 206, and 207 of the FLPMA, amended in 1988 by the FLTFA. The FLTFA contains provisions to facilitate and expedite land exchanges by establishing uniform rules and regulations for appraisals, and procedures and guidelines for resolution of appraisal disputes. Sections 205, 206, and 207 of the FLPMA establish five requirements for land exchanges:

- “Acquisitions pursuant to this section shall be consistent with the mission of the department involved and with applicable departmental land-use plan” (Sec. 205 (b)).
- “[T]he public interest will be well served by making that exchange” (Sec. 206 (a)).
- “[T]he Secretary may accept title to any non-Federal land or interests therein in exchange for such land, or interests therein which he finds proper for transfer out of Federal ownership and which are located in the same State as the non-Federal land or interest to be acquired” (Sec. 206 (b)).
- “The values of the lands exchanged...either shall be equal, or if they are not equal, the values shall be equalized by the payment of money to the grantor or to the Secretary concerned as the circumstances require so long as payment does not exceed 25 per

centum of the total value of the lands or interests transferred out of Federal ownership. The Secretary concerned shall try to reduce the amount of payment of money to as small an amount as possible” (Sec. 206 (b)).

- *“No tract of land may be disposed of under this Act, whether by sale, exchange, or donation, to any person who is not a citizen of the United States, or in the case of a corporation, is not subject to the laws of any State or of the United States” (Sec. 207).*

6.2.3 BLM Public Sales Handbook (H-2710-1)

The land sale alternative would be subject to the planning requirements and guidance found in the BLM Public Sales Handbook. In particular, tracts of BLM lands may be offered for sale only at appraised fair market value and if they have been identified for disposal through land use planning, having been found to meet the disposal criteria of section 203(a)(1, 2 or 3) of the FLPMA, e.g., 203(a)(1) “such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency”, or 203(a)(3) “disposal of such tract will serve important public objectives, including but not limited to, expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values, including, but not limited to, recreation and scenic values, which would be served by maintaining such tract in Federal ownership.”

Land sales may be competitive, modified competitive, or direct (non-competitive). Direct sales are used for “protection of an authorized use, such as an existing business, which would be threatened if the tract were purchased by other than the authorized user” (H-2710-1, 0.06.E.3.c).

6.3 Forest Service Requirements

The Forest Service Environmental Policy and Procedures Handbook (FSH 1909.15) indicates that no specific number of alternatives is required or prescribed but the Forest Service should develop reasonable alternatives fully and impartially. The Forest Service should ensure that the range of alternatives does not prematurely foreclose options that might protect, restore, and enhance the environment. The handbook indicates that reasonable alternatives to the proposed action should fulfill the purpose and need and address unresolved conflicts related to the proposed action. It should be alert for alternatives suggested by participants in scoping and public involvement activities and consider alternatives, even if outside the jurisdiction of the Forest Service.

The Handbook indicates, *“The EIS shall document the examination of reasonable alternatives to the proposed action. An alternative should meet the purpose and need and address one or more significant issues related to the proposed action. Since an alternative may be developed to address more than one significant issue, no specific number of alternatives is required or prescribed” (36 CFR 220.5(e)).*

6.4 USACE Requirements

The USACE Procedures for Implementing NEPA (33 CFR 230) indicate that *“this regulation supplements Council on Environmental Quality (CEQ) regulations 40 CFR parts 1500 through*

1508, November 29, 1978, in accordance with 40 CFR 1507.3, and is intended to be used only in conjunction with the CEQ regulations.”

In addition to satisfying NEPA requirements, projects subject to permitting by the USACE under the CWA also must comply with section 404(b)(1) guidelines (40 CFR, Part 230) for discharge of dredge and fill material into waters of the U.S. These guidelines specify *“no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences”* (section 230.10(a)). An alternative is considered practicable if *“it is capable of being done after taking into consideration cost, existing technology, and logistics in the light of overall project purposes”* (section 230.10(a)(2)). Practicable alternatives under the guidelines assume that *“alternatives that do not involve special aquatic sites are available, unless clearly demonstrated otherwise”* (section 230.3(q)). Guidelines also assume that all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise (section 230.10 (a)(3)). The alternatives analysis required for section 404(b)(1) can be conducted either as a separate analysis for 404 permitting or incorporated into the NEPA process. The USACE has determined that an integrated approach for the alternatives analysis is appropriate to satisfy the requirements of both the NEPA and 404(b)(1) guidelines. Integration of both NEPA and 404(b)(1) guidelines ensures that the alternatives selected for evaluation in the EIS are both reasonable and practical. An evaluation and comparison of the potential effects on all resources of concern will be conducted for each of the alternatives evaluated in detail in the EIS.

7.0 Alternatives Screening Criteria

The alternatives (**Section 5.0**) were evaluated using the NEPA and 404(b)(1) guidelines to reduce the number of alternatives to a reasonable number to be carried forward in the DEIS. The screening criteria, from the CEQ and agency requirements (**Section 6.0**), are listed below.

7.1 Consistent with the Purpose and Need

Alternatives that would not meet the Federal purpose and need (**Section 2.0**) would not be carried forward. For example, mine expansion alternatives that would not meet or reasonably comply with the agencies’ mining regulations were eliminated from further consideration. These regulations explicitly recognize the statutory right under the General Mining Laws of the U.S. to conduct operations that are reasonably incident to exploration and development of locatable mineral deposits. Thus, alternatives that would conflict with such right were also eliminated from further consideration. Also, land disposal alternatives that would not have an overall public benefit pursuant to section 206 of the FLPMA were eliminated from further consideration.

7.2 Technically Practical and Feasible

Alternatives determined to not be technically practical or feasible considering past and current practice and technology, and using common sense, were eliminated from further analysis. Alternatives that are speculative in nature would generally not be considered technically practical or feasible.

7.3 Economically Practical and Feasible

Alternatives determined to not be economically practical or feasible considering past and current costs and logistics, and using common sense, were eliminated from further analysis. Such screening does not require cost-benefit analysis or speculation about TCMC's costs and profits.

7.4 Environmentally Reasonable

Alternatives with environmental impacts that have substantially similar effects, or are obviously worse (using common sense basis) than the MMPO or the land exchange proposal or other action alternatives already under consideration, were eliminated from further analysis.

8.0 Matrix of Screening Results

8.1 Mine Expansion Alternatives

Table 8.1-1 Alternatives Screening of the Mine Expansion Alternatives

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
TCMC Developed Alternatives				
Basin Creek Waste Rock Facility	Yes – Would meet regulatory requirements within the context of TCMC’s statutory rights to conduct operations.	Yes – Placing rock in Basin Creek is technically feasible.	No – The long uphill haul from the open pit would make it economically infeasible.	No – Placing waste rock in an undisturbed drainage would have greater adverse impacts than placing the material in a previously disturbed drainage.
Lower Buckskin Waste Rock Facility	Yes – Would meet regulatory requirements within the context of TCMC’s statutory rights to conduct operations.	Yes – Would require construction of another haul road to a lower elevation bench on the face of the proposed facility.	No – Cost related to building the lower bench on the facility is excessive compared with other available alternatives for Phase 8 waste rock.	No – Placing waste rock in Upper Buckskin rather than Lower Buckskin would involve less surface disturbance and would avoid disturbing additional wetlands.
No Name Waste Rock Facility	Yes – Would meet regulatory requirements within the context of TCMC’s statutory rights to conduct operations.	Yes – Its proximity to the pit makes it a preferred location for waste rock disposal.	Yes – The short haul distance from the pit makes it economically practical and feasible.	Yes – Placing waste rock in the No Name drainage was approved in the 1980 ROD.
Full Realignment of the Tailings Dam with an Upstream Rise	Yes – Would meet regulatory requirements within the context of TCMC’s statutory rights to conduct operations.	No – Idaho regulations (IDAPA 37.03.05 Item 045.01.b) prohibit upstream construction of tailings dams unless the embankment and tailings density is 60 percent or greater during earthquake loading. Compliance	Yes – Disposal would be similar economically to the MMPO.	No – Upstream construction of the tailings dam may not be stable under seismic conditions.

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
		with this rule would be difficult to ensure for this alternative.		
New Tailings Starter Dam Downstream of the Existing Dam	Yes – Would meet regulatory requirements within the context of TCMC’s statutory rights to conduct operations.	Yes – A new, lower tailings dam downstream of the existing one was evaluated in the 1980 tailings site alternatives analysis and found to be technically feasible. The Phase 8 tailings dam design report also describes the technical feasibility of a smaller tailings pond downstream of the existing dam.	No – As part of the Phase 8 tailings management, use of two tailings ponds would require duplication of many tailings system components, increasing capital costs significantly over the MMPO. Also, much of the previous geotechnical, geological, and hydrological work would need to be re-done.	No – This alternative would be environmentally worse than the MMPO, as there would be additional tailings inundation of the Bruno Creek watershed downstream of the current tailings storage. This would be in addition to disturbance upstream of the existing dam that would also necessary under this alternative. The additional disturbance would include waters of the U.S. This assumes that the existing tailings dam would be stable as predicted by current studies.
Alternatives Suggested During Public Scoping				
Increase Water Conservation in Mine Operations	Yes – Would meet regulatory requirements within the context of TCMC’s statutory rights to conduct operations.	Yes – Alternative methods of tailings disposal that use less water are technically feasible and are used in other mine operations.	No – Changing the tailings handling system to further, substantially reduce makeup water use would require major changes to tailings handling systems that would have significantly more capital and operating costs compared with the MMPO.	Yes – Reducing water use in Mine operations would require less water from the Salmon River, which would benefit water quality and fisheries.
Backfilling the Open Pit at Closure	Yes – Would meet regulatory requirements within the context of	Yes – Backfilling the pit would be technically feasible.	No – A backfill feasibility study demonstrated that it would not be economically	No – Temporary storage of waste materials during mining would produce the same

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
	TCMC's statutory rights to conduct operations.		feasible (e.g., \$100 million) to completely backfill the pit after mining.	environmental impacts as the MMPO.
Alternatives Developed by the EIS preparers				
No Action Alternative	Not Applicable – The No Action Alternative is required by CEQ regulations.	Not Applicable – The No Action Alternative is required by CEQ regulations.	Not Applicable – The No Action Alternative is required by CEQ regulations.	Not Applicable – The No Action Alternative is required by CEQ regulations.
Modified Mine Facilities and Closure/Reclamation Plans	Yes – Would meet regulatory requirements within the context of TCMC's statutory rights to conduct operations.	Yes – Alternative reclamation plans would be technically feasible methods/practices commonly used in mining reclamation.	Yes – Alternative reclamation plans would be economically feasible methods/practices commonly used in mining reclamation.	Yes – Modification made to the current reclamation plan would be designed to lessen the environmental impacts of the reclaimed facilities.
Locating Mining and Milling Facilities Elsewhere	No – Mining elsewhere is not technically feasible and would not allow TCMC to conduct operations in accordance with its statutory rights.	No – Mining must occur at the ore body location which is fixed at the current open pit location.	No – Re-locating these facilities would be economically infeasible.	No – Relocating facilities from their established, disturbed, locations into undisturbed locations would cause greater environmental impacts than those caused by expansion of the existing facilities.
Underground Mining	No – It is not technically or economically feasible and would not allow TCMC to conduct operations in accordance with its statutory rights.	No – Underground mining is technologically preferable when the orebody in question is too deep or inaccessible. However, most of the overburden required to mine the Phase 8 ore will already have been removed by	No – It would not be economically reasonable at realistic molybdenum prices to convert the mine from surface to underground block caving operations as such would involve a capital cost of over \$100,000,000 and an operating cost at least 35 percent greater (about	No – The proposed expansion of the open pit would occur within the existing surface disturbance at the Mine, and underground mining would not substantially decrease the amount of surface disturbance.

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
		previous mining phases so only the incremental overburden required to expose the Phase 8 ore requires removal.	\$50,000,000 per year) than that of the current surface mining operations.	
Concurrent Backfilling the Open Pit	No – It is not technically or economically feasible and would not allow TCMC to conduct operations in accordance with its statutory rights.	No – There would be substantial physical safety hazards from trying to simultaneously mine and backfill in the close confines of the pit.	No – There is no place in the pit to store waste material during mining operations; i.e., placing waste material in any portion of the pit would prevent the economic extraction of the underlying orebody.	Yes – Backfilling the open pit with waste rock and/or tailings would reduce the area needed to expand these facilities.
Disposing of Mill Tailings or Mine Overburden through Offsite Utilization	Yes – Would meet regulatory requirements within the context of TCMC’s statutory rights to conduct operations.	Yes – Disposal through offsite utilization would be technically feasible	No – There is no local market for any meaningful amounts of such material, and the low unit value of the material precludes shipping meaningful amounts of the material to other markets.	Yes – Utilizing the material offsite would reduce the area disturbed by expansion of the disposal facilities.
Waste Rock Buttress of Tailings Dam	Yes – Would meet regulatory requirements within the context of TCMC’s statutory rights to conduct operations.	No – A buttress structure would reduce the downstream slope of the tailings dam; however, the amount of sand produced from the tailings is insufficient to fill in the area behind the buttress structure.	No – Moving waste rock from the pit to the base of the tailings dam would require construction of a new haul road with substantially higher capital and operating costs for waste rock disposal compared with the MMPO. In addition, all of the Type 1 waste material will be	No – There is no way to haul large quantities of waste rock from the pit to the base of the tailings dam without constructing a new haul road which would disturb a large area of undisturbed ground that would not be disturbed in the MMPO.

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
			necessary for reclamation of the waste rock facilities and is not available to buttress the tailings dam. The review of the tailings dam to date indicates that the dam will be stable.	

8.2 Land Disposal Alternatives

Table 8.2-1 Alternatives Screening of the Land Disposal Alternatives

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
Alternatives Suggested During Public Scoping				
Direct Land Purchase	Yes – The public would gain funds in exchange for lands to be impacted by mining.	Yes – The BLM feasibility analysis still needs the signature of the BLM Director, and the NOI describes a proposed land disposal (land exchange or land sale) action.	Yes – Money would go the U.S. Treasury.	Yes – The environmental impacts of a land purchase would be the same for the selected land and possibly slightly worse for the offered lands, compared with the land exchange proposal.
Additional Alternatives for Private Lands	Yes – The BLM would administer the additional private lands for the benefit of the general public in exchange for the selected land that would be impacted by mining.	No – The BLM will not evaluate a land exchange in which the proponent does not reasonably control the offered lands.	Yes – If the BLM approves a land exchange based on the EIS, a Federal land appraisal would subsequently be made, and an exchange would be made based on the fair market value at that time as	Yes – The public would gain lands that are unimpacted by mining, lands that could be developed otherwise.

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
			determined by the Federal Government.	
Return Broken Wing Ranch to Native Vegetation	Yes – The BLM would administer the offered lands for the benefit of the general public in exchange for the selected land that would be impacted by mining.	No – Restoring the entire ranch to native vegetation in a short time frame would result in a high probability of substantial noxious weed infestation.	No – Restoring the entire ranch to native vegetation in a short time frame would require intensive reclamation work and would not be economically feasible.	No – The high probability of substantial noxious weed infestation would be environmentally worse than continued, properly managed agricultural use.
Move Selected Land Boundary 500 Yards East of Thompson Creek	Yes – The BLM would continue to administer Thompson Creek and its riparian corridor for the benefit of the general public.	No – This alternative would leave a 500-yard-wide strip of BLM-administered land between private land and the Forest Service boundary along the creek centerline. Such a strip would distinctly conflict with the fundamental land management goal of obtaining-maintaining block ownership for efficient and practicable land management.	Yes – Adjusting the boundary of the selected land by 500 yards would not likely fundamentally alter the balance of the fair market values of the land exchange, or, if so, a portion of the offered land could be removed from the land exchange.	No – Although retaining Federal ownership of Thompson Creek and its riparian corridor would benefit fisheries, one of the stated purposes for this adjustment of the exchange boundary was to foster continued grazing of the riparian area along Thompson Creek. Continued grazing of the riparian area would negate the benefits obtained by retaining Thompson Creek in Federal ownership and would have greater environmental impacts than the land exchange proposal with its proposed mitigation to protect riparian habitat..
Alternatives Developed by the EIS preparers				
No Action Alternative	Not Applicable – The No Action Alternative is required by CEQ regulations.	Not Applicable – The No Action Alternative is required by CEQ regulations.	Not Applicable – The No Action Alternative is required by CEQ regulations.	Not Applicable – The No Action Alternative is required by CEQ regulations.
Reduced Area Land Exchange –	Yes – The BLM would	Yes – The areas	Yes – The offered lands	Yes – The BLM would retain

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
Fee Simple	retain the areas excluded from the selected land and would obtain portions of the offered lands. These lands would be administered for the benefit of the general public in exchange for the selected land that would be impacted by mining.	excluded from the selected land are those lands that do not affect Mine operation.	would be reduced in value so that the exchange would be made based on the fair market value as determined by the Federal Government.	portions of the selected land that are not needed for Mine operation and that have resource value. In addition, the BLM would obtain portions of the offered lands.
Reduced Area Land Exchange – Conservation Easement Strategy	Yes – The BLM would retain the areas excluded from the selected land and would obtain portions of the offered lands. Portions of the offered lands not obtained in fee simple would have conservation easements that would protect resource qualities considered to be of significant value to the public.	No – The complexities of trying to establish the "arm's length" fair market value of such easement, the challenges in long-term management of a conservation easement, and the probable elimination of the recreation site and Boise State University field station options make this alternative technically impractical.	Yes – The offered lands would be reduced in value so that the exchange would be made based on the fair market value as determined by the Federal Government.	Yes – The BLM would retain portions of the selected land that are not needed for Mine operation and that have resource value. In addition, the BLM would obtain easements to protect resource values on portions of the offered lands not obtained in fee-simple ownership.
Reduced Area Easement Alternative	Yes – A conservation easement placed on a portion of the selected land would maintain many of the resource values of the selected land. The BLM would obtain portions of the offered lands (more	Yes – The areas of the selected land that would contain easements are lands that do not affect Mine operation.	Yes – Placing easements on the unneeded portions of the selected land would not reduce the value as significantly as eliminating these areas from the exchange. As a result, less adjustment to the value of	Yes – The resource values of the unneeded portions of the selected land would be protected. A larger portion of the offered lands (relative to the reduced area alternative) would be transferred to BLM administration.

Alternative	Alternatives Screening Criteria			
	Consistent with Purpose and Need	Technically Practical and Feasible	Economically Practical and Feasible	Environmentally Reasonable
	under this scenario than under the Reduced Area Land Exchange – Fee Simple) and administer them for the benefit of the general public in exchange for the selected land that would be impacted by mining.		the offered lands would be required.	

9.0 Alternatives to Be Analyzed in the EIS

The following sections summarize the alternatives remaining following the screening analysis. The rationale for analyzing these alternatives is summarized in **Table 9.1-1** and **Table 9.2-1**.

9.1 Mine Expansion Alternatives

Of the 15 possible mine expansion alternatives, four (including the MMPO submitted by TCMC and the No Action) were carried forward for further analysis in the EIS. These alternatives are listed in **Table 9.1-1**, along with the section reference where they are described in further detail.

Table 9.1-1 Mine Expansion Alternatives to Be Analyzed in the EIS

Alternative	Section Reference
TCMC Developed Alternatives	
MMPO	5.1.1
No Name Waste Rock Facility	5.1.1
Alternatives Developed by the EIS Preparers	
No Action Alternative	5.1.3
Modified Mine Facilities and Closure/Reclamation Plans	5.1.3

9.2 Land Disposal Alternatives

Of the nine possible alternatives to the land exchange proposal, five (including the TCMC land exchange proposal and the No Action) were carried forward for further analysis in the EIS. These alternatives are listed in **Table 9.2-1**, along with the section reference where they are described in further detail.

Table 9.2-1 Land Disposal Alternatives to Be Analyzed in the EIS

Alternative	Section Reference
Alternatives Suggested During Public Scoping	
TCMC Land Exchange Proposal	5.2.1
Land Sale	5.2.2
Alternatives Developed by the EIS Preparers	
No Action Alternative	5.2.3
Reduced Area Land Exchange – Fee Simple	5.2.3
Reduced Area Easement Alternative	5.2.3

10.0 Alternatives Eliminated from Consideration in the EIS

The following sections summarize the alternatives eliminated from consideration in the EIS. The rationale for eliminating these alternatives is presented in **Table 8.1-1** and **Table 8.2-1**.

10.1 Mine Expansion Alternatives

Eleven alternatives were eliminated from further analysis due primarily to technical and economic feasibility issues. The alternatives eliminated are listed in **Table 10.1-1**, along with a summary of the screening criteria they did not meet and the section reference where the alternative is described.

Table 10.1-1 Mine Expansion Alternatives Eliminated from Consideration in the EIS

Alternative	Screening Criteria	Section Reference
TCMC Developed Alternatives		
Basin Creek Waste Rock Facility	Economically Impractical, Environmentally Inferior	5.1.1
Lower Buckskin Waste Rock Facility	Economically Impractical, Environmentally Inferior	5.1.1
Full Realignment of the Tailings Dam with an Upstream Rise	Technically Impractical, Environmentally Unreasonable	5.1.1
New Tailings Starter Dam Downstream of the Existing Dam	Economically Impractical, Environmentally Inferior	5.1.1
Alternatives Suggested During Public Scoping		
Increase Water Conservation in Mine Operations	Economically Impractical	5.1.2
Backfilling the Open Pit at Closure	Economically Impractical, Environmentally Inferior	5.1.2
Alternatives Developed by the EIS Preparers		
Locating Mining and Milling Facilities Elsewhere	Purpose and Need, Technically Impractical, Economically Impractical, Environmentally Inferior	5.1.3
Underground Mining	Purpose and Need, Technically Impractical, Economically Impractical, Environmentally Inferior	5.1.3
Concurrent Backfilling the Open Pit	Purpose and Need, Technically Impractical, Economically Impractical,	5.1.3
Disposing of Mill Tailings or Mine Overburden through Offsite Utilization	Economically Impractical	5.1.3
Waste Rock Buttress of Tailings Dam	Technically	5.1.3

Alternative	Screening Criteria	Section Reference
	Impractical, Economically Impractical, Environmentally Inferior	

10.2 Land Disposal Alternatives

Four alternatives were eliminated from further analysis due primarily to technical feasibility issues. The alternatives eliminated are listed in **Table 10.2-1**, along with a summary of the screening criteria they did not meet and the section reference where the alternative is described.

Table 10.2-1 Land Disposal Alternatives Eliminated from Consideration in the EIS

Alternative	Screening Criteria	Section Reference
Alternatives Suggested During Public Scoping		
Additional Alternatives for Private Lands	Technically Impractical	5.2.2
Return Broken Wing Ranch to Native Vegetation	Economically Impractical, Environmentally Inferior	5.2.2
Move Selected Land Boundary 500 Yards East of Thompson Creek	Technically Impractical, Environmentally Inferior	5.2.2
Alternatives Developed by the EIS Preparers		
Reduced Area Land Exchange – Conservation Easement Strategy	Technically Impractical	5.2.3

11.0 Future Public Involvement

Public participation and opportunities for comment will continue throughout the project. The following is a summary of the remaining key steps in the project.

- Existing information and results of new studies will be used to characterize the existing conditions of the environment at the project site. A DEIS will be prepared. The DEIS will evaluate the potential direct and indirect environmental impacts to a wide range of environmental and social resources from the MMPO, land disposal, and other alternatives. If possible, the DEIS will identify the agency preferred alternative(s), if a preferred alternative(s) exists at the time. In addition, mitigation to reduce impacts will be evaluated. The impacts analysis will also include an evaluation of cumulative impacts, i.e., the impacts on the environment that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable actions. The DEIS will describe consultation and coordination efforts that have occurred as part of the project. The DEIS is expected to be available to the public during 2012.
- When the DEIS is completed, a Notice of Availability (NOA) will be published in the Federal Register announcing the beginning of a 90-day public comment period on the

DEIS. The comment period will begin the day the NOA is published in the Federal Register. Parties must submit comments during the comment period to be eligible to appeal decisions based on the final EIS (FEIS). A news release regarding the availability of the DEIS will also be provided to the Idaho media, and the NOA will be published as a legal notice in *The Challis Messenger* and *The Idaho Statesman* newspapers. Copies of the DEIS will be available and will be provided to all persons on the NEPA mailing list. During the comment period, public meetings will be held on the DEIS in the same cities where the public meetings were held during the scoping process.

- Comments on the DEIS received from other agencies and the public during the comment period will be reviewed and addressed in the FEIS. The FEIS will identify the preferred alternative of the agencies. The FEIS is expected to be available during 2013.
- When the FEIS is completed, a NOA will be published in the Federal Register to begin a 30-day availability period for the FEIS. A news release regarding the availability of the FEIS will also be provided to the Idaho media, and the NOA will be published in *The Challis Messenger* and *The Idaho Statesman* newspapers. Copies of the FEIS will be available and will be provided to all persons on the NEPA mailing list. Although the availability period is not a formal public comment period, the public may provide comments on the FEIS.
- The BLM will consider public comments on the FEIS and determine if any such comments would require the preparation of a supplemental EIS. The BLM, Forest Service, and USACE will consider all public comments received during the availability period and may address the comments on the FEIS in their respective RODs. The BLM, Forest Service, and USACE will each complete a ROD based on the FEIS and according to their respective jurisdictions. The RODs will document and discuss each agency's selected alternative, the environmentally preferable alternative (if different from the selected alternative), and any accompanying mitigation measures. The RODs are expected to be available to the public during 2013.
- A news release(s) announcing the RODs will be provided to the Idaho media, and legal notices of decisions documented in the RODs will be published simultaneously in *The Challis Messenger* and *The Idaho Statesman* newspapers. The appeal period(s) will begin the day after the legal notices are published. Copies of the RODs will be available and will be provided to all persons on the NEPA mailing list. The RODs will be issued in full force and effect, and thus cannot be issued until at least 30 days after publication of the NOA for the FEIS. A party adversely affected by a decision in a ROD may appeal the decision according to the applicable regulations, which will be noted in each ROD.

11.1 Contact Information

There will be additional opportunities for public involvement during the project. Written responses can be submitted to: Thompson Creek Mine EIS c/o Brian Buck, JBR Environmental Consultants, 8160 South Highland Drive, Sandy, Utah 84093. The information may also be delivered personally to the BLM Challis Field Office, sent by facsimile (please reference "Thompson Creek Mine EIS" on the cover page) to the attention of Brian Buck at (801) 942-1852, or sent electronically to tcm_eis@jbrenv.com.

The public can direct questions or comments to: Ken Gardner, Project Lead, BLM Challis Field Office, 1151 Blue Mountain Road, Challis, Idaho 83226. Mr. Gardner may also be contacted at (208) 879-6210.

APPENDIX A

**NOI, Legal Notice, Press Release, Scoping Letter, Website Content, Scoping Handouts, and
Scoping Meeting Posters**

APPENDIX B

Initial Scoping Mailing List

APPENDIX C

Scoping Meeting Attendance Lists

APPENDIX D

Internal Scoping Meeting Minutes

APPENDIX E

Nez Perce Conference Call Minutes

APPENDIX F

Respondent List and Comment Letters

APPENDIX G

TCMC Internal Scoping Letter

APPENDIX H

Discussion of Public Scoping Comments That May Affect Alternatives