Final Environmental Impact Statement
Pogo Gold Mine Project

Delta, Alaska

National Pollutant Discharge Elimination System (NPDES)
Permit Application No. AK-005334-1

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Appendix A.1 Options Screening Process

Once all the options that addressed the scoping issues were identified in Section 2.4.2, it was necessary to screen them to reduce the large number of options and sub-options initially identified to a more manageable number that still provided a reasonable range from which to identify full project alternatives. This detailed and time-consuming process is described below.

First, objective screening evaluation criteria were developed for each issue (Section A.1.1). Then, each option was screened against those criteria to determine which options best addressed the issues (Section A.1.2).

A. 1.1 Screening Evaluation Criteria and Metrics

This section describes how the 17 scoping issues and their evaluation criteria identified in Section 2.4.1 (Scoping Issues Identification) were expanded to provide specific metrics (measurements) to be used to screen the options developed in Section 2.4.2 (Options Development).

Metrics Identification

Fundamental to the options screening process is evaluation of each issue criterion to identify an objective range of impacts caused by one or more options. These impacts should reflect the concerns of the public and the agencies. The metrics identified for each criterion varied. Some reflected a specific regulatory standard or limit, such as air quality or water quality standards, that provide a very objective metric. Exceeding those limits might represent an unacceptable impact on the resource and therefore could result in screening out that option. Other metrics were not as well defined and therefore were more subjective. These were identified by using best professional judgment.

The metrics identified for each criterion were applied in the screening process described below in Section A.1.2 (Options Screening) to eliminate options that would not meet acceptable environmental, technical, or economic standards, or options that provided no obvious advantage to other, more environmentally acceptable options that would be retained for detailed analysis in the Environmental Impact Statement (EIS).

Note: Because “impacts” can be both positive and negative, in this document the term “impacts” is construed to mean negative impacts while the term “benefits” is construed to mean positive impacts.

Issue 1. Surface and Groundwater Quality

Criterion Maintenance of existing water quality in the affected drainages to fully protect all designated uses (such as aquatic life, drinking water, and industrial use).

All discharged waters would be expected to be in compliance with toxicity criteria and numerical water quality standards as defined by the federal National Pollutant Discharge Elimination System (NPDES) permit, underground injection control (UIC) permit, and state discharge permit(s) or certifications of federal permit(s). Therefore, the discharges from each option were

evaluated for either meeting or failing to meet those regulatory requirements by using the following evaluation criteria:

- No or low impact – No or very low likelihood that a discharge would exceed permit standards.
- Moderate impact – Occasional non-compliance would be possible.
- High impact – Substantial risk of not obtaining a discharge permit, and if obtained, compliance reliability would be low.

For those releases from the project that are not covered by a discharge permit with specific numeric limits, a more general set of evaluation criteria was used. These criteria would apply to situations such as accidental or unplanned releases (e.g., fuel or chemical spills) and stormwater runoff. The following metrics were applied:

- No or low impact – No planned release or low likelihood of occurrence; if an accidental release or spill occurs, the potential for impacts to environment or public interests would be negligible. Low likelihood of stormwater runoff that would be inconsistent with the goals of the stormwater NPDES permit.
- Moderate impact – There is a risk of accidental release, or a release has a low likelihood of occurrence but the impacts could be substantial. Moderate likelihood of stormwater runoff that would be inconsistent with the goals of the storm water NPDES permit.
- High impact – A high potential for accidental release exists, and the severity of the release would be high. High likelihood of storm water runoff that would be inconsistent with the goals of the stormwater NPDES permit.

Issue 2. Wetlands

Criterion Siting, construction, and management of components to avoid, minimize, and mitigate impacts on wetlands.

This criterion addresses wetlands impacts and the degree to which they can be avoided, minimized, and compensated according to the regulatory definition of mitigation in the Clean Water Act Section 404(b)(1) guidelines. Because a project must meet the 404(b)(1) guidelines, expected failure of an option to meet these guidelines was considered a fatal flaw and resulted in that option being dropped from further consideration.

The metrics are based on the level of expected direct and indirect impacts, and whether they can be mitigated within the context of the U.S. Army Corps of Engineers (COE) permitting process.

- No or low impact – No or few direct or indirect impacts to wetlands expected.
- Moderate impact – More than a few direct or indirect impacts to wetlands could not be avoided.
- High impact – Substantial direct or indirect impacts to wetlands expected.

Issue 3. Fish and Aquatic Habitat

Criterion Minimize impacts to fish and aquatic habitat.

This criterion addresses impacts to fish and aquatic habitat. Two types of impacts are considered – direct and indirect. Direct impacts are those that directly affect fish and aquatic habitat (elimination or reduction in availability of habitat from construction activities, physical or chemical barrier[s] to movements, bioaccumulation of metals, or unexpected changes from project system failures). Indirect impacts would be from human activities due to improved access and project development.

The metrics are based on these direct, indirect, and movement impacts:

- No or low impact – No or few direct or indirect impacts to fish or habitat. Impacts would be localized and affect few individuals of any one species.
- Moderate impact – More than a few direct or indirect impacts to fish or habitat. Impacts might be localized, affecting a large number of individuals of one or more species, or might be greater than local, affecting the major drainages containing project facilities.
- High impact – Substantial direct or indirect impacts to fish or habitat. Impacts likely could extend beyond the major drainages containing project facilities and affect a large number of individuals of one or more species.

Issue 4. Wildlife

Criterion Minimize impacts to wildlife and habitat.

This criterion addresses impacts to wildlife itself as well as to wildlife habitat. Two types of impacts are considered – direct and indirect. Direct impacts are those that directly affect animals (e.g., collisions with vehicles or power lines and physical barrier to movements) and habitat (direct elimination of habitat by construction of project facilities such as the airstrip, road, mill and camp, and dry-stack tailings pile). Indirect impacts are the effective loss of habitat through avoidance because of human contact and associated mining activities and noise.

The metrics are based on these direct and indirect impacts:

- No or low impact – No or few direct or indirect impacts to wildlife or habitat. Impacts would be localized in nature.
- Moderate impact – More than a few direct or indirect impacts to wildlife or habitat. Impacts would be greater than local in nature, but likely would not extend beyond the major drainages containing project facilities.
- High impact – Substantial direct or indirect impacts to wildlife or habitat. Impacts likely could extend beyond the major drainages containing project facilities.

Issue 5. Air Quality

Criterion Minimize impacts to existing air quality.

Air impacts may be temporary, such as fugitive dust related to construction or periodic operational activities, or long lasting, such as continuous releases of emissions from power plants. The primary air quality metrics related to development are the Alaska Ambient Air Quality Standards (AAAQS), which are the same as the National Ambient Air Quality Standards (NAAQS), and Prevention of Significant Deterioration (PSD) increments for a Class II area. These metrics represent threshold maxima that cannot be exceeded under specific permit requirements for the project area.

Those project options that are associated with these emissions provide predictable threshold values, and the criteria metrics are either “Exceeds Criterion” or “Does Not Exceed Criterion.” Exceeding the criterion was considered a fatal flaw and resulted in not including that option in a future alternative.

Other air quality releases, such as fugitive dust or other emissions that affect soils, vegetation, or visibility, may not have specific thresholds. The metric for fugitive dust assigned to each component option includes:

- No or low impact – No impact from fugitive emissions or minimal potential of routine occurrences.
- Moderate impact – Periodic fugitive releases, such as during construction or, if recurring, limited to areas adjacent to the project facilities. Visible during periods of highest activity or high winds; localized accumulations may affect vegetation immediately adjacent to or on facility property.
- High impact – Continuous or long-term releases that create a substantial visibility nuisance or affect the public or natural resources.

Issue 6. Noise

Criterion Minimize noise impacts to residents, recreationists, wildlife, and others.

The impacts of noise are related to project construction activities, which are temporary, and operational activities, which may be periodic or long term. The most substantial noise impacts directly related to mining, such as blasting and mine operations, would occur underground and likely would not affect this criterion. Activities such as handling of development rock or operation of a power plant would produce varying noise impacts during different stages from project development through operation. Milling operations would occur above ground, as would trucking of tailings to the dry-stack tailing pile. Mine supplies and personnel during construction and operation periodically would traverse an all-season road, winter road, or arrive by air.

These noise impacts generally are not regulated at a threshold level, but may result in impacts that have environmental or societal impacts. Where applicable, the following metrics apply to these options:

- No or low impact – No noise, a low level of noise produced, or noise occurs in an area where there are no receptors to be affected by the noise.
- Moderate impact – Moderate levels of noise produced, but either the noise occurrence is not continuous or it occurs in areas where there are few receptors likely to be affected.
- High impact – The potential for recurring noise has unacceptable impacts to residents, recreationists wildlife, or others.

Issue 7. Safety

Criterion Minimize safety issues for workers and members of the public.

This criterion addresses safety in the context of workers as well as members of the public who could come into contact with project-related activities such as a winter or all-season road. Safety issues related to workers in the mine, in the mill, and at other project facilities are not

considered because they would be covered by specific Mining and Safety Health Administration (MSHA) regulations, which are beyond the scope of this EIS.

The metrics used are necessarily general in nature because safety issues vary widely among the various project components. For example, specific safety issues related to project use (supply trucks) as well as public use (all-terrain vehicles and snow machines) of a winter road would differ from the nonpublic safety issues related to workers at a staging area loading and unloading trucks in the dark and cold of mid-winter to move a year's worth of supplies across a winter road. The metrics are:

- No or low impact - No or low likelihood of injury to workers or members of the public.
- Moderate impact – Moderate likelihood of injury to workers or members of the public.
- High impact – High likelihood of injury to workers or members of the public.

Issue 8. Reclamation

Criterion Components designed and sited to promote successful reclamation.

This criterion addresses the return of exploration, developed, and mined areas to a stabilized condition to ensure long-term protection of land and water resources in a manner compatible with the selected post-project land use.

The metrics identified are based on the likelihood of successful reclamation from the perspective of component design, construction, operation, and closure, and of protection of post-project water quality. No metric with a moderate impact level was used because reclamation was considered to be a threshold criterion with no basis for only meeting the criterion part way. The metrics are:

- No or low impact – Lower likelihood of unsuccessful reclamation with a corresponding increased potential for minimizing impacts to water quality and/or an increased potential to achieve a post-mining land use consistent with the Tanana Basin Area Plan (TBAP).
- High impact – Higher likelihood of unsuccessful reclamation with a corresponding increased potential for unacceptable impacts to water quality and/or a decreased potential to achieve a post-mining land use consistent with the TBAP.

Issue 9. New Industrial and Commercial Uses

Criterion Infrastructure for new industrial and commercial uses consistent with the management intent, guidelines, and land use designations of the adopted Tanana Basin Area Plan and the Tanana Valley State Forest Management Plan.

The State of Alaska's TBAP provides for multiple uses in the general project area, including industrial and commercial uses. Examples include mining, timber harvesting, agriculture, trapping, mushing, and guiding. Article VIII, § 1 of the Alaska Constitution states, "It is the policy of the State to encourage the settlement of its land and the development of its resources by making them available for maximum use consistent with the public interest." This charge is reflected in the State of Alaska land planning process and land management and permitting policies, and in the State of Alaska's active involvement of the public and Tribes in these multiple land uses.

The State's Tanana Valley State Forest (TVSF) was established as one of the first units of the Alaska state forest system. The primary purpose of state forests is multiple use management that provides for the production, utilization, and replenishment of timber resources while promoting personal, commercial, and other beneficial uses of resources.

The TVSF Management Plan (Alaska Department of Natural Resources, 2001b) identifies and prioritizes management activities for lands designated by the Alaska Legislature as the TVSF. This plan also sets policy on how the ADNR should review proposals for use of state forest land by the public, industry, and other governmental agencies. Because the Management Plan is designed to promote multiple use, it establishes rules and guidelines aimed at allowing various land uses to occur with minimal conflict.

The metrics identified are based on the type, mode, design, siting, management, and disposition of infrastructure for the Pogo Mine that could be used for other industrial and commercial uses, including other mines in the same area, consistent with the TBAP and the TVSF Management Plan. Access type includes that for personnel/supplies (road) as well as electric power (cleared right-of-way). Access mode includes ground (all-season road and winter road) and air access. Design includes width and robustness of an all-season or winter road and sizing and load of a power line. Management includes whether the infrastructure would be available to users other than the Applicant during or after the life of the Pogo project. Disposition includes whether the infrastructure would remain after the life of the Pogo project or would be removed or otherwise altered. The metrics are:

- No or low impact – Infrastructure type, design, siting, management, and disposition very favorable to other industrial or commercial uses.
- Moderate impact – Infrastructure type, design, siting, management, and disposition moderately favorable to other industrial or commercial uses.
- High impact – Infrastructure type, design, siting, management, and disposition not favorable to other industrial or commercial uses.

Issue 10. Recreational Resources and Uses

Criterion Access for recreational uses consistent with the management intent, guidelines, and land use designations of the adopted Tanana Basin Area Plan and the Tanana Valley State Forest Management Plan.

This criterion addresses use of presently remote areas for recreational purposes such as hunting, trapping, fishing, floating, hiking, boating, sightseeing, berry picking, cross-country skiing, mushing, and snow machining.

The metrics identified are based largely on the mode, design, siting, management, and disposition of the access infrastructure for the Pogo Mine that could be used for recreational uses. Access type includes that for personnel/supplies (road) as well as electric power (cleared right-of-way). Access mode includes ground (all-season road and winter road) and air access. Design includes width and surface of an all-season or winter road. Management includes whether a road or airstrip would or would not be available to recreational users during or after the life of the Pogo project. Disposition includes whether a road or airstrip would remain after the life of the Pogo project or would be removed or otherwise altered. The metrics are:

- No or low impact – Infrastructure type, design, siting, management, and disposition very favorable to increased recreational access.
- Moderate impact – Infrastructure type, design, siting, management, and disposition moderately favorable to increased recreational access.
- High impact – Infrastructure type, design, siting, management, and disposition not favorable to increased recreational access.

Issue 11. Existing Privately Owned Lands and Existing Recreational and Commercial Uses

Criterion Minimize impacts to existing privately owned lands and existing recreational and commercial uses consistent with the management intent, guidelines, and land use designations of the Tanana Basin Area Plan and the Tanana Valley State Forest Management Plan.

This criterion addresses existing privately owned lands, residences, and cabins; existing recreational uses such as hunting, fishing, trapping, boating, mushing, and snow machining; and existing commercial uses such as trap lines and sled dog expeditions. Increased recreation and industrial and commercial uses could have impacts on existing privately owned lands and existing recreational and commercial uses.

The metrics identified are based on the level of increased industrial, commercial, and recreational uses in areas with remote private land ownership and existing recreational and commercial uses:

- No or low impact – No or limited increase in industrial, commercial, and recreational uses.
- Moderate impact – Moderate increase in industrial, commercial, and recreational uses.
- High impact – High increase in industrial, commercial, and recreational uses.

Issue 12. Subsistence and Traditional Uses

Criterion Minimize impacts to subsistence and traditional resource uses currently occurring within the affected area.

This criterion addresses subsistence uses, which are defined under state law as “the noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption” (Alaska Statutes 16.05.940[32]). Examples of subsistence uses in this area include hunting, fishing, trapping, drinking water, wood gathering, and berry picking. (Some existing commercial and recreational activities also currently use these same resources.) Activities that might affect the availability of subsistence and traditionally used resources, access to them, or competition for them could have impacts on subsistence and traditional uses.

The metrics identified are based on potential changes in subsistence resource availability, access to those resources, and competition for those resources:

- No or low impact – No or limited change in availability of, access to, or competition for traditional subsistence resources.
- Moderate impact – Moderate change in availability of, access to, or competition for traditional subsistence resources.
- High impact – Major change in availability of, access to, or competition for traditional subsistence resources.

Issue 13. Cultural Resources

Criterion Avoid impacts to cultural resources.

This criterion addresses cultural resources, whether and where they exist, their cultural importance, and whether they would be affected by the project. Criteria used in determining importance of an archaeological site or historic property are the same as used in determining eligibility for listing on the National Register of Historic Places (Code of Federal Regulations, Title 36, Part 800, Subpart B [Section 106 process]). With respect to this project, the general criterion pertaining to eligibility is stated as "[those sites] that have yielded, or may be likely to yield, information important in prehistory and history."

The metrics identified are based on whether, for project site locations and transportation corridors, cultural resources have been identified, whether those resources have been determined eligible for listing on the National Register, and whether the resources would be damaged or destroyed by construction or operation of the project. The metrics are:

- No Impact – No cultural resources are located within the area affected by the undertaking and/or there are no properties listed on, or eligible for listing on, the National Register of Historic Places.
- High Impact – Properties listed on, or eligible for listing on, the National Register of Historic Places are located within the area affected by the undertaking resulting in an adverse effect to those properties.

Issue 14. Socioeconomics

Criterion Minimize social and quality of life impacts and maximize economic benefits to potentially affected communities.

The only project component options likely to have measurable socioeconomic consequences concern access to the mine site. The type, management, and disposition options for the two primary ground access options (all-season road or winter-only road, and associated air transport) could have different socioeconomic impacts and/or benefits in the Delta area. In part, the issue concerns where the mine workforce would reside. With the winter road option, crews would rotate on a 2-week-on, 2-week-off shift basis, presumably with many employees commuting from outside the Delta area and perhaps outside the Interior. With the all-season road option, crews would rotate on a 4-days-on and 4-days-off basis. This more frequent rotation could encourage more local residents to work at the mine and could induce nonresident workers to settle in the Delta area rather than commute from Fairbanks or elsewhere.

Too much population growth, however, could generate an increase in infrastructure demands (e.g., housing, education, and public safety), causing economic burdens on local government and Tribes. The effects of an increase of local workers and their families must be assessed on population growth, resident employment and commerce, housing, schools and other public

facilities, local government and Tribal finances, health and social services, and the overall quality of life of local residents.

Other aspects of the project with potential socioeconomic impacts to local residents and Tribal resources also must be evaluated, including intermittent and final mine closure and the design, management, and eventual disposition of project facilities and access systems.

The all-season road option could affect other resource development in the area. If the road were open to the public and/or other industrial or commercial users, it could facilitate economic and population growth in the Delta area. These impacts could extend well beyond the life of the mine if an all-season road were permanently left open for public, industrial, and commercial access rather than removed and reclaimed.

The winter-only road option could increase the risk of unplanned closure of the mine if in some years warm weather were to make maintenance of a winter road impossible for the required time period. If mine resupply were constrained and the mine forced to temporarily close, this inability to maintain operations could lead to layoffs and loss of income for local residents.

The metrics consider local employment, population growth and infrastructure demands, long-term economic benefits if access were to be maintained, and the probability of an unplanned, temporary mine closure:

- No or low impact – High local labor participation and local settlement of nonlocal labor. No or low population growth and infrastructure demands. Long-term, unrestricted access maintained. Low probability of an unplanned, temporary mine closure.
- Moderate impact – Moderate local labor participation and local settlement of nonresident workers. Moderate population growth and infrastructure demands. Long-term, restricted access maintained. Moderate probability of an unplanned, temporary mine closure.
- High impact – Little or no local labor participation in the mine workforce or local settlement of nonresident workers. High population growth and infrastructure demands. No long-term access maintained. High probability of an unplanned, temporary mine closure.

Issue 15. Cumulative Impacts

Criterion Assess the cumulative impacts from this and other past, present, and potential developments in the area.

The cumulative impacts included in this criterion include those that are direct or indirect in concert with other past, present, or reasonably foreseeable projects. The assumption is that measurable impacts, while acceptable for this project, might not be acceptable when combined with the impacts of other projects whether implemented in the past, present, or future.

The metrics are quite subjective because cumulative project impacts are very difficult to estimate until the options of interest have been considered. These assumptions would need to be clearly defined when each value is assigned. The metrics are:

- No or low impact – No cumulative impacts, either because the impacts would be benign or the option was independent of activities of other projects.

- Moderate impact – The options, in concert with similar or other components of other projects, may produce definite environmental impacts. Typically, this would include options that affect nonrenewable resources, such as air, water supply, water quality, or infrastructure demands. Any such impacts are amenable to mitigation, although the costs of mitigation may be high.
- High impact –Compounding impacts would result from other existing projects or would be known to have a direct impact on the development of a future project that, in concert with this impact, would produce unacceptable impacts. Any such impacts are not amenable to mitigation and are unacceptable from the perspective of at least one of the stakeholder groups (public, agencies, or project investors).

Issue 16. Technical Feasibility

Criterion Minimize chances of system failure by incorporating technically feasible and operationally efficient component design, siting, and mitigating measures.

The technical feasibility of various project components must be addressed. If components become too complex or use uncertain technology, an increased risk of failure could result. Some items of specific concern are adequate system capacity and availability; the water collection, transport, and discharge system; dry tailings pile stability; recycle tailings pond (RTP) water diversion and dam failure; and adequacy of access for project materials and supplies.

Certain components for development and operation of a mining project may have technical constraints that affect the ability to implement those components. For example, topography, resource limitations, spatial relationships of one component to another, temporal relationships, or engineering knowledge for a specific option may influence the acceptability of that particular option or approach for meeting the project objectives. Issues of importance to this criterion consider the ability of a specific option to meet these challenges.

The metrics identified are based on the technical feasibility of specific options and the potential risk associated with component siting, design, operational efficiency, and mitigation:

- No or low impact – No specific engineering challenges related to meeting technical requirements.
- Moderate impact – Technically feasible, but the requirements represent a substantial challenge. Engineering and operational requirements have not been fully tested. The option evaluated may also face risks to completion as a result of unknown estimates of technical or regulatory acceptance until additional information is collected. Risk of delay or not meeting objectives is moderate.
- High impact – Substantial unknowns with respect to engineering feasibility. High risk associated with not being able to comply with technical or regulatory requirements.

Issue 17. Economic Feasibility

Criterion Consider the cost effectiveness of technically feasible and operationally efficient component design, siting, and reclamation.

If project costs exceed reasonable or practical limits, economic feasibility could become an issue. Every industrial project includes among its stakeholders those who have an investment interest in the financial success of the project. When specific conditions for meeting technical constraints, environmental restrictions, and project requirements are met, these stakeholders

have specific profit expectations to make the project feasible. If meeting the other criteria included in this evaluation means that the project would not meet those financial expectations, then that option may not be feasible for economic or financial reasons.

The metrics identified are based on the engineering and ancillary costs of project development and operation and the environmental mitigation and other costs that may be required to develop an acceptable and approved project. The metrics are:

- No or low impact – No substantive additional cost required to meet technical or regulatory requirements.
- Moderate impact – Substantial costs required to meet technical or regulatory requirements.
- High impact – Extraordinary costs required to meet technical or regulatory requirements.

A. 1.2 Options Screening

This section describes the process by which the options and sub-options identified in Section 2.4.2 (Options Development) were screened with the evaluation criteria described in Section A.1.1 (Screening Evaluation Criteria and Metrics) based on the issues identified during scoping. The purpose of screening was to reduce the large number of options and sub-options initially identified to a more manageable number that still provided a reasonable range from which to identify full project alternatives.

Evaluation Criteria Not Used for Screening

Of the 17 evaluation criteria identified during scoping, 15 were considered relevant for options screening, 1 was considered partially adequate, and 1 was considered inadequate. The partially adequate criterion was socioeconomics. The inadequate criterion, cumulative impacts, was not used during options screening because it did not possess metrics that realistically would differentiate between options. The reasons these criteria were not used, or were only partially used for options screening, are discussed immediately below. All 17 criteria, however, including socioeconomics and cumulative impacts, were used for the detailed impacts analysis of alternatives in Chapter 4.

Socioeconomic Resources Most socioeconomic issues require data collection and analysis that are not available during the screening process. Many of these issues also have complex offsetting or mitigating characteristics that are more appropriately considered during the more detailed evaluation of alternatives that occurs later in the EIS process. Also, it would not be possible to differentiate among particular options for most of the socioeconomic issues because their impacts result from the project as a whole and not from one specific component option versus another.

For the Pogo Mine project, however, options for one component, mine access, could have measurable socioeconomic consequences. The type, management, and disposition options for the two primary access options (all-season road, and winter-only access with an air access complement) could have different socioeconomic impacts and/or benefits in the Delta area. In part, the issue concerns where the mine workforce would reside. With the winter-only access option, crews could rotate on a 2-week-on, 2-week-off shift basis, presumably with many employees commuting from outside the Delta area and perhaps outside the Interior. With the

all-season road option, crews would rotate on a 4-days-on and 4-days-off basis. This more frequent rotation could encourage more local residents to work at the mine and could induce nonresident workers to settle in the Delta area rather than commute from Fairbanks or elsewhere.

Too much population growth, however, could generate an increase in infrastructure demands (e.g., housing, education, and public safety), causing an economic burden on local government.

The all-season road option also could affect other resource development in the area. If the road were open to the public and/or other new industrial or commercial uses, it could facilitate economic and population growth in the Delta area. These impacts could extend well beyond the life of the mine if an all-season road were permanently left open for public, industrial, and commercial access rather than removed and reclaimed.

A winter-only access option could increase the risk of unplanned closure of the mine if in some years warm weather were to make maintenance of a winter-only access option impossible for the required time period. If mine resupply were constrained and the mine forced to temporarily close, this interruption of operations could lead to layoffs and loss of income for local residents.

Thus, because some specific options could have socioeconomic impacts, they were screened from the socioeconomic perspective.

Cumulative Impacts After applying the metrics for this criterion to the options, it was determined that the cumulative impacts criterion was not an appropriate criterion for use in screening evaluation because the cumulative impacts of individual component options could not be realistically assessed. Rather, cumulative impacts appeared to be related more to the project as a whole. Therefore, individual options were not screened against this criterion, and cumulative impacts are discussed for each issue in Chapter 4.

Options Screening

This section describes the methods and results of applying the evaluation criteria metrics to screen each option and sub-option for all 15 project components. Screening was done by an interdisciplinary group consisting of the third-party EIS team and agency resource specialists. Values of low, moderate, and high, developed for each criterion as described above, were assigned to each issue criterion. Individual options and sub-options then either were dropped from further consideration or retained for detailed impact analysis in Chapter 4 (Environmental Consequences).

Screening was done in a three-step process.

First, a fatal flaw analysis was completed. In the second step, values were assigned based on the impact of each option and sub-option on each issue criterion. In the third step, a weight-of-evidence analysis was used to determine whether an option should be retained for detailed analysis.

For the fatal flaw analysis, a fatal flaw was defined as a condition in which an option could not meet a specific, measurable performance threshold required to obtain a particular permit or to meet a particular project objective. An example would be being able to meet a specific

discharge standard for an NPDES permit. Another example would be lack of geotechnical conditions adequate to receive approval to construct a tailings disposal facility or a mill facility.

In the second step, each option and sub-option for each of the project components was compared to the metrics for each of the 16 evaluation criteria. This comparison resulted in the assignment of low, moderate, and high impact values. In some comparisons, measurements were largely qualitative; in other cases, it was possible to quantify potential impacts.

If an option received a value of moderate or high for a particular issue criterion, the option was re-evaluated based on the use of reasonable measures to mitigate potential impacts. If it was determined that such mitigation measures would lower the impacts, the option was assigned a lower impact value.

In the third step, an option then was evaluated from an overall weight-of-evidence perspective; that is, on the basis of whether in its entirety an option was rated as being more favorable (lower level of impact) or less favorable (higher level of impact) than other options for the same component. If this comparison demonstrated that there was a more favorable option that afforded no environmental disadvantage, that more favorable option was retained and the others eliminated, unless a less favorable option possessed a particular environmental advantage for at least one issue criterion.

Because NEPA regulations require that an Applicant's proposed project be evaluated as a distinct alternative in the EIS, the options that constitute the Applicant's proposed project were automatically retained for detailed analyses as a separate project alternative (Alternative 2, Applicant's Proposed Project).

For each option and sub-option, the following sections discuss the evaluations and decisions made based on potential impacts associated with each of the 16 issue criteria. The discussions focus on options that received moderate or high values for a particular impact or that were otherwise important in determining whether an option was dropped from further consideration or retained for detailed analyses. Thus, if a particular evaluation metric did not differentiate impacts between options for a component, or if a low value was assigned, it generally is not discussed.

Summary options screening matrix The summary options screening matrix at the end of this appendix lists all components, options, and sub-options developed in Section 2.4.2 (Options Development), and presents the high (H), moderate (M) and low (L) impact ratings produced during the screening process for each of the 16 screening criteria. These screening ratings are referenced extensively in the remainder of this appendix as the screening process for each project component is described. Frequent reference to the matrix will assist a reader in following the options screening discussion.

Summary Options Screening Matrix

It is important that the reader understand that this summary options screening matrix is NOT a summary of the impacts described in Chapter 4 (Environmental Consequences). It is a summary of the impact ratings that were assigned, very early in the EIS process, to decide which options would be carried forward for detailed analysis, and which options would be dropped from further consideration. While most of the impact ratings in this matrix agree with those described in Chapter 4, during detailed impacts analysis several of the impacts in this matrix were determined to be greater or smaller than originally believed almost 2 years earlier. These findings are not surprising because during that period considerably more information became available on which to base impacts determinations. Thus, this matrix represents a "snapshot" of the screening analysis process early in the EIS process. It's primary value is in understanding why particular options were dropped and why others were carried forward for detailed analysis at that time.

Milling Process

Three options for this component were identified:

1. Whole ore cyanidation
2. Gravity / flotation / cyanide vat leach
3. Gravity/ flotation / ship concentrate off site

- For four criteria (water quality, fish, wildlife, and reclamation) the whole ore cyanidation option (Option 1) was considered less favorable than the gravity / flotation / cyanide vat leach option (Option 2). This was because this option would result in all tailings in the dry stack having been exposed to cyanide. Despite having gone through a cyanide destruction process, there still would be some cyanide left in the tailings.

  No advantage was determined for any criterion for the whole ore cyanidation option (1) compared to the gravity / flotation / cyanide vat leach option (2), except for economic feasibility.

  From the economic feasibility perspective, the whole ore cyanidation option (1) would provide approximately 1 to 2 percent greater gold recovery than the gravity / flotation / cyanide vat leach option (2); however, all tailings would be exposed to cyanide, including those to be deposited in the dry-stack tailings pile on the surface. This increased environmental risk was recognized by the Applicant, and consequently the Applicant proposed the gravity / flotation / cyanide vat leach option (2) for environmental reasons, despite the lower gold recovery. Thus, the gravity / flotation / cyanide vat leach option (2)

was retained for alternatives analysis while the *whole ore cyanidation option (1) was dropped from further consideration*.

- The gravity / flotation / ship concentrate off site option (3) would require an all-season road to transport the concentrate to a processing facility somewhere off site, either within or outside Alaska. The use of seasonal winter access, or flying out concentrate, would not be economic.

  Two major factors were analyzed in screening this option: economic feasibility and relative environmental impacts. These factors are closely related and are discussed below. The remainder of this mill process section discusses the gravity / flotation / ship concentrate off site option (3) (Teck-Pogo Inc., 2001b).

  - Regular concentrate From the economic feasibility perspective, the concentrate produced by the gravity / flotation / cyanide vat leach mill process would constitute approximately 10 percent by weight of the processed ore, or approximately 250 tons per day (tpd) at the initial ore volume of 2,500 tpd (91,250 tons per year). This volume would require approximately 3,380 trucks per year for transport off site. (Pogo does not benefit from a proximity to tidewater as do the Red Dog and Greens Creek mines in Alaska, which ship concentrate off site by marine transportation.)

    Estimated concentrate shipping costs would range from $140 to $240 per ton (see following discussion for high-grade concentrate shipping costs), or approximately $13 million to $22 million per year. These concentrate transport costs alone would constitute approximately 13 to 22 percent of projected annual gross project revenues of approximately $100 million. *Thus, off-site shipment of a regular concentrate would make the project uneconomic and it was not considered further.*

  - High-grade concentrate By modifying the mill process, however, it would be possible to produce a higher grade of concentrate that would reduce the tonnage to be shipped off site from approximately 10 percent by weight of processed ore to approximately 3 percent (27,375 tons per year). This mill process would reduce gold recovery by approximately 2 percent. The high-grade concentrate, however, would contain approximately 5 percent by weight of arsenic that could require special handling, shipment, and disposal procedures. This scenario would reduce the number of trucks by 70 percent to 1,015 per year. The issue of where to ship the high-grade concentrate then arises.

  - Unspecified Alaska facility This option requires identification of a suitable location for processing and permanent storage of the concentrate tailings within Alaska. This process would raise the same environmental and economic issues that are already being addressed at the Pogo Mine site. While it might be technically and politically feasible to permit, construct, and operate an independent concentrate processing and tailings disposal facility elsewhere in Alaska, it would appear to be more environmentally responsible to deposit the tailings underground in the same location from which they came. Hauling concentrate from the Pogo Mine to some other Alaska processing site, and then hauling the concentrate tailings back to Pogo for deposition in the mine, would not make economic sense, and would increase the probability of handling or transportation accidents, especially in winter. Also, there is no reason to expect that operating risks from leaching the concentrate would be any greater at the Pogo Mine than at another Alaska site. Thus, processing and disposal at another Alaska site was not considered further.

Two options Outside Alaska were reviewed for processing high-grade concentrate: shipping to a new leaching facility in British Columbia or to existing smelters.

- British Columbia facility An existing Teck-Cominco site at Afton, B.C., was used as a hypothetical case for cost estimation for a leaching facility. It is located near the rail system in a historic mining area where a tailings facility could be permitted more readily and where there might be some infrastructure available to support construction and operation of a new concentrate leaching facility.

  Transporting the concentrate directly to Afton by truck (approximately 2,000 miles) in 1.5- to 2.0-ton Supersacks appeared to be the most environmentally feasible method and would minimize concentrate losses compared to bulk container or bulk truck/rail combinations. In order to optimize the economics under this option, it was assumed that cement and grinding balls necessary to support the mine would be procured in B.C. and backhauled to Pogo on the same trucks. The transport costs were estimated at $140 per ton, or $3.8 million per year. Including the 2 percent gold recovery loss to achieve the high-grade concentrate, this option would cost approximately 6 percent of gross revenues.

- Existing smelters The high arsenic content of the concentrate would limit the number of smelters in the world that would accept the concentrate for refining. These smelters would accept the product, but would impose a net smelter penalty of approximately 2 percent. Two smelters that could process Pogo high-grade concentrate were considered: Noranda in Quebec and Dowa in Japan.

- Transporting to Noranda, Quebec, was evaluated under three scenarios: 1) Supersacks inside shipping containers via truck to Valdez, then barge to Seattle, rail to Montreal, and truck to Noranda; 2) as in 1 above, except all truck from Seattle to Noranda; and 3) Supersacks trucked to Fairbanks, loaded into rail boxcars, then shipped by rail, barge, and finally by rail to Noranda. These transport costs were estimated at $240 to $340 per ton.

- Transporting to Dowa in Japan was evaluated under two scenarios: 1) Supersacks trucked to Valdez, barged to Stewart, B.C., and loaded on top of concentrate from another mine on an ocean freighter already bound for Japan; and 2) Supersacks inside shipping containers, trucked to Valdez, barged to Vancouver or Seattle, and then shipped independently to Japan. The transport costs were estimated at $200 to $210 per ton.

  Under the cheapest smelter option of $200 per ton, transportation costs would be approximately $5.5 million per year. Including the 2 percent gold recovery loss to achieve the high-grade concentrate, and the 2 percent smelter arsenic penalty, the least expensive smelter option would cost approximately 9.5 percent of gross revenues.

Environmental considerations The major environmental benefit of shipping concentrate off site would be elimination of risk from cyanide leached tailings being placed underground, and the related reduced potential for acid rock drainage and metals leaching. There would be some additional environmental benefits in that there would be a reduced need to transport reagents to the mine site, including 200 tons of cyanide annually. This reduced transport need would equate to approximately 8 trucks per year that would not be required for cyanide transport, and an additional approximately 125 trucks that would not be required to transport the lime and other reagents used in

leaching, gold recovery, and cyanide destruction. These approximately 133 fewer trucks would compare to the approximately 1,015 additional trucks that would be required for shipping concentrate off site, for a net increase of approximately 880 trucks per year. This increased truck volume could cause a substantial impact on the existing Shaw Creek Road if this Richardson Highway egress sub-option were selected. Also, the size of the above-ground dry-stack tailing pile would be reduced approximately 4 percent in volume.

These project area benefits, however, would result in impacts to other areas. They would result in an unknown level of impacts elsewhere along the transportation route to, and at, a processing facility, such as additional road traffic (more than 1,000 trucks per year on the Alaska Highway to southern B.C.), spill risk, the same cyanide processing risk, and the impacts of constructing and operating leaching and tailings disposal facilities.

Another environmental factor to consider when evaluating off-site concentrate shipment is the risk associated with handling many shipments of the fine, dry, concentrate with high arsenic content across thousands of miles via several different modes of transport, and the handling risks and procedures at each transfer point.

Applying the non-economic evaluation criteria only to the project area (i.e., ignoring environmental impacts outside the project area discussed above), all five criteria for which a differential impact was determined (wildlife, noise, safety, existing private lands and recreational uses, and subsistence) rated the off-site option as being less favorable than the gravity / flotation / cyanide vat leach option (2).

Economic considerations The direct economic impact to the project from off-site concentrate processing would be between approximately 6 and 9.5 percent of annual gross revenues. While potentially manageable, this cost would have an adverse impact on the viability of the project. The degree of impact cannot be determined with reasonable certainty because it is largely tied to the future price of gold, which is a highly variable commodity. The project would not be able to weather fluctuations in the gold market, however, as well as it could if it did not have to bear these added costs. Disruptive periods of temporary closure would be more likely during gold price declines, thereby directly affecting local workers. Temporary shutdowns that might involve environmental management issues would be more likely during the mine life. The ability of the project to address other issues that might arise during the mine life could be compromised. Also, a major Alaska issue of long standing has been local value-added processing of raw natural resources rather than shipping them out of state. Off-site processing would export jobs from Alaska.

Summary Shipping a high-grade concentrate off site for processing would have the advantage of eliminating the on-site risk from cyanide leaching of the underground tailings, and would reduce the reagents needed for that process and for cyanide destruction. It would, however, require an all-season road and a net increase of approximately 880 truck trips per year, or an increase of approximately 40 percent more trips than for the on-site processing scenario. It would cause an unknown level of impacts elsewhere along the transportation route to, and at, a processing facility (additional traffic, spill risk, the same cyanide processing risk, and impacts of a tailings disposal facility). Five evaluation criteria rated this option as less favorable than on-site concentrate processing.

The direct economic impact to the project would be between approximately 6 and 9.5 percent of annual gross revenues, which would have an adverse but unknown impact on the viability of the project because of the highly variable price of gold. If the added cost caused temporary closures, workers would be affected, and environmental management issues could arise.

It would appear, therefore, that an argument for off-site processing can only be made if the underground mine at the Pogo Mine site is not considered to be the most environmentally responsible site to place the tailings, and if the processing of concentrate at the Pogo Mine site is considered to present a risk high enough to offset the economic and other environmental impacts of off-site processing. The Applicant, however, has proposed a mill process that minimizes the use of cyanide, uses a long-proven cyanide destruction process, and would place all tailings that do contact cyanide back underground in the mine workings from which the ore originally came. All of these processing activities would be done with a state-of-the-art facility. The Fort Knox Mine near Fairbanks, which processes approximately 15 times more ore with a cyanide leaching system than would the Pogo Mine, has operated without incident for 6 years. Fort Knox uses whole ore cyanidation and processes approximately 40,000 tpd through a sulfur dioxide and air cyanide destruction process. The Pogo Mine would first use flotation to produce a smaller volume of concentrate (approximately 250 tpd) and then would process the concentrate through the sulfur dioxide and air process.

There appears to be no reason, therefore, to conclude that on-site processing of concentrate would have greater environmental impacts than processing off site. *Thus, there appeared to be no substantial environmental advantages from off-site processing, and this option was not carried forward for alternatives analysis.*

Tailings Disposal

Because the tailings disposal component, and the following mill and camp location component, were inextricably linked to the location of the ore body, and to each other, screening required a coordinated analysis of all three components. Because the location of the ore body is fixed, environmental and technical factors somewhat limited the scope of the screening analysis. A more detailed discussion of the technical aspect of the screening analysis for the tailings disposal and mill site and camp components may be found in Metz (2000). An abbreviated discussion follows.

The tailings disposal component had two subcomponents: type of disposal and disposal location.

Disposal type This subcomponent had three options:

1. Underground as a paste backfill in the mine
2. Surface dry-stack disposal / RTP using dewatered tailings
3. Traditional surface disposal of wet tailings behind an impoundment structure

In addition to the obvious advantages of reducing the volume of tailings to be disposed of on the surface, placing the sulphide-containing concentrates underground where acid rock drainage and metals leaching could be better controlled, and providing needed structural support in the mine to allow continued mining, *underground disposal was retained because it was the Applicant's preferred option.*

Analysis of traditional options for wet tailings disposal and dry-stack tailings disposal indicated that each method possessed certain advantages and disadvantages, and that both methods

could be feasible from environmental, technical, and economic perspectives. It was determined that the characteristics of the physical location of a given disposal option, however, would be the most important factor in determining which disposal type options would be retained for further analysis. The following discussions of the subcomponent for tailings disposal location and the component for mill and camp location, therefore, frequently reference the interdependency of these components.

- The surface dry stack / RTP option had four sub-options for a tailings facility liner:
    1. Lined dry stack
    2. Lined RTP
    3. Unlined dry stack
    4. Unlined RTP

Because technical data were not available during the screening process to determine whether a liner would be needed, *all four sub-options were carried forward for detailed analysis of alternatives.*

The *traditional options for wet tailings placement was not retained for further analysis* because, as discussed below under disposal location, the locations for this option either were technically deficient, or locations for a surface dry stack / RTP option were superior for other reasons.

Disposal location Thirteen options for tailings disposal sites in the mine vicinity were identified for this subcomponent, as well as one generic off-site location outside the project area (Figure 2.4-1). In addition, a separate tunnel option under the Goodpaster River that might address concerns with surface tailings transfer to a tailings disposal site on the west side of the Goodpaster was identified.

Seven sites were on the west side of the Goodpaster River, proximate to a “lower mill and camp site” located approximately 1 mile west-southwest of the ore body. Six sites were on the east side of the Goodpaster, proximate to an “upper mill and camp site” located over the ore body. A third location for the mill and camp site was on the valley floor near the existing development camp where Pogo Creek enters the Goodpaster River. All tailings disposal sites were within 5 miles of the Pogo ore body.

From a wetlands perspective, there was no site that reasonably could be considered for tailings disposal within a radius of five miles of the ore body that did not include wetlands. Sites beyond that distance were not investigated because in addition to technical and economic considerations, the length of roads that would have been necessary to access such sites would have themselves impacted substantial areas of wetlands and likely required one or more additional stream crossings and impacts to other drainages.

- Each of the seven disposal sites west of the Goodpaster River was rejected from a technical feasibility perspective as having seriously difficult foundation conditions for dam design, more difficult access problems from the mill complex, or higher risk as determined from the consequences of a failure of the tailing delivery system. The lower mill and camp site associated with these disposal options, as discussed below, also suffered on geotechnical grounds. Also, developing a disposal site and mill and camp complex west of the river would dramatically spread project facilities to both sides of the valley, substantially increasing impacts to many other resources.

- An option related to, but separate from, the disposal location component was whether a tunnel under the Goodpaster River for moving either ore or tailings from the mine to a

mill or tailings disposal site on the west side of the river might address some of the impacts associated with a surface crossing of the river, and thereby make analysis of the west side mill or tailings disposal sites more favorable. Even ignoring the technical deficiencies described above for the west side disposal sites, and those below for the west side and valley bottom mill and camp sites, the tunnel option still was dropped from further consideration. Not only did it fail to demonstrate any more favorable advantages for any of the issue criteria, but the water inflow to the tunnel would very substantially increase water management problems and result in a considerable increase in the volume of mine water that would have to be discharged. *This substantial increase in discharge was considered a fatal flaw.*

- Six sites were located on the east side of the Goodpaster River (Figure 2.4-1).
  - Site 1 was located approximately 5,000 feet (ft) from the ore body at the head of Liese Creek Valley. The site met all requirements for both conventional slurry and paste/dry-stack systems for tailings disposal, but showed a higher potential as a site for the use of the paste/dry-stack system. The only technical concern at this site was the construction of a water diversion system on the south side of the creek valley where talus deposits exist on the upper slopes.
  - Site 6A was located on lower West Creek approximately 18,000 ft from the ore body. *It was rejected largely on technical grounds* due to the presence of potentially unstable permafrost and foundation problems. Additionally, the site presented difficult access, high spill risk, a large rainfall catchment area, and substantial problems associated with the construction and operation of an adequate diversion system for surface runoff.
  - Site 6B was located on upper West Creek approximately 17,000 ft from the ore body. *It was rejected because of difficult access from the upper process site and potential concerns with seepage control and seismic stability*.
  - Site 6C was located near the head of West Creek approximately 16,000 ft from the upper mill and camp site. The site met all requirements for systems of both conventional slurry and dry-stack tailings disposal, but showed a higher potential as a site for use of the paste/dry-stack system. The concerns identified for this site included a somewhat difficult access and a relatively high spillage risk. Still, this site produced the highest overall technical score for all sites evaluated.
  - Site 9 was located in Sonora Creek approximately 25,000 ft from the ore body. This site was similar to Site 6C and was technically acceptable, but had more difficult access and a high spillage risk due to the much greater distance from the ore body.
  - Site 10, at the Tabletop location above and east of Liese Creek Valley, was approximately 9,000 ft from the ore body. In addition to being predominantly wetlands, it contained a *technical fatal flaw and was rejected* because of insufficient storage volume. It also possessed poor aesthetics (visual impacts) as well as a high spillage risk.

Thus, three sites on the east side of the Goodpaster River were considered technically feasible for tailings disposal: 1 (Liese Creek Valley), 6C (upper West Creek), and 9 (Sonora Creek). Sites 6C and 9 were relatively similar technically, with neither being technically more favorable than the other. Site 9, however, was 9,000 ft farther from the ore body. This site would be more difficult to access, be a considerable distance to pump

tailing slurry, and substantially increase the overall project's footprint. Also, traditional wet-tailings disposal did not appear to offer any more favorable advantage over dry-stack disposal. *Thus, because no advantage was seen for Site 9 over Site 6C, the former was dropped from further consideration*.

Sites 1 and 6C then were screened in detail by using the issue screening criteria. For all but three criteria, there were no reasonable differences between the options. For three criteria (water quality, wildlife, and existing recreational activities), Site 6C was judged less favorable. From the water quality perspective, this site would introduce impacts to an additional drainage not otherwise affected by the project. For the wildlife criterion, it would increase substantially the mine area facilities' footprint and affect another drainage. From the perspective of recreational users, this site would be substantially more visible than Site 1 from much longer stretches of the Goodpaster River. In addition, Site 6C would require approximately 3.5 miles of access road that would create more surface disturbance and risk of spillage during hauling. For its part, Site 6C itself did not possess any clearly more favorable advantages over Site 1, which was much closer to the ore body. *Thus, Site 6C was dropped from further consideration*, and *Site 1 was retained for detailed alternatives analysis*.

The final disposal option was at an unknown location outside the project area. This option was discussed above in conjunction with the mill process option of shipping concentrate off site, and was *dropped from further consideration*.

Mill and Camp Location

Six sites for this component were identified (Figure 2.4-1):

1. On the Goodpaster River valley floor immediately west of the ore body below the existing 1525 Portal (Site 1)
2. In the saddle on upper Pogo Ridge southeast of the ore body (Site 3) (there was no site 2)
3. On Pogo Ridge almost immediately above the ore body (Site 4)
4. On the west side of the Goodpaster River somewhat more than 1 mile west-southwest of the ore body (Site 5)
5. In Liese Creek Valley (Site 6)
6. A generic location outside the project area

From an operational and construction point of view, it is preferable that the mill and tailings disposal sites be remote from environmentally sensitive areas, close to the mine and to each other, and of sound geotechnical foundations. An important screening factor for this component, therefore, was the selection of suitable tailings disposal sites. As discussed earlier, all *seven disposal sites on the west side of the Goodpaster River were rejected on technical grounds*. Also, geotechnical drilling at mill and camp Site 5 west of the river confirmed the presence of a deep deposit of ice-rich silt that would cause adverse foundation conditions. Thus*, mill and camp Site 5 on the west side of the river was dropped from further consideration*.

The most complex issue to overcome in process plant siting is the use of paste backfill in the mine as both part of the mine development plan and to reduce surface disposal volumes of

tailings. The high density of paste backfill makes it difficult to pump a paste backfill over horizontal distances exceeding several thousand feet, and usually precludes pumping to higher elevations. Design criteria for paste backfill systems usually include location of the paste backfill plant a substantial vertical distance above the mine being filled in order to provide natural gravitational head to assist in paste tailings distribution. Thus, Sites 3, 4, and 6, each above the ore body, had a substantial technical advantage over Option 1 on the Goodpaster Valley floor.

The Goodpaster Valley floor Site 1, however, offered lower project capital costs because it would use the existing exploration adit and there would be no need to construct other shafts. Use of this site, however, would require hauling or pumping ore and/or tailings either across the Goodpaster River to the technically less favorable west side disposal sites or up to the head of Liese Creek Valley (tailings) and a point above the ore body (paste backfill). Shaft access from a site above the ore body, however, would avoid a river crossing, or the need to haul ore and pump tailings to an elevation well above the ore body. In addition, Site 1 had higher impacts for several issue criteria because of its valley floor location (water quality, wetlands, fish, wildlife, reclamation, existing recreational uses, and technical feasibility). Also, this option did not offer any more favorable advantages with respect to any of the issue criteria other than possible economic feasibility. Thus, *mill and camp Site 1 was dropped from further consideration.*

Three mill and camp sites (3, 4, and 6) were located at a higher elevation than the ore body (Figure 2.4-1). Site 4 was immediately adjacent the edge of the ore body. This proximity would provide a clear advantage for minimizing ore and tailings hauling distances. From a water quality perspective, however, Site 4 was at a distinct disadvantage. A road up Liese Creek to access Site 4, which would be higher than the RTP and the tailings dry stack, would substantially increase the area that would drain to the RTP. Additionally, the drainage area between Site 4 and Liese Creek would contribute to the overall drainage area. Modeling showed that precipitation and snowmelt from this drainage area, coupled with fluctuations of the water level in the RTP could, under certain conditions, cause the RTP to overtop its dam and discharge untreated water directly into Liese Creek (Teck-Pogo Inc., 2001d). While such an event is always a possibility, the modeling showed this type of discharge could happen as frequently as once a year. *This possibility was unacceptable from a regulatory perspective; therefore, Site 4 was dropped from further consideration.*

Site 3 on upper Pogo Ridge was approximately 7,000 ft from the ore body. When compared to Site 6 in Liese Creek, both sites were rated the same for all screening criteria except two. For wildlife, Site 3 was considered to have a greater impact because it would expand the project footprint by over a mile, while for recreational use, Site 3 was considered to have a greater impact because it would be more visible to Goodpaster River recreational users. Also, Site 6 was substantially closer to the ore body and therefore would minimize the combined underground/surface haulage and conveying distances from the ore body to the mill, as well as the haul distance to the dry stack tailings pile. In addition, Site 6 would require substantially shorter and more direct return water lines from the RTP, lowering both the cost and risk of water transport, and it would allow for shorter freshwater supply lines. It also would limit impacts only to the Liese Creek drainage. Site 3 did not offer any such clear advantages for any criterion. *Thus, Site 3 was dropped from further consideration, and Site 6 was retained for detailed alternatives analysis.*

The sixth mill site option was at an unknown location outside the project area. *This option was discussed and eliminated above in conjunction with the mill process option of shipping concentrate off site.*

Development Rock Disposal

Two options for this component were identified:

1. Encapsulate mineralized development rock in the dry stack tailings pile in upper Liese Creek Valley (Figure 2.3-1e)
2. Use nonmineralized development rock as construction material for roads, pads, and the RPT dam, or encapsulate it also in the dry-stack tailings pile.

All screening criteria considered both options to have no or low impacts. Both were the Applicant's options; therefore, *both were retained for detailed alternatives analysis*. No other options for this component were identified.

Gravel Source

Two options for this component were identified.

1. Existing or new gravel pits on the Goodpaster Valley floor an in Liese Creek Valley would be used. An existing gravel pit below the 1525 Portal would be expanded (Figure 2.3-1a), with new gravel pits developed at the 3,000-ft airstrip (Figure 2.3-1b) and adjacent to the access road on the west side of the Goodpaster River (Figure 2.3-1). Three material sites would be developed in Liese Creek Valley (Figures 2.3-1b and 2.3-1e).
2. In the second option, nonmineralized development rock that otherwise would be encapsulated in the dry tailings stack would be crushed to produce gravel.

Option 1 was rated as no or low impact for all but two criteria. For both wetlands and wildlife, it was rated as having greater impacts. The second option was rated as no or low impact for all criteria except economic feasibility, for which it was rated as a high impact.

Both options were retained for alternatives analysis. The first because it was the Applicant's proposed option, and the second because it offered advantages for two criteria because it would provide a gravel source from otherwise unused development rock and would not require expanding existing, or developing new, borrow sites.

Construction Camp Location

Only the Applicant's proposed option was identified. This option would place the 200-person construction camp for approximately 2 years at the site of the existing exploration camp below the 1525 Portal in the Goodpaster Valley (Figure 2.3-1a). For all screening criteria, this option was considered to have no or low impacts. *This option was retained for alternatives analysis*.

Laydown Areas

Two options for this component were considered.

1. In the first, permanent laydown areas would be built on the Goodpaster Valley floor below the 1525 Portal (Figure 2.3-1a) and adjacent to the airstrip (Figure 2.3-1b). A smaller permanent laydown area also would be built at the mill site in Liese Creek Valley (Figure 2.3-1c). After construction, the site below the 1525

Portal and airstrip laydown site would be reduced in size to accommodate the lowered operational phase needs.

2. In the second option, an expanded laydown area for operations would be built at the mill site in Liese Creek Valley, and the 1525 Portal and airstrip laydown areas on the Goodpaster Valley floor would be fully reclaimed after construction.

Analysis showed only one criterion for which there was a difference between the options. From the technical perspective, the steep nature of Liese Creek Valley would make creating a large laydown area at the mill difficult, requiring excavation of a substantial volume of material from the valley side. Because of the steepness of Liese Creek Valley, the fact that the necessary construction of the temporary laydown areas on the Goodpaster Valley floor already would have caused surface disturbance, and because these laydown areas would be reduced in size after construction to meet the lowered space requirements of the operational phase, *the second option was dropped from further consideration, and the first option was carried forward for analysis* in Chapter 4.

Power Supply

Two options for this component were identified:

1. Power line
2. On-site generation

For eight of the ten criteria for which differential impacts were identified between these two options (water quality, fish, wildlife, noise, new industrial and commercial uses, recreational resources and uses, subsistence, and socioeconomics), the power line option was deemed to have fewer impacts. For two criteria (wetlands and existing privately owned lands and recreational activities), however, the power line option was expected to produce greater impacts because of the need for a power line. *Both options, therefore, were retained for detailed alternatives analysis*; the first because it was the Applicant's preferred option, and the second because it offered a more favorable advantage for two of the issue criteria.

Water Supply

This component had two subcomponents: industrial water supply and domestic water supply.

Industrial water supply Four options were identified for this subcomponent:

1. Mine drainage
2. RTP
3. Wells
4. Goodpaster River

The use of one source of water over another would not in itself have a direct impact on ground water or surface water quality because all discharges would have to meet water quality standards. By using the poorer quality water sources first in the mill process, however, there would be less need to treat the poorest quality water to meet discharge standards. The Applicant's strategy, thus, was not an either/or situation, but rather a hierarchy of use for industrial purposes.

For all screening criteria except one, the use of water from any of the four water source options was considered to have no or low impact. From the fish and aquatic habitat criterion perspective, potential for dewatering the Goodpaster River during the winter months in a low-flow year and entrapment of fry would be possibilities, although the latter could be mitigated by proper design. From the other perspective, the Goodpaster River option did not appear to offer any more favorable advantages over the other three options, which were judged adequate to supply the project's water needs. *Thus, the Goodpaster River was dropped from further consideration as an industrial water supply source*.

Domestic water supply Two options were identified for this subcomponent:

1. Wells
2. Goodpaster River

Screening for this subcomponent produced identical results as for the industrial water supply subcomponent above. For all screening criteria except one, the use of water from the Goodpaster River was considered to have a no or low impact. From the fish and aquatic habitat criterion perspective, however, potential would exist for dewatering during the winter months in a low-flow year. Wells in alluvial gravels, historically, are able to supply up to several hundred gallons per minute and offer reliable year-round service without flood, icing, sediment, fish entrapment, or biological problems. Use of the Goodpaster River option did not appear to offer any more favorable advantages over the use of wells. *Thus, the Goodpaster River option was dropped from further consideration as a domestic water supply source*.

Water Discharge

This component had two temporal phases: the project's development phase and the operations phase.

Development phase This phase had three discharge options for treated wastewater:

1. Underground injection wells
2. Direct discharge to the Goodpaster River
3. Off-river treatment works

For all screening criteria except two, treated water discharge to either a cased, bored well or to the Goodpaster River was considered to have no or low impact. From the fish and aquatic habitat criterion perspective, the Goodpaster River option would pose a greater risk to aquatic resources due to the possibility of process upsets and facility failures. There also could be bioaccumulation of trace metals in fish and other aquatic organisms. From the technical feasibility perspective, however, there were outstanding issues about an increase in discharge volume to an underground well during development, and at what point such an increased volume would in effect become a *de facto* direct discharge to the Goodpaster River.

For all but three screening criteria, water discharge from an off-river treatment works was considered to have no or low impacts. For the wetlands and wildlife criteria, this option was considered to have moderate impacts because of habitat disturbance on the valley floor. For the fish and aquatic habitat criterion, this option was considered to have a low to moderate impact because of the risk of failure during extreme winter conditions, which would coincide with low flows in the Goodpaster River. This option, however, could address the regulatory concerns associated with the underground injection and direct discharge to the Goodpaster options. Thus, because each discharge option offered an advantage over the other, *all three options were retained for alternatives analysis*.

Operations phase This phase had two subcomponents:

1. Excess industrial wastewater discharge from the RTP
2. Domestic wastewater discharge

Industrial wastewater (from RTP) This subcomponent had five options for treated wastewater discharge: discharge into constructed wetlands at the existing borrow pit below the 1525 Portal in the Goodpaster Valley; discharge to an engineered soil absorption system (SAS); underground injection to a bored / cased well; treatment and direct discharge to the Goodpaster River; and an off-river treatment works.

- Constructed wetlands For all screening criteria, except one, this option was considered to have no or low impacts. For the technical feasibility criterion, while evidence from some mining operations shows these systems offer good attenuation capabilities, it takes time to establish wetland systems, they are not proven in interior Alaska climates, and it is more difficult to demonstrate attenuation capabilities with these systems then for an engineered SAS that can be designed and constructed to given specifications and tested in the laboratory. For these reasons, and because it did not offer any clear advantage over the SAS option, this option was *not retained for further consideration*.

- Soil absorption system For all screening criteria, this option was considered to have no or low impacts. Given the same treatment plant and same water discharge as the underground injection option, an SAS would offer treatment for ammonia, nitrate, and cyanide if any were present, and even some metals removal. A compliance issue exists, however, because the Applicant has applied for an NPDES permit and not a UIC permit. Because discharges under NPDES are usually measured after all treatment, how discharge monitoring under an NPDES permit would occur with an SAS has not been determined. Because this was the Applicant's preferred option, it was *retained for further analysis*.

  - Soil absorption system location The SAS option had three sub-options for location: in the Goodpaster Valley adjacent to the airstrip (Figure 2.3-1b), in middle Liese Creek Valley, and in the saddle above and southeast of the mill site on Pogo Ridge accessed by a spur road. Geotechnical drilling at the middle Liese Creek Valley site revealed discontinuous permafrost in poorly drained soils; therefore, *this sub-option was dropped from further consideration.*

    For all screening criteria, except one, the Goodpaster Valley sub-option was considered to have no or low impacts. For the wildlife criterion, this sub-option was considered to have moderate impacts because of higher value wetlands and habitat on the valley floor than at the higher elevation in the saddle on Pogo Ridge. For all screening criteria, except one, the saddle above and southeast of the mill site on Pogo Ridge was considered to have low or no impacts. Only for the technical feasibility criterion choice was considered to have a moderate impact because of a less predictable hydrogeologic regime. *Thus, both remaining sub-options were retained for alternatives analysis;* the former because it was the Applicant's proposal, and the latter because it offered advantages for the wetlands and wildlife criteria.

- Underground injection wells This option would discharge underground into a bored / cased well (Figure 2.3-1a). For all screening criteria, except one, this option was considered to have no or low impact. For the technical feasibility criterion, the impact was considered to be moderate because the option offered no potential for attenuation, and there was a question concerning the ability of the well to absorb the potential

quantity of water. Because a UIC permit would require monitoring of the discharge prior to injection, this option could address the monitoring compliance issue described above for the soil absorption option. *This option was retained for further analysis* because it was the Applicant's preferred option.

- Direct discharge to Goodpaster River For all screening criteria except one, water discharge under this option scenario was considered to have no or low impacts (Figure 2.3-1a). From the fish and aquatic habitat criterion perspective, the Goodpaster River option would pose a greater risk to aquatic resources due to the possibility of process upsets and facility failures. The proposed discharge location, however, is not in a spawning area. There also could be bioaccumulation of trace metals in fish and other aquatic organisms. Also, there is a regulatory compliance risk to the company. The discharge location would not be in a spawning area, but water quality standards prohibit mixing zones in spawning areas. Permitting a direct discharge to surface waters, however, is a management method with which EPA's NPDES program is very familiar, compared to the Applicant's proposed SAS. To maintain maximum flexibility, therefore, *this option was retained for further analysis*.

- Off-river treatment works For all but two screening criteria, water discharge under this option was considered to have no or low impacts. For the wildlife criterion, this option was considered to have moderate impacts because of habitat disturbance on the valley floor. For the fish and aquatic habitat criterion, this option scenario was considered to have a low to moderate impact because of the risk of failure during extreme winter conditions that would coincide with low flows in the Goodpaster River. This option, however, could address the regulatory concerns associated with the SAS and options with direct discharge to the Goodpaster by obviating the point of compliance and mixing zone near spawning habitat issues, respectively. Thus, *this option was retained for further analysis*.

Domestic wastewater This subcomponent would use a package treatment plant with two discharge options: treatment and discharge to an underground drain field or treatment and direct discharge to the Goodpaster River.

- Underground discharge For all but one of the criteria, the generic use of an underground drain field rated no or low impacts. For the water quality criterion, the impact was rated high because of a substantial risk of not obtaining a discharge permit because the effluent would not meet water quality standards before discharge to the drain field.

  This option had two sub-options for location of the drain field:

  - Discharge from the permanent Liese Creek Valley camp and mill to a permanent drain field on the Goodpaster River Valley floor near the mouth of Liese Creek, and

  - Discharge of effluent to a temporary drain field on the south-facing side-slope below the camp in Liese Creek Valley. Then, during operations, treated effluent would be piped through the mine to the permanent drain field on the Goodpaster Valley floor, which was originally built for temporary use by the construction camp during the development phase.

  For all criteria except two, the first sub-option rated no or low impacts. For wetlands and wildlife, however, the valley location was considered to have a moderate impact because of higher value wetlands and habitat on the valley floor than at the

temporary drain field site at higher elevation adjacent to the mill and camp in Liese Creek Valley.

The second sub-option was rated for all criteria as having no or low impact because the previously installed drain field at the construction camp below the 1525 Portal would be used on a permanent basis during operations, rather then having to construct a new drain field on the valley floor, as in the first option, or to continue use of the temporary drain field in more marginal soils adjacent to the Liese Creek camp. Thus, the second sub-option was considered superior to the first.

- Discharge to Goodpaster River For all screening criteria except one, water discharge under this option scenario was considered to have no or low impacts. From the fish and aquatic habitat criterion perspective, impacts were rated locally moderate because of potential treatment facility failures. The discharge, however, would contain conventional pollutants with a low probability of bioaccumulation of trace metals.

  In final analysis, because of the substantial risk of not obtaining a discharge permit for the option of underground drain field discharge, and because package treatment technology is well understood and reliable in proper conditions, the *underground discharge option was dropped from further consideration* and the *treatment and direct discharge to the Goodpaster River option was retained for further analysis*.

Fuel Supply and Storage

This component had two subcomponents: fuel supply and fuel storage. For both subcomponents, the screening evaluation focused primarily on the risk of spills and the severity of their impacts. This focus on spills was important because the risk of spills from hauling large quantities of fuel was a key factor in evaluation of the project's access type and route discussed later.

Supply route This subcomponent had three options: all-season road access, winter-only access, and air access.

- All-season road versus winter-only access (winter road or trail) While inextricably related to the surface access component discussed later, the all-season and winter-only access fuel supply route options were evaluated from the perspective of just how fuel would be supplied to the mine site. In other words, any impacts attributed to an all-season or winter-only access option that were not directly related to transport of fuel were ignored. For all eight issue criteria for which differential impacts were identified between these two options (water quality, wetlands, fish, wildlife, noise, safety, new industrial and commercial uses, and technical feasibility), greater impacts were found from use of a winter-only access option for fuel supply. The primary basis of concern for four of the criteria (water quality, wetlands, fish, and wildlife) was the substantially increased risk of a fuel spill occurring in or near a waterway, considering the routes of the winter-only access options, and the severe daylight and temperature constraints that exist in winter.

  From the perspective of the noise criterion, the intensive 8- to 10-week fuel haul would have greater impacts than a year-round resupply effort. For the safety criterion, the winter-only access option was considered to have high impacts due to the increased likelihood of accidents because of extreme cold and darkness. From the perspective of the new industrial and commercial uses criterion, winter-only access would not be as

useable as an all-season road, and technical feasibility impacts were considered greater because of the difficulties of moving a large volume of fuel during a short period in very low temperatures and light conditions. Thus, the winter-only access fuel supply option was judged to be substantially less favorable than the all-season road option.

All-season road routes From the perspective of specific route sub-options for the all-season road, differential impacts were identified between the Shaw Creek Hillside and the South Ridge routes for three criteria: wetlands, fish and wildlife. In all cases, the Shaw Creek Hillside route was considered to have potential for greater impacts because it crosses more waterways and generally more important wildlife habitat than does the South Ridge route.

Winter-only access routes From the perspective of specific winter-only access route sub-options, differential impacts were identified between the Shaw Creek Flats and the Goodpaster Valley routes for five criteria: water quality, wetlands, fish, wildlife, and technical feasibility.

In all cases the Goodpaster Valley route was considered to have potential for greater impacts because it makes nine crossings of the Goodpaster River while the Shaw Creek Flats route only makes two crossings of Shaw Creek and one of the Goodpaster.

From the perspective of the first four of those five criteria, the primary issue was the increased risk of a spill occurring on or near a waterway. From the perspective of technical feasibility, the construction and maintenance of a winter ice road or perennial winter trail and ice bridges are difficult, especially if unpredictable weather and snow conditions are a factor. Thus, because the Goodpaster River route would have nine crossings, versus only three for the Shaw Creek Flats option, the former was considered to have a higher impact.

- Air access Screening for the air fuel supply option showed no or low impacts for all but four criteria. Moderate impacts were predicted for the noise, safety, and technical criteria while a high impact was predicted for the economic feasibility criterion.

Because the subcomponent for the fuel supply route is dependent on the entire project access system that is ultimately selected, *none of these three fuel supply sub-options discussed above could be dropped on the basis of this analysis alone*. This fuel supply subcomponent, however, is a very important part of the overall project access component, and the results of this screening analysis described immediately above weighed heavily in the overall screening analysis of project access described later.

Storage location This subcomponent had two options:

1. The first would construct temporary diesel storage tanks on the Goodpaster Valley floor below the existing 1525 Portal (Figure 2.3-1a) and adjacent to the airstrip (Figure 2.3-1b). Smaller, permanent fuel storage would be built at the mill in Liese Creek Valley (Figure 2.3-1c), and at the mouth of the 1525 Portal above the valley floor (Figure 2.3-1a). After the construction phase, all diesel storage would be removed from the Goodpaster Valley floor.
2. The second option would be the same, except there would be no permanent diesel storage at the mouth of the 1525 Portal above the valley floor.

Potential impacts from this component were related to the temporary fuel storage on the valley floor for the approximately 2 years of construction. Because such temporary fuel storage

would occur with both options, the issue for this component was only whether a permanent, 5,000-gallon diesel fuel storage tank would be maintained during operations at the mouth of the existing 1525 Portal in addition to the permanent fuel storage facilities at the mill. This relatively small storage tank, which would be inside a bermed, lined pit immediately adjacent to other equipment on the pad at the mouth of the 1525 Portal, would be approximately 200 ft above, and 1,400 ft from, the Goodpaster River. For all resources, permanently maintaining a storage tank at this location was considered to have no or low impacts. Because this was the Applicant's preferred option, and because the second option did not offer any advantages, *the first option was carried forward for alternatives analysis*.

Surface Access

This component had four subcomponents: type of access, access route, management of that access, and ultimate disposition of the access system at mine closure.

Type This subcomponent had three options: all-season road, winter-only access, and a railroad.

- 1 & 2 All-season road and winter-only access Generically screening the all-season and winter-only access options was difficult because impacts varied across evaluation criteria depending on which of the other subcomponent options (route, management, and disposition) were considered. Generally, however, an all-season road was considered to have fewer impacts than winter-only access. The discussions below for the other surface access subcomponents (route, management, and disposition) describe these impacts.

  Eight screening criteria (water quality, fish, noise, safety, new industrial and commercial uses, socioeconomics, technical feasibility, and economic feasibility) showed generally greater impacts for a winter-only access option while five criteria (wetlands, wildlife, reclamation, existing residents and recreational users, and subsistence) showed generally greater impacts for the all-season road option.

  For the technical feasibility and economic criteria in particular, a winter-only access option was considered of high impact because of the possibility that during at least one winter over the expected mine life weather conditions would not permit a winter access window of sufficient duration to allow transport of all required materials, fuel, and supplies to the mine site. Because the winter-only access option was rated more favorable for the five criteria mentioned, however, *the winter-only access option was retained for detailed analysis of alternatives, in addition to the Applicant's proposed all-season road*.

- 3. Railroad A rail system would be technically feasible and could provide adequate surface access for the Pogo Mine project as well as for some other potential industrial and commercial resource uses. Such a system, however, would not provide long-term public access to the area. This absence of public access can be viewed as positive or negative based on issues raised during scoping. It certainly would allow for restricting public access. For most criteria, a rail system rated little differently from the all-season road option.

  Railroads by their nature have severe grade limitations. Thus, from the existing transportation infrastructure near the Richardson Highway, the only reasonable route would be up the Goodpaster Valley. From the perspective of the wetlands issue, a

Goodpaster Valley route would affect more area than would the all-season or winter-only access options. A Goodpaster Valley route also would affect existing land uses. The TBAP says that access should avoid the corridor (7D1) unless no feasible and prudent alternative exists. A railroad right-of-way would require a special exception to the TBAP.

From the perspective of economic feasibility, the costs and logistical problems of dealing with a rail system not connected to an existing rail center (e.g., the Alaska Railroad) would be very substantial. The maintenance facility (locomotive and cars), loading and unloading facilities, roadbed maintenance crews, and transfer facilities for equipment, personnel, and supplies would require more land than other transportation options and a large capital investment.

Railroads are efficient at moving large volumes over long distances. The small-scale transportation needs of the Pogo Mine project (average of five to seven trucks per day, plus periodic personnel change-outs), and the short, approximately 50-mile system length, could not support the capital investment and operating cost of a rail transportation system.

Analysis showed that a railroad option offered no substantial advantage over other mitigated options while being very expensive to construct and operate. Thus, *the railroad access option was dropped from further consideration*.

Route The two remaining surface access type options (all-season road and winter-only access) had five route options between them.

- All-season road The all-season road option had three route sub-options: Shaw Creek Hillside, South Ridge, and Dean Cummings Crossing.
  - 1 & 2 Shaw Creek Hillside and South Ridge Screening of the Shaw Creek Hillside and South Ridge route sub-options (Figure 2.4-3) showed that for three criteria (wetlands, fish, and wildlife), lower impacts were expected for the South Ridge route. Thus, because the Shaw Creek Hillside route was the Applicant's preferred sub-option, and because the South Ridge route offered an environmental advantage for three criteria, *both route options were retained for alternatives analysis*.

    Richardson Highway egress The Shaw Creek Hillside sub-option had four route choices for initial egress from the Richardson Highway at the beginning of the route: the existing Shaw Creek Road / Rosa route, Pipeline, Keystone, and Tenderfoot (Figure 2.4-4).

    - Existing Shaw Creek Road/Rosa This route was considered to have moderate impacts for four criteria (wetlands, fish, noise, and safety). *It was retained for further analysis* because it was the Applicant's proposed option.
    - Pipeline This route was considered to have moderate impacts for the fish and safety criteria, but a high technical feasibility impact. There is an existing "underpass" of TAPS at an appropriate location for this route, but it is too low to provide clearance for standard highway trucks. The road would have to be lowered at this point with a carefully engineered excavation under Alyeska Pipeline Service Company supervision. The existing bridge on the TAPS work pad could not support projected project loads and would have to be reconstructed. The major reason for the high impact rating, however, was

because this route would follow the work pad for a distance of approximately 4 miles immediately adjacent to the elevated pipeline. This route would be dangerous, and Alyeska likely would strongly oppose this option, especially given that there are other options. The single biggest accidental threat to TAPS security is from large vehicles colliding with the above ground pipeline. Thus, *this option was dropped from further consideration*.

- Keystone This route was considered to have moderate impacts for three criteria (fish, wildlife, and technical feasibility) and a high impact for wetlands. From a fish perspective, this route would involve a new crossing of Shaw Creek, and for wildlife, this route would traverse prime waterfowl habitat and affect nesting trumpeter swans. From a technical perspective, this route would have to pass under the same elevated portion of TAPS as would the Pipeline route. The high impact to wetlands would occur because the route would traverse approximately 3.5 miles of primarily wetlands, requiring a large rock or gravel fill that would necessitate high maintenance. Because of these impacts, and because this route did not offer any clear advantage not already offered by the two other retained choices, *it was dropped from further consideration*.
- Tenderfoot This route, which would be similar to the Shaw Creek Road / Rosa route except that it would avoid the existing Shaw Creek Road, had the same impact ratings as the Shaw Creek Road / Rosa route, except for four criteria. It was rated a high impact for economic feasibility because it would require building an entirely new access road. It rated as having lower impacts for fish, noise, and safety criteria, the latter two because it would avoid passing homes along the existing Shaw Creek Road. Because the low fish, noise, and safety ratings offered advantages over the Shaw Creek Road / Rosa route, *this route was retained for alternatives analysis*.

3. Dean Cummings Crossing This sub-option would be approximately 64 to 70 miles in length. It would begin approximately 28 miles east of Delta Junction where the Alaska Highway crosses the Gerstle River (not shown in Figure 2.4-3). The route would follow New Cummings Road northwest to the vicinity of Dean Cummings Junction where it would cross the Tanana River. From this point the route was not well defined, but would pass close to Healy Lake and then up the Healy River and into the Goodpaster drainage. It would require a major bridge across the Tanana, and between five and eight other bridges depending on the route.

   Impacts to subsistence use, fish, wildlife, and wetlands likely would be substantially greater than for either of the other two route options. In addition, being between 33 to 45 percent longer, this option would be substantially more costly than the other options. This route would cross lands privately owned by the Village of Healy Lake, which has stated its strong opposition to any all-season road into the area. Thus*, this sub-option was dropped from further consideration.*

- Winter-only access The winter-only access option had two route sub-options (Figure 2.4-3):

  1. Shaw Creek Flats
  2. Goodpaster Valley

All six evaluation criteria for which differential impacts were identified between these sub-options (water quality, wetlands, fish, wildlife, existing privately-owned lands and

existing recreational and commercial uses, and subsistence) showed greater impacts for the Goodpaster Valley route than for the Shaw Creek Flats route.

For three criteria (water quality, fish, and wildlife), the major concern was the risk of fuel spills, as discussed earlier under the fuel supply component. The Goodpaster Valley route would have nine ice bridge crossings of the Goodpaster River versus a maximum of two over Shaw Creek and one over the Goodpaster River for the Shaw Creek Flats route. It also would cross more Conservation Priority Index lands than the Shaw Creek Flats route.

From a wetlands perspective, the Goodpaster Valley route would require more riverine habitat disturbance. For the existing privately owned lands and recreational activities criterion, the Goodpaster Valley route would affect a substantially higher number of owners/users, and it would be closer to Healy Lake's major subsistence use area. For no criterion did the Goodpaster Valley route offer an advantage. Thus, while this route would be used for the first 2 years of mine development, and possibly longer, as an ongoing route for winter surface access to the Pogo mine site, *the Goodpaster Valley option was dropped from further consideration and only the Shaw Creek Flats winter-only access option was carried forward* for alternatives analysis.

- The Shaw Creek Flats route had two sub-options.

  The first was a winter access route for approximately 25 miles up the bottom of the Shaw Creek Valley, requiring a new route for approximately the last 10 miles, to an approximately 18-mile all-season road over the divide to the Goodpaster River Valley.

  The second was a shorter, approximately 15-mile winter access route on existing trails that would meet a similar but approximately 30.5-mile all-season road south of Gilles Creek.

All six evaluation criteria for which differential impacts were identified between these sub-options (water quality, wetlands, fish, new industrial and commercial uses, technical feasibility, and economic feasibility) showed greater impacts for the sub-option of constructing an annual winter access all the way up the bottom of Shaw Creek Valley. For no criterion did this sub-option offer an advantage; thus, *it was dropped from further consideration and the second option was carried forward for detailed analysis*.

Management This surface access subcomponent had three elements: design, use, and location of the security gate.

1. Design The all-season and winter-only access design options each had two sub-options.

- All-season road — one lane with turnouts, or two lanes For all but two criteria, no differential impacts between the options were identified. For the safety and new industrial and commercial uses criteria, however, the two-lane design was considered more favorable. The single-lane option showed no advantage for any of the criteria. Thus*, only the two-lane option, as proposed by the Applicant, was carried forward for alternatives analysis*.

- Winter-only access — a traditional snow and ice road, or a perennial winter trail A traditional snow and ice road surface would be built on top of the vegetation while

a perennial winter trail design would entail developing a route with a flat surface that sometimes involved small cuts and fills and partial removal of surface organics.

For all but two criteria, no differential impacts between these sub-options were identified. For the wetlands criterion, greater impacts were expected for the perennial winter trail sub-option because of greater surface disturbance. For the economic feasibility criterion, greater impacts were expected for the traditional winter-only access, which would be more costly to construct each year. The potential for too short an annual resupply window for winter-only access is considered by the Applicant to be a fatal flaw for the traditional winter-only access sub-option. Because the perennial winter trail standards sub-option potentially offers a method for increasing the length of the use window for winter-only access during warmer, low-snow winters, however, *both sub-options were retained and carried forward for alternatives analysis*.

2. Use This element had three options for use during mine operations: use by the Pogo project only, use by the Pogo project as well as other industrial and commercial users, and use by everyone.

While for the majority of criteria, restricting use only to the Pogo project was the more favorable option, for three criteria (new industrial and commercial uses, recreational resources and uses, and socioeconomics) each of the other two options was more favorable. Thus, *all three options were carried forward for alternatives analysis*.

3. Security gate location Two locations for a security gate were considered; near the end of the existing Shaw Creek Road, and at Gilles Creek approximately 23 miles up the Shaw Creek Valley from the end of the existing Shaw Creek Road.

Both locations were retained for alternatives analysis; the former because it was the Applicant's proposed location, and the latter because it was more responsive to the TVSF management guidelines.

Disposition This surface access subcomponent, applicable only if there were to be an all-season road, had three options:

1. Removal and reclamation
2. Conversion to a recreational trail
3. Leaving the road open following closure of the Pogo project

- Analysis of the conversion to a recreational trail option showed there was not enough information at present to adequately screen it. For example, would motorized vehicles be allowed on the trail? Also, there appeared to be no reason at this time to analyze just one road disposition option that would not become effective for more than a decade, during which conditions could change. In addition, by analyzing the other road disposition options to remove and reclaim the road, as well as leaving the road open at the end of the Pogo project, the impacts analysis would cover a range of options that would include a recreational trail. Thus, *the recreational trail option was dropped from further consideration.*

- The majority of criteria rated removal and reclamation of the road as more favorable than leaving the road open. For six criteria (reclamation, industrial and commercial uses, recreational uses, socioeconomics, technical feasibility, and economic feasibility),

however, leaving the road open following closure of the Pogo project was more favorable. Thus, *both these options were carried forward for alternatives analysis*.

The option to leave the road open had two sub-options:

- Use by industrial and commercial users
- Use by everyone

Each option was rated as being more favorable than the other for at least one criterion. Thus, *both sub-options were carried forward for alternatives analysis*.

Air Access

This component had three subcomponents: type of access, management of that access, and ultimate disposition of the access system at mine closure.

Type This subcomponent had three options: an air-only option, air access as a complement to surface access, and no air complement to surface access.

1. Air-only This option was considered for five criteria (safety, new industrial and commercial uses, socioeconomics, technical feasibility, and economic feasibility) to have high impacts, and by two (noise and existing land ownership and recreational uses) to have moderate impacts. Winter-only access still would have to be constructed up the Goodpaster winter trail for two or three consecutive seasons in order to mobilize and demobilize the equipment and supplies necessary to construct the 5,000-ft airstrip at Tabletop and the mine, and to supply the initial inventory. After construction, access would be predominantly by air, but winter-only access still would be necessary periodically for items too large to be transported by air.

   From a technical feasibility perspective, this option would not provide the required reliability for a 24-hour-per-day, 7-day-per-week mining operation that would run for 12 years. Wind data collected at the Tabletop airstrip site indicated strong prevailing winds at approximately 90° to the alignment of the airstrip (ABR Inc., 2001). These crosswinds, combined with unpredictable gusts and turbulence near the ridge tops, could render the strip unavailable or unsafe for considerable periods of time. The data indicated that the crosswinds at the Tabletop location would exceed published Federal Aviation Administration (FAA) guidelines for normal airstrip construction and operation (Teck-Pogo Inc., 2001a).

   Based on daily weather and logistical site records related to air access availability during 2000 at the existing Pogo airstrip in the Goodpaster River Valley, access was restricted 21 percent of the time either part of the day or all day by weather conditions, either at the Pogo Mine site or at Delta. The reliability of an air access system associated with a 5,000-ft airstrip at the Tabletop site very likely would be somewhat worse.

   First, the 21 percent restricted availability figure for the existing Pogo airstrip was based on single-engine Cessna 206 and twin-engine SkyVan aircraft. These aircraft are relatively small and can often fly up the Goodpaster Valley in weather conditions that would not be possible with the DC-6 or C-130 aircraft that would use the Tabletop site. Small aircraft can start up the valley in

marginal weather and, while prepared to turn around if necessary, often can make it through to the site. These marginal days were not logged in the site records as part of the 21 percent restricted days, and they would increase that figure because larger aircraft could not risk beginning a trip until weather conditions were certain.

Second, the Tabletop site has substantially worse weather conditions than the existing lower airstrip in the valley. Visibility restrictions resulting from frequent low cloud ceilings at the 3,500-ft site elevation would add an additional element of uncertainty and unavailability. The site is often in the clouds and would be unusable on many days that the smaller aircraft could make it into the lower airstrip.

Third, the high winds and turbulence experienced by the aircraft at the 3,000- to 4,000-ft elevation are often subdued near the Goodpaster Valley floor. The crosswind and turbulence component at the Tabletop site would additionally restrict use of the airstrip, even on some clear days.

Based on Year 2000 records and the reasons discussed above, it appears that availability of a Tabletop airstrip would be lower than for one in the Goodpaster Valley. While it is difficult to estimate actual availability of a Tabletop airstrip, it is possible that the elevation, wind, and visibility issues could combine to render the airstrip unavailable between 25 and 30 percent of the time. Such restrictions would cause substantial disruptions to many aspects of mine operations, including crew changes and critical component resupply.

From a safety perspective, an air-only option would be inherently less safe than a ground access option for many of the same reasons discussed above for technical feasibility. Given those restrictions, and because the Tabletop site would not meet FAA safety guidelines, it is doubtful a prudent operator would accept the liability and business risks associated with operating such an airstrip.

From an economic feasibility perspective, this option would be substantially more costly than a ground access option. Analysis showed that costs of transportation by air would be approximately $400 per ton, or three times greater compared with approximately $127 per ton for surface transportation with an all-season road. This higher cost would result in a difference of approximately $8.3 million annually. The cost of transporting personnel by air would result in an additional $0.7 million dollars. Together, the air-only option would have annual costs of approximately $9 million, or approximately 9 percent of the gross annual revenue expected of $100 million expected for the project (Teck-Pogo Inc., 2002a). This expense would place an economic burden on the project that would not be conducive to long-term project stability.

There would be other related increased costs for an air-only option. Without surface access, the cost of constructing a power line would increase between approximately $1 million and $4.7 million, depending on whether it were built in summer or winter. And, the costs for constructing a winter road for additional years would be in excess of $1 million. Also, there would be inevitable additional costs from weather-related delays in personnel shift changes, at approximately $55,000 per day.

Other indirect costs would include additional power line maintenance, which would be more difficult without support of an adjacent surface access route. There would be management complexities associated with an air-only option that are difficult to quantify, but that would ultimately cause inefficiencies and increased costs. Inventory management would be intensive because all incoming loads would have to be broken down from highway loads and rehandled at least three extra times, increasing risk of damage, spills, and other losses. During construction, if major mine components were not available to make the brief time window for use of the winter road, there would either be project delays or complex workarounds required that would add costs and risk to the project.

For the new industrial and commercial uses criterion, the air-only option was found to be less favorable than a ground access option, as it was for the socioeconomic criterion, because ground access would have a more favorable influence on additional economic development in the project area.

Also, an air-only option would reduce opportunities for local, stable, year-round employment. An all-season road option would allow a 4-day-on, 4-day-off shift during which workers would be able to be home every 4 days. Given the high transport costs and the lack of a predictable flight schedule, a 4-day-on, 4-day-off shift would not be used under the air-only option. A 2-week-on, 2-week-off shift would be used. Thus, workers would have less frequent contact with their families. And, the longer rotation would allow workers to live far from their place of employment, thereby reducing the beneficial socioeconomic impact on the Delta area.

From an overall screening perspective, the third-party EIS team recommended the air-only option be dropped from further consideration for the following reasons: this option would still require periodic, ongoing use of a Goodpaster winter-only access; it could not provide a reliable and safe transportation system needed to support mine operations; the costs of flying almost all fuel and materials to the site would place a serious economic burden on the project; and local socioeconomic benefits would be lost.

Following their review of this recommendation, the agencies and Tribes requested a more detailed analysis of this option so that the agencies could specifically make a better informed decision on whether to retain the option for additional analysis. In response, the Applicant produced a more detailed evaluation of an air-only option (Teck-Pogo Inc., 2001a), which the third-party contractor was tasked to review, in addition to other available information (Michael Baker Jr., 2001). Following analysis of these documents, EPA (2001b), COE (2001), and ADNR (2001a) each determined that *an air-only option was not reasonable and practicable and was not responsive to the purpose and need. Therefore, it was dropped from further consideration*.

2. Air complement to surface access This option had two sub-options: a 3,000-ft airstrip in the Goodpaster Valley (with the all-season road option) and a 5,000-ft airstrip at Tabletop (with the winter-only access option). Based on the concerns discussed immediately above for the 5,000-ft airstrip, this sub-option was dropped, and *only the 3,000-ft airstrip was retained for alternatives analysis*.

3. No air complement to surface access This option was judged to have low impacts for all criteria except two. For the safety criterion, having only ground access was judged less favorable than having the flexibility of an air component, and from the perspective of new industrial and commercial uses, having no air complement to ground access was considered to have a high impact.

   From a strictly practical perspective, however, this option did not make sense. First, there is an existing airstrip at the site that has been used for many years; therefore, a new airstrip would not introduce air access where there has been none before. Second, under the winter-only access option, there would have to be a permanent airstrip someplace to move workers and supplies to and from the site during the approximately 44 weeks when the winter-only access would not be in operation. For the all-season road option, the only option where the no complement to ground access option could apply, a 3000-ft airstrip would have to be available at least for the first year of construction to move workers and supplies to and from the site until the road was completed. Thus, this option would necessitate abandoning use of an existing 3,000-ft airstrip and require all personnel and supplies to move via the all-season road, when completed. Continued use of the existing 1,500-ft airstrip would not be possible because the road bridge across the Goodpaster River would actually cross the southern end of the existing airstrip, making it unusable within approximately 1 month from start of project construction.

   Alternatively, under the all-season road option, aircraft would use the airstrip approximately two to four times per week. This air traffic would be a small addition to other, non-Pogo flights in the area, especially in a state where small planes are common. Also, even though the Pogo Mine project would have an all-season road, maintaining an airstrip for safety purposes is very important in isolated communities, especially because the trip just to the Richardson Highway would be more than 50 miles. Thus*, having no airstrip was not considered practical and it was dropped from further consideration*.

Management This subcomponent had three options, use by:

1. Pogo project only
2. Pogo and other industrial and commercial users
3. Everyone

Although for the majority of criteria, restricting use only to the Pogo project was the more favorable option, for three criteria (new industrial and commercial uses, reclamation, and socioeconomics), each of the other two options was more favorable. Thus*, all three options were carried forward for alternatives analysis*.

Disposition This subcomponent had two options: removal and reclamation of the airstrip and leaving it open following closure and reclamation of the Pogo project.

1. Removal and reclamation The majority of criteria rated this option as having no or low impacts. For four criteria (reclamation, new industrial and commercial uses, recreational users, and economic feasibility), this option was considered to have high impacts, and for the socioeconomic criterion, it was considered to have moderate impacts. These five criteria favored leaving the airstrip open. Thus*, both options were carried forward for alternatives analysis*

2. Leave airstrip open This option had two sub-options:

- ✦ Use only by industrial and commercial users
- ✦ Use by everyone

The majority of criteria considered these sub-options to have similar impacts. For the fish, safety, existing recreational uses, and subsistence criteria, the sub-option of use by everyone was considered as having greater impacts, while for the recreational resources and uses criterion, the sub-option of open only to industrial and commercial users was considered as having a high impact. Thus, because each sub-option provided an advantage for at least one criterion, *both sub-options were carried forward for alternatives analysis.*

Power Line Route

This component had two subcomponents, one with two power line route options, and one with one route option (Figure 2.4-3):

1. An all-season road route

- Shaw Creek Hillside
- South Ridge

2. A winter-only access route

- Shaw Creek Hillside

Note: for the option of Shaw Creek Flats winter-only access, the power line in the lower Shaw Creek drainage would follow the power line route along the Shaw Creek Hillside all-season road route and would not be located in the flats near the winter road or perennial winter trail in the valley bottom.

For all evaluation criteria, no differences between the options were identified at the screening level, with most impacts related to the type of ground access (all-season road versus winter only access) that the power line options would follow. Because the Goodpaster Valley winter-only access option was dropped from further consideration, as described earlier, *only the Shaw Creek Hillside and South Ridge power line route options were retained for alternatives analysis.*

Conclusion

As a result of the options screening process, 44 options and 13 sub-options for the 15 project components were retained for detailed alternatives analysis in Chapter 4 (Environmental Consequences). How those options and sub-options were used to form the formal project alternatives is described in Section 2.5 (Action Alternatives Identification).

Summary Options Screening Matrix

This matrix contains all of the components, options, and sub-options developed in Section 2.4.2 (Options Development) down its left side and each of the 16 screening criteria identified in Section A.1.1 (Screening Evaluation and Metrics) listed across the top. The body of the matrix presents the high (**H**), moderate (**M**), and low (**L**) impact ratings produced during the screening process for each option/sub-option and each criterion. These screening ratings are referenced extensively in Section A.1.2 (Options Screening).

Note: It is important that the reader understand that this screening matrix is NOT a summary of the impacts described in Chapter 4 (Environmental Consequences). It is a summary of the impact ratings that were assigned, early in the EIS process, to decide which options would be carried forward for detailed analysis, and which options would be dropped from further consideration.

While most of the impact ratings in this matrix agree with those described in Chapter 4, during detailed impacts analysis several of the impacts in this matrix were determined to be greater or smaller than originally believed almost 2 years earlier. This finding is not surprising because during that period considerably more information became available on which to base impact determinations.

Thus, this matrix represents a "snapshot" of the screening analysis process early in the EIS process. Its primary value is in understanding why particular options were dropped and why others were carried forward for detailed analysis at that time.

Component / Option / Sub-option	W Q	Wet	Fish	Wildl	Air Q	Noise	Safety	Recl'm	Indust	Rec	Exist	Cult	Subsis	Socio	Tech	$$
Milling Process																
▶ Whole ore cyanidation[1]	**M**	**L**	**M**	**M**	**L**	**L**	**L**	**H**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**
▶ Gravity / flotation / cyanide vat leach[2]	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**M**
▶ Gravity/flotation/ship concentrate off site	**L**	**L**	**L**	**M**	**L**	**M**	**M**	**L**	**L**	**L**	**H**	**L**	**H**	**L**	**L**	**H**
Tailings Disposal																
Type																
▶ Underground paste backfill	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**
▶ Tailing facility liner	**L**	**M**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**M**	**L**	**L**	**L**	**L**	**L**
✦Lined dry stack	N/A[3]	**L**	**L**	**L**	**L**	**L**	**L**	N/A	**L**	**L**	**L**	**L**	**L**	**L**	N/A	**M**
✦Lined RTP	N/A	**L**	**L**	**L**	**L**	**L**	**L**	N/A	**L**	**L**	**L**	**L**	**L**	**L**	N/A	**M**
✦Unlined dry stack	N/A	**L**	**M**	**L**	**L**	**L**	**L**	N/A	**L**	**L**	**L**	**L**	**L**	**L**	N/A	**L**
✦Unlined RTP	N/A	**L**	**L**	**L**	**L**	**L**	**L**	N/A	**L**	**L**	**L**	**L**	**L**	**L**	N/A	**L**
▶ Traditional surface wet tailings																

[1] Shaded rows are options or sub-options that were dropped from further consideration.
[2] Underline – Applicant's preferred option.
[3] N/A – Data not available at time of screening.
[4] There was no Site # 2.

Summary Options Screening Matrix

High (H), Moderate (M), and Low (L) Impact Ratings

Component / Option / Sub-option	W Q	Wet	Fish	Wildl	Air Q	Noise	Safety	Recl'm	Indust	Rec	Exist	Cult	Subsis	Socio	Tech	$$
Location																
▶ West side of Goodpaster River																
✦# 2 Traditional wet tailings																
✦# 3 Traditional wet tailings																
✦# 4A Dry stack																
✦# 4B Dry stack																
✦# 5 Dry stack																
✦# 7 Traditional wet tailings																
✦# 8 Traditional wet tailings																
✦West side of Goodpaster via tunnel																
▶ East side of Goodpaster River																
✦# 1 Liese Creek dry stack	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L
✦# 6A Lower West Creek wet tails																
✦# 6B Upper West Creek wet tails																
✦# 6C West Creek dry stack	M	M	L	M	L	L	L	L	L	L	M	L	L	L	L	L
✦# 9 Sonora Creek wet tailings																
✦# 10 Tabletop dry stack																
▶ Off site (outside the project area)																
Mill and Camp Location																
▶ Below 1525 Portal in valley (Site #1)	M	H	M	M	L	L	L	H	L	L	H	L	L	L	M	L
▶ Upper Pogo Ridge (Saddle, Site #3) 4	L	M	L	M	L	L	L	L	L	L	M	L	L	L	L	L
▶ Pogo Ridge (Site # 4)	H	M	L	L	L	L	L	L	L	L	M	L	L	L	L	L
▶ West side of G-paster River (Site #5)																
▶ Liese Creek Valley (Site #6)	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▶ Off site (outside the project area)																

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[2] Underline – Applicant's preferred option.
[3] N/A – Data not available at time of screening.
[4] There was no Site # 2.

Summary Options Screening Matrix

High (H), Moderate (M), and Low (L) Impact Ratings

Component / Option / Sub-option	W Q	Wet	Fish	Wildl	Air Q	Noise	Safety	Recl'm	Indust	Rec	Exist	Cult	Subsis	Socio	Tech	$$
Development Rock Disposal																
▶ Liese Creek																
✦Mineralized/encapsulated in dry stack	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
✦Nonmineralized (stack & dam constr.)	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Gravel Source																
▶ New gravel pits in Goodpaster Valley	L	M	L	M	L	L	L	L	L	L	L	L	L	L	L	L
▶ Crush nonmineralized development rock	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H
Construction Camp Location																
▶ Below 1525 Portal in G-paster Valley	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Laydown Area																
▶ Permanent below portal, airstrip, mill	L	H	M	M	L	L	L	L	L	L	M	L	L	L	L	L
▶ Temp: portal and airstrip; perm. at mill	L	H	M	M	L	L	L	L	L	L	M	L	L	L	H	L
Power Supply																
▶ Power line	L	M	L	L	L	L	L	L	L	L	H	L	L	L	L	L
▶ On-site generation	M	L	M	M	L	M	L	L	H	M	L	L	M	M	L	L
Water Supply																
Industrial																
▶ Mine drainage	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▶ RTP	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▶ Wells	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▶ Goodpaster River	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L
Domestic																
▶ Wells	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▶ Goodpaster River	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L

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[4] There was no Site # 2.

Summary Options Screening Matrix

High (H), Moderate (M), and Low (L) Impact Ratings

Component / Option / Sub-option	W Q	Wet	Fish	Wildl	Air Q	Noise	Safety	Recl'm	Indust	Rec	Exist	Cult	Subsis	Socio	Tech	$$
Water Discharge																
Development Phase																
▶ Underground injection wells	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L
▶ Discharge to Goodpaster	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L
▶ Off-river treatment works	L	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L
Operations Phase																
▶ Industrial wastewater (from RTP)																
✦Constructed wetlands at borrow pit	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L
✦Soil absorption system	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▸▸ Goodpaster Valley near airstrip	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L
▸▸ Middle Liese Creek Valley																
▸▸ Saddle above & SE of Pogo Ridge	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L
✦Underground injection wells	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L
✦Discharge to Goodpaster River	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L
✦Off-river treatment works	L	L	M	M	L	L	L	L	L	L	L	L	L	L	L	L
▶ Domestic wastewater																
✦Underground drain field	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▸▸ G-paster Valley mouth of Liese Ck	L	M	L	M	L	L	L	L	L	L	L	L	L	L	L	L
▸▸ Temp Liese Ck, perm. portal camp	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
✦Discharge to Goodpaster River	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L
Fuel Supply and Storage																
Supply Route																
▶ All-season road	L	L	L/M	L/M	L	L	L/M	L	L	L	L	L	L	L	L	L
✦Shaw Creek Hillside	L	M	M	M	L	L	L	L	L	L	L	L	L	L	L	L
✦South Ridge	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

[1] Shaded rows are options or sub-options that were dropped from further consideration.
[2] Underline – Applicant's preferred option.
[3] N/A – Data not available at time of screening.
[4] There was no Site # 2.

Summary Options Screening Matrix

High (H), Moderate (M), and Low (L) Impact Ratings

Component / Option / Sub-option	W Q	Wet	Fish	Wildl	Air Q	Noise	Safety	Recl'm	Indust	Rec	Exist	Cult	Subsis	Socio	Tech	$$
▶ Winter-only access	M/H	M	M/H	M/H	L	M	H	L	H	L	L	L	L	L	M	L
✦Shaw Creek Flats	M	L	M	M	L	M	M	L	H	L	L	L	L	L	M	L
✦Goodpaster River Valley	H	M	H	H	L	M	M	L	H	L	L	L	L	L	H	L
✦Air	L	L	L	L	L	M	M	L	L	L	L	L	L	L	M	H
Storage Location																
▶ Temp below portal and at airstrip; perm at portal mouth and Liese Creek mill	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▶ Temp below portal and at airstrip; perm only at Liese Creek mill	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Surface Access																
Type																
▶ All-season road	L	H	L	M	L	L	L	H	L	L	H	L	M	L	L	L
▶ Winter-only access	M	M	H	L	L	M	M	L	M	L	M	L	L	H	H	H
▶ Railroad	L	H	L	M	L	L	L	L	L	M	H	L	L	L	L	H
Route																
▶ All-season road																
✦Shaw Creek Hillside	L	H	M	M	L	L	L	H	L	L	H	L	L	L	L	L
Initial egress from Richardson Hwy																
▸▸ Existing Shaw Creek Road/Rosa	L	M	M	L	L	M	M	L	L	L	L	L	L	L	L	L
▸▸ Pipeline	L	L	M	L	L	L	M	L	L	L	L	L	L	L	H	L
▸▸ Keystone	L	H	M	M	L	L	L	L	L	L	L	L	L	L	M	L
▸▸ Tenderfoot	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	H
✦South Ridge	L	M	L	L	L	L	L	H	L	L	H	L	M	L	L	L
✦Dean Cummings Crossing																

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[2] Underline – Applicant's preferred option.
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[4] There was no Site # 2.

Summary Options Screening Matrix

High (H), Moderate (M), and Low (L) Impact Ratings

Component / Option / Sub-option	W Q	Wet	Fish	Wildl	Air Q	Noise	Safety	Recl'm	Indust	Rec	Exist	Cult	Subsis	Socio	Tech	$$
▶ Winter-only access																
✦ Shaw Creek Flats	M	M	M	M	L	M	M	L	M	L	M	L	L	L	L	L
▸▸ To head of Shaw Creek Valley	M	M	M	L	L	L	L	L	M	L	L	L	L	L	H	H
▸▸ To south of Gilles Creek	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	M
✦ Goodpaster Valley	H	H	H	H	L	M	M	L	M	L	H	L	M	L	L	L
Management																
▶ Access design																
✦ All-season road																
▸▸ One lane with periodic pullouts	L	L	L	L	L	L	M	H	M	L	L	L	L	L	L	L
▸▸ Two lane with no pullouts	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L
✦ Winter-only access																
▸▸ Traditional winter road standards	L	M	L	L	L	L	M	L	L	L	L	L	L	L	L	M
▸▸ Perennial winter trail standards	L	H	L	L	L	L	M	L	L	L	L	L	L	L	L	L
▶ Use Road open (versus closed) to:																
✦ Pogo project use only	L	L	L	L	L	L	L	L	H	H	L	L	L	M	L	L
✦ Pogo and industrial / commercial	L	M	L	M	L	M	M	L	L	H	M	L	M	L	L	L
✦ Everyone	L	H	M	H	L	M	H	L	L	L	H	L	H	L	L	L
Disposition																
▶ Remove and reclaim	L	L	L	L	L	L	L	H	H	H	L	L	L	M	M	H
▶ Leave road open (versus closed) to:																
✦ Industrial / commercial	L	H	M	M	L	M	M	L	L	H	M	L	M	L	L	L
✦ Everyone	L	H	M	H	L	M	H	L	L	L	H	L	H	L	L	L

[1] Shaded rows are options or sub-options that were dropped from further consideration.
[2] Underline – Applicant's preferred option.
[3] N/A – Data not available at time of screening.
[4] There was no Site # 2.

Summary Options Screening Matrix

High (H), Moderate (M), and Low (L) Impact Ratings

Component / Option / Sub-option	W Q	Wet	Fish	Wildl	Air Q	Noise	Safety	Recl'm	Indust	Rec	Exist	Cult	Subsis	Socio	Tech	$$
Air Access																
Type																
▶ Air-only option	L	L	L	L	L	M	H	L	H	M	L	L	L	H	H	H
▶ As complement to surface access																
✦ 3,000-ft airstrip in G-paster Valley	L	H	M	M	L	L	M	L	M	L	M	L	L	L	L	L
✦ 5,000-ft airstrip at Tabletop	L	M	L	L	L	M	H	L	L	L	M	L	L	L	L	M
▶ No air complement to surface access	L	L	L	L	L	L	M	L	H	L	L	L	L	L	L	L
Management																
▶ Airstrip open (versus closed) to:																
✦ Pogo project use only	L	L	L	L	L	L	L	L	H	H	L	L	L	M	L	L
✦ Pogo and other industrial / comm.	L	M	L	M	L	M	M	L	L	H	M	L	M	L	L	L
✦ Everyone	L	M	M	M	L	M	H	L	L	L	H	L	H	L	L	L
Disposition																
▶ Remove and reclaim	L	L	L	L	L	L	L	H	H	H	L	L	L	M	L	H
▶ Leave strip open (versus closed) to:	L	L	L	M	L	M	L	L	L	L	M	L	M	L	L	L
✦ Industrial / commercial resources	L	L	L	M	L	M	M	L	L	H	M	L	M	L	L	L
✦ Open for everyone	L	L	M	M	L	M	H	L	L	L	H	L	H	L	L	L
Power Line Route																
▶ All-season road																
✦ Shaw Creek Hillside	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
✦ South Ridge	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
▶ Winter-only access																
✦ Shaw Creek Hillside	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
✦ Goodpaster Valley	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

[1] Shaded rows are options or sub-options that were dropped from further consideration.
[2] Underline – Applicant's preferred option.
[3] N/A – Data not available at time of screening.
[4] There was no Site # 2.

Appendix A.2

Additional Noise Information

This appendix contains more specific information about noise and vibration regulations and guidelines used for the Pogo Mine noise technical analysis.

Sound Propagation Characteristics

The following provides general information on the potential effects of certain factors on sound attenuation.

- Existing Structures: Existing structures can reduce noise by physically blocking the sound transmission, and in some circumstances, can cause an increase in noise levels if the sound is reflected off the structure and transmitted to a nearby receiver location.

- Topography: Topography includes existing hills, berms, and other surface features between the noise source and receiver location. As with structures, topography has the potential to reduce or increase sound, depending on the geometry of the area.

- Foliage: Foliage, if dense, can provide slight reductions in noise levels. The Federal Highway Administration (FHWA) provides for up to a 3 decibel A-weighted (dBA) reduction in traffic noise for locations with at least 30 feet of dense foliage that contains leaves year-round.

- Ground Cover: The ground cover between the receiver and the noise source can have a significant effect on noise transmission. For example, sound will travel very well across reflective surfaces such as water and pavement, but can be attenuated when the ground cover is field grass, lawns, or loose soil. Appropriate ground coverage was used in the analysis, including powder snow, granular snow, and field grass.

- Atmospheric Conditions: Atmospheric conditions that can have an effect on the transmission of noise include wind, temperature, humidity, and precipitation.

Noise Regulations and Guidelines

FHWA Traffic Noise Criteria

The traffic noise impact criteria for federal funded road and highway projects are taken from Title 23, Part 772, of the Code of Federal Regulations (CFR), *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, FHWA, Washington, D.C. The criterion applicable for residences, churches, schools, recreational uses, and similar areas is an exterior hourly equivalent sound level (L_{eq}) from the project that approaches or exceeds 67 dBA. The criterion applicable for other developed lands, such as commercial and industrial uses, is an exterior L_{eq} that approaches or exceeds 72 dBA. In addition to the absolute levels of 67 dBA for residential and 72 dBA for commercial, the FHWA also considers a traffic noise impact to occur if "future noise levels substantially exceed the existing noise levels." Most states consider a 10-dBA increase over the existing noise levels sufficient to identify the increase as a *substantial increase impact*. No criterion exists for underdeveloped lands or construction noise. A summary of the FHWA noise regulations is contained in Table A.2-1.

Table A.2-1 FHWA Roadway Noise Abatement Criteria

Land Use Category		Hourly L_{eq} (dBA)
Type A:	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose	57 (exterior)
Type B:	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals	67 (exterior)
Type C:	Developed lands, properties, or activities not included in the above categories	72 (exterior)
Type D:	Undeveloped land	—
Type E:	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums	52 (interior)

U.S. Environmental Protection Agency Noise Guidelines

Table A.2-2 contains the U.S. Environmental Protection Agency (EPA) standards that can be used as a guideline for expected community reaction to a noise increase above existing ambient levels.

Table A.2-2 EPA Guidelines for Expected Noise Impact

Increase over Existing Level	Expected Community Reaction
0 - 5 dBA	Few complaints if gradual increase
5 - 10 dBA	More complaints, especially conflicts with sleeping hours
Over 10 dBA	Substantial number of complaints

Blasting Noise and Noise Level Descriptors

Evaluation of blast noise was performed by using the C-weighting scale. For short-term and impulsive noises, such as surface blasting, the C-weighted filter is normally used. The C-weighted filter helps to account for the short time period and low-frequency content characteristic of blasting. Measurements taken with the C-weighting filter are denoted dBC. Table A.2-3 provides information on blasting, blast levels in dBC, and community response based on the number and relative sound level of the blast.

Table A.2-3 EPA Limits on Number of Blasts for Different Blast Levels

Blast Level in dBC	Permissible Daily Number
Above 125	0
123 - 125	1
121 - 122	2
120	3
119	4
118	5
117	6
116	8
115	10
114	12
113	16
112	20
111	25
110	32
109	40
108	51
107	64
106	80
105	100

Vibration Impact Criteria

Vibration from mining-related activities, such as mechanical digging, rock breaking, and vehicle traffic are only expected to be perceptible within a few hundred feet of the activity, and no impacts are expected. However, criteria were developed for the project to ensure that there would not be any vibration-related impacts. The vibration criteria are derived from the U.S. Department of Transportation guidelines for the evaluation of impacts due to vibration. The criteria are given in Table A.2-4. The criteria given in Table A.2-4 are not applicable to blasting due to the short duration and lower frequency associated with blasts. Vibration levels from general operation and traffic do not have the same level of annoyance as the vibration produced from blasting.

The safe blasting vibration criterion is given in terms of particle velocity in inches-per-second at the frequency where most blasting energy is normally located (approximately 40 hertz)

(U.S. Department of Interior, 1971). The level of vibration considered the threshold of the “safe blasting criteria” is 2.0 inches per second.

Table A.2-4 General Vibration Peak Particle Velocity Guidelines

Velocity (in./sec)	Effects on Humans	Effects on Buildings
0 to 0.01	Imperceptible by people – no intrusion	Vibrations unlikely to cause damage of any type
0.04 to 0.08	Threshold of perception – possibility of intrusion	Vibrations unlikely to cause damage of any type
0.15	Vibrations perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.64	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
1.27	Vibrations annoying to people in buildings (This agrees with the levels established for people standing on bridges and subjected to relatively short periods of vibrations.)	Threshold at which there is a risk of "architectural" damage to normal dwellings – houses with plastered ceilings and walls.
2.54 to 3.81	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possible minor structural damage

Reference Cited and Additional References

E. I. du Pont de Nemours & Co., Inc. 1989. Blasters' handbook. 16th edition. Explosives products division. Wilmington, DL.

Harris, C. M. 1979. Handbook of noise control. Second edition. McGraw-Hill, Inc. New York.

Rosenthal, M. F., and G. L. Morlock. 1987. Blasting guidance manual. U.S. Department of the Interior, Office of Mining Reclamation and Enforcement. Washington, D.C.

U.S. Department of Interior. 1971. Blasting vibrations and their effects on structures. Bureau of Mines Bulletin 656. Washington, D.C.

U.S. Environmental Protection Agency. 1974. Information on levels of environmental noise requisite to protect public health and welfare with an adequate margin of safety. Office of Noise Abatement and Control. Arlington, VA.

Appendix A.3

Conservation Priority Index

This appendix contains more specific information about the Conservation Priority Index discussed in Section 3.14.1. The following description is based on Jorgenson *et al* (2000), and the reader is referred to that study for greater detail.

Although maps of the habitat use patterns of single species can be quite useful, developers and land managers must integrate such information across all of the biological resources of an area. To this end, Jorgenson *et al* (2000) used a geographical information system (GIS) containing habitat information for 32 key species and species groups in the Pogo Mine project area to develop six integrated indices of habitat value based on the habitat values shown in Table A.3-1. These indices were:

- Rare or sensitive species
- Rare species
- Harvested species
- Overall use (32 species)
- Habitat rareness
- Conservation priority habitats

Jorgenson *et al* (2000) suggested that the index of conservation priority was the single most useful metric for identifying priority habitats for protection from habitat-altering activities.

The Conservation Priority Index combined habitat rareness with habitat use, with emphasis on use by rare species, and values ranged from 1.41 to 2.71. (Human modified habitats were assigned a conservation priority of 0) (Table A.3-1). Figure 3.10-1 shows the geographic distribution of the wildlife habitat classes within the Pogo project area. High priority rankings were calculated for cliff, riverine broadleaf forest, riverine mixed forest, lowland meadow, lowland broadleaf forest, and lakes and ponds because these habitats were uncommon, important to rare species, or had overall high value for wildlife. In contrast, low priority rankings were calculated for alpine dwarf scrub, subalpine needleleaf woodland, upland tall scrub, and lowland low scrub because these habitats had either low use or were relatively abundant habitats. When values of the Conservation Priority Index were categorized into high, medium, and low, high priority areas covered 5 percent of the Pogo project area, medium priority areas covered 70 percent, and low priority areas covered 25 percent (Figure 3.14-1).

Table A.3-1 Rankings of habitat use for selected species in the Pogo project area, Alaska.

Ranking of habitat use for selected wildlife species in the Pogo project area, Alaska. Use ranks are 0 = none/negligible, 1 = low, 2 = medium, 3 = high, 4 = essential. Data quality is characterized by font type: bold = data-supported, regular = partially data supported, italic = judgmental.

	Area		Habitat Value Indices																																			Integrated Habitat Value Indices					
			Birds																							Mammals																	
Habitat Type	acres	% cover	Trumpeter swan	Northern pintail	Harlequin duck	Bald eagle	Northern goshawk	Peregrine falcon	Spruce grouse	Ruffed grouse	Willow ptarmigan	Common snipe	Hairy woodpecker	Olive-sided	Hammond's	Black-capped	Gray-cheeked	Varied thrush	Bohemian	Yellow-rumped	Townsend's	Lincoln's sparrow	Dark-eyed junco	Moose	Caribou	Black bear	Brown bear	Lynx	Marten	River otter	Beaver	Snowshoe hare	Microtine rodents[a]	Shrews[b]	Rare or Sensitive Species	Rare Species	Harvested Species	Overall Use (all 32 species)	Habitat Rareness	Conservation Priority Habitats
Rivers and Streams	29,698	4.3	*1*	*1*	**4**	**4**	*0*	**3**	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0	*0*	*0*	*0*	0	*0*	**4**	**2**	*0*	*0*	*0*	4	4	0.54	0.63	1	1.88
Riverine Barrens	3,278	0.5	0	*2*	*0*	*1*	**1**	*2*	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	2	*1*	2	*0*	*1*	*0*	*1*	*1*	*1*	*1*	*1*	3	2	0.92	0.59	3	1.86
Riverine Scrub	3,435	0.5	*0*	**3**	*0*	*1*	*1*	*2*	*1*	**2**	*1*	**2**	*1*	*1*	*1*	**2**	**1**	2	**1**	**1**	*0*	**2**	**2**	**3**	*1*	**3**	*1*	2	*0*	*1*	*1*	**3**	2	*1*	6	2	1.69	1.41	3	2.14
Riverine Broadleaf Forest	3,123	0.4	*0*	*1*	*0*	**3**	**3**	*1*	*2*	**1**	*0*	*1*	**3**	*1*	**2**	**3**	**3**	**3**	*1*	**2**	*1*	*1*	**2**	**3**	*1*	2	*1*	2	*0*	*1*	*1*	2	**1**	*1*	8	3	1.31	1.53	3	2.51
Riverine Mixed Forest	10,590	1.5	*0*	*1*	*2*	**4**	**2**	*1*	**3**	**1**	*0*	**1**	**3**	**1**	**2**	**1**	*2*	**2**	*2*	**3**	*2*	**1**	**2**	**2**	*1*	*2*	*1*	**2**	**2**	*1*	*1*	**2**	**1**	**1**	7	4	1.46	1.63	2	2.54
Riverine Needleleaf Forest	15,362	2.2	*0*	*1*	**3**	**2**	**2**	*1*	**3**	**1**	*0*	1	*2*	**2**	2	**2**	**1**	**2**	*2*	**3**	*2*	*1*	**2**	*1*	*1*	**2**	*1*	*1*	*3*	*1*	*1*	*1*	*1*	*1*	9	2	1.31	1.53	2	1.84
Lakes and Ponds	2,327	0.3	**4**	**3**	*1*	**2**	*0*	*2*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	**3**	*0*	*0*	*0*	0	*0*	**3**	**4**	0	*0*	*0*	2	2	1.00	0.72	4	2.24
Lowland Meadow	1,515	0.2	*3*	**2**	*1*	**2**	*0*	*2*	*0*	*0*	*1*	2	*0*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	**3**	**1**	*2*	*1*	**1**	*1*	**1**	2	*2*	*2*	*1*	**3**	**3**	4	2	1.23	1.16	4	2.39
Lowland Low Scrub	24,404	3.5	*1*	**1**	*0*	0	*1*	*1*	**1**	*1*	*1*	**3**	1	*0*	*0*	*1*	**2**	0	**2**	**1**	*0*	**3**	**2**	2	*1*	2	*1*	2	*0*	1	*1*	**2**	**3**	**2**	4	2	1.23	1.22	1	1.41
Lowland Broadleaf Forest	11,400	1.6	*0*	**3**	*0*	*0*	*2*	*1*	*1*	2	*0*	**3**	**2**	**1**	**1**	**2**	**3**	2	**1**	**2**	1	**3**	**1**	**3**	*1*	**3**	*1*	2	**2**	*1*	*1*	**3**	*3*	*3*	8	3	1.77	1.69	2	2.23
Lowland Needleleaf Forest	114,312	16.4	*0*	*1*	*0*	*0*	*2*	*1*	**2**	**1**	*0*	**2**	**2**	**3**	**3**	**2**	**3**	**2**	**3**	**3**	**2**	**3**	**3**	*2*	*2*	**3**	*1*	*2*	**3**	*1*	*1*	**2**	**2**	**2**	8	3	1.62	1.84	0	1.61
Bluff Meadow	114	< 0.1	*0*	*0*	*0*	*0*	*0*	*2*	*0*	0	*1*	*0*	*0*	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*1*	*1*	*1*	*0*	*1*	**1**	0	*0*	*0*	*0*	**1**	*1*	1	2	0.38	0.38	4	2.13
Upland Tall Scrub	10,520	1.5	*0*	*0*	*0*	*0*	**1**	*1*	**1**	*1*	*2*	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	2	*1*	**2**	**2**	3	*1*	*1*	2	2	*1*	*1*	*1*	2	**3**	**3**	10	1	1.38	1.34	2	1.45
Upland Needleleaf Woodland	22,719	3.3	*0*	*0*	*0*	*0*	*1*	*1*	*1*	*1*	*2*	*0*	*0*	**3**	*0*	*1*	*1*	*0*	*0*	*1*	*0*	*0*	*1*	**2**	*2*	**2**	*2*	**2**	**3**	*0*	*0*	**2**	**2**	**1**	2	3	1.46	0.97	1	1.66
Upland Broadleaf Forest	69,243	10.0	*0*	*0*	*0*	*0*	**3**	*1*	**2**	**2**	*1*	*0*	*2*	*1*	**3**	**3**	**2**	**2**	**2**	**3**	**2**	*1*	**3**	2	*1*	**3**	2	**3**	0	*1*	*1*	**2**	**2**	**2**	9	2	1.54	1.63	1	1.54
Upland Mixed Forest	176,888	25.4	*0*	*0*	*0*	*0*	**3**	*1*	**3**	**3**	*1*	**1**	**1**	**3**	**3**	**3**	**2**	**3**	**3**	**3**	**3**	1	**3**	1	*1*	*2*	*2*	**3**	*0*	*1*	*1*	**2**	**3**	2	9	3	1.54	1.81	0	1.60
Upland Needleleaf Forest	81,844	11.8	*0*	*0*	*0*	*0*	**1**	*1*	**2**	*2*	*1*	*0*	**2**	**1**	**2**	*2*	**1**	**2**	**3**	**2**	**3**	1	**2**	1	*2*	**2**	*2*	**2**	1	*1*	*1*	**2**	**2**	**2**	9	3	1.46	1.44	0	1.48
Upland North-facing Needleleaf Forest	51,469	7.4	*0*	*0*	*0*	*0*	*1*	*1*	*2*	**2**	*1*	*0*	*1*	**3**	*2*	*2*	*2*	**1**	2	**1**	2	1	**2**	1	*2*	**2**	*3*	*1*	*1*	*0*	*0*	1	**1**	2	5	3	1.23	1.25	1	1.75
Cliff	73	< 0.1	*0*	*0*	*0*	*0*	*0*	**4**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0	*0*	0	1	4	0.00	0.13	4	2.71
Alpine Meadow	4,445	0.6	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	*2*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	*0*	0	*3*	0	*3*	*0*	**1**	*0*	*0*	0	*1*	1	0	1	0.69	0.44	3	1.48
Subalpine Needleleaf Woodland	37,919	5.5	*0*	*0*	*0*	*0*	*0*	*2*	*1*	*0*	**3**	**1**	*0*	*0*	*0*	*0*	*0*	1	*0*	1	*0*	1	1	2	*3*	**2**	*3*	2	**2**	*0*	*0*	*1*	**2**	**2**	2	2	1.46	0.94	1	1.31
Alpine Dwarf Scrub	13,048	1.9	*0*	*0*	*0*	*0*	*0*	*1*	*0*	*0*	**2**	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	0	*3*	0	*3*	**1**	**1**	*0*	*0*	*0*	**2**	**1**	1	1	0.77	0.44	2	1.15
Human Modified	3,531	0.5	*0*	*0*	*0*	*1*	*1*	*1*	*1*	*2*	*1*	*0*	*0*	*1*	*1*	*1*	*1*	*0*	*1*	*0*	*0*	*0*	1	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*1*	**2**	1	1	1	0.46	0.56	3	0[c]

[a] *Clethrionomys rutilus*; *Microtus oeconomus*, *M. pennsylvanicus*, *M. xanthognathus*, *M. miurus*, *M. longicaudus*; *Synaptomys borealis*; *Lemmus trimucronatus*; *Zapus hudsonius*.
[b] *Sorex cinereus*, *S. hoyi*, *S. monticolus*, *S. tundrensis*.
[c] Human modified habitats were assigned a Conservation Priority index of 0.

Appendix B

Clean Water Act
Section 404 Authorization
Public Notice

US Army Corps
of Engineers
Alaska District

Public Notice of Application for Permit

Regulatory Branch (1145b)
Post Office Box 6898
Elmendorf AFB, Alaska 99506-6898

PUBLIC NOTICE DATE: September 19, 2003

EXPIRATION DATE: October 20, 2003

REFERENCE NUMBER: Q-1996-0211

WATERWAY NUMBER: Goodpaster River 1

Interested parties are hereby notified that an application has been received for a Department of the Army permit for certain work in waters of the United States as described below and shown on the attached plan.

APPLICANT: The applicant is Teck-Pogo Incorporated, 3520 International Street Fairbanks, Alaska 99701-7382.

LOCATION: The project will be conducted on the following lands located within the Fairbanks Meridian.

Mine Site		
Township	Range	Section
T6S	R14E	3
T5S	R14E	14, 22, 23, 25, 26, 27, 34, 36
Shaw Ck Access Road		
Township	Range	Section
T7S	R8E	11, 12, 14, 15, 22, 27, 35, 36
T7S	R9E	1, 7, 11, 12, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 29, 31, 32
T7S	R10E	1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 15, 16, 17, 18, 19, 20
T6S	R10E	36
T6S	R11E	12, 13, 14, 15, 22, 27, 28, 29, 31, 32
T6S	R12E	2, 3, 4, 5, 7, 8, 11, 12
T6S	R13E	1, 2, 7, 8, 11, 14, 15, 16, 17
T6S	R14E	4, 5
T5S	R12E	33, 34
T5S	R13E	36
T5S	R14E	27, 31, 32, 33, 34

Transmission Line (not otherwise included in road)		
Township	Range	Section
T7S	R9E	13
T7S	R10E	8
T6S	R11E	11
T6S	R13E	10
T6S	R14E	6
Goodpaster Winter Road		
Township	Range	Section
T8S	R10E	21, 22, 23, 25, 26
T8S	R11E	13, 14, 21, 22, 23, 28, 29, 30
T8S	R12E	8, 9, 10, 11, 13, 14, 17, 18
T8S	R13E	2, 3, 11, 14, 15, 16, 17, 18, 19, 20, 22
T7S	R13E	1, 2, 10, 11, 12, 15, 22, 27, 34
T7S	R14E	4, 5, 6, 7
T6S	R14E	2, 3, 10, 11, 15, 22, 27, 33, 34
T5S	R14E	27, 34

The mill site will be located at latitude 64° 16' 58" north, longitude 146° 07' 42" west. The mine would operate in a currently roadless area 38 miles northeast of Delta Junction, Alaska, near the Goodpaster River.

The existing 2-mile State road from the Richardson Highway to Rosa Creek (latitude 64° 16' 58" north, longitude 146° 07' 42" west) will be used to provide access to the beginning of the road.

WORK: The applicant proposes to construct a mine site, an access road, camp, winter road, transmission line, gravel pits, material sites, airstrip, and a tailings disposal facility for the development of the Pogo Mine. The total disturbed area for the project is projected to be approximately 1,170 acres. Table 1 attached.

The total wetland acres disturbed is approximately 306 acres of which 114 acres will be restored and an additional 21 acres of wetlands created in the off-river treatment works, Phase I material sites, and the recycle tailings pond (RTP); and 31 acres created in the Phase II and III material sites. A total of 1,906,028 cubic yards of fill will be placed in jurisdictional wetlands. Table 2 attached.

INDIVIDUAL COMPONENTS ARE SUMMARIZED BELOW:

Mine Site
The total wetland acres disturbed is projected to be 139 acres (37% of total), of which 44 acres (32% of wetlands) will be restored. 21 acres of wetlands will be created in the Phase I material sites and 31 acres created in Phase II and III ponds.

1525 Portal - Goodpaster Valley Area
The 1525 Portal – Goodpaster Valley Area includes the proposed facilities located near the existing camp in the Goodpaster valley and the facilities near the existing 1525 portal on the flank of Pogo Ridge, as well as the Phase III material sites south of the 1525 Portal on the west side of the Goodpaster Valley.

Proposed facilities include an expanded construction camp and office area, as well

as a laydown area to store equipment and supplies to be hauled to the site over the Goodpaster Winter Road. An expanded gravel pit will be required to provide borrow for pad and road construction. The existing portal bench will be expanded to provide area for the new water treatment plant. The access road to the 1525 portal will be reconstructed to allow access to the portal bench by highway trucks. The development rock stockpile will be enlarged for both mineralized and nonmineralized rock. A topsoil stockpile will store growth media. The non-mineralized development rock that is presently stockpiled at the site will be used as fill material in the laydown area and for road construction. This will free up the existing engineered polypropylene lined pad and allow placement of some additional mineralized development rock on the existing lined pad as temporary storage. If there is more mineralized rock than can fit on the existing lined pad, the excess mineralized rock will be temporarily stored immediately to the north of the existing lined pad and will be moved to the stockpile in upper Liese Creek within 2 years. New nonmineralized development rock will be placed near the north end of the rock storage area over the existing vegetative mat. The Phase III material sites, located in the Goodpaster River to the south of the existing camp facilities, consists of two borrow source areas within a 38 acre area (including access roads and growth media piles). The suitability of these sites has been confirmed by geotechnical drilling. The gravel borrow material initially required for the project will come from excavation of the material site near the 1525 portal and from excavation of the ponds required for the off-river treatment works. However, the site near the 1525 portal is limited in its long-term capacity by surrounding facilities and once the off-river treatment works is constructed and in use, no additional disturbance will be acceptable in that area. The Phase III material sites have been sited to provide additional gravel as needed throughout the project life for aggregate or road surfacing material.

1525 Portal-Goodpaster Valley Area Restoration

Reclamation and wetland restoration details for the 1525 Portal-Goodpaster Valley Area gravel borrow site are shown in Sheets 9 and 10. The borrow site will be converted to an overwintering pond connected to the Goodpaster River with emergent wetlands along the perimeter. Fill will be removed from flat to gently sloping wetlands and at the development rock stockpiles. The total wetland acres disturbed is projected to be 50 acres (51% of total), of which 20 acres (40% of wetlands) will be restored. An additional 10 acres of emergent wetland and overwintering habitat will be created in the 1525 Portal area and 27 acres in the Goodpaster Valley Phase III material sites.

Liese Creek Area

The Liese Creek Area includes major facilities associated with the mill buildings, permanent camp, shop and maintenance area, drystack tailings facility with RTP pond, mine portals, ventilation raise, material sites, growth media stockpiles, solid waste disposal, local access roads and diversion ditches (Sheets 5 - 7). Most of the access road from the 1525 Portal Area around the nose of Pogo ridge will be built with overlay construction. In order to reduce the long-term risk of destabilization of the talus slope on the nose of Pogo ridge that cut/fill construction could impose, a short portion of this route will be filled in a slough of the Goodpaster (Sheet 11). A bridge will be installed to cross lower Liese Creek. The portion of the access road from lower Liese Creek to the mill that is predominantly over wetlands will be built with overlay construction. The balance of the roads in the Liese Creek Area will be cut and fill. Road widths will depend upon intended use. Construction access roads will typically be 12′ wide to provide temporary access to support site development (Sheet 12). Roads for general use will vary between 32′ and 36′. Haul roads for development rock and drystack tailings will typically be 46′. (Sheets 13 and 14). Brush berms at the toe of road fills will help control erosion. The major benches at the mill site and the permanent campsite will be cut and fill (Sheets 15 and 16). Detached

ditches built along the top of the back slope of the roads will allow runoff to be directed to lower Liese Creek without coming into contact with the tailings haul roads. Erosion control structures and rock armor will be incorporated into the diversion ditches where necessary and prior to the flow re-entering Liese Creek (Sheet 17). Aufeis intercept benches will be constructed above the main diversion ditches around the perimeter of the drystack. The purpose of these benches is to cause local aufeis formation and thereby reduce aufeis formation in the main ditches. This will enhance the functionality of the main ditches during spring runoff and will help ensure that the water is diverted around the RTP as has been assumed in the model (Sheet 18). The Tailings Facility will be constructed in upper Liese Creek (Sheet 7) and will include the recycle tailings dam and pond (RTP), the drystack tailings facility, diversion ditches, seepage collection, and intake for the water treatment plant (Sheets 19 - 23). In order to construct the tailings facility, diversion ditches will first be constructed to divert the surface flow around the facility. Rock excavated from material sites will be used to construct the RTP dam, which will include a spillway designed to accommodate the probable maximum flood (PMF). Approximately 1 foot of organics and soil will be cleared and grubbed from the drystack footprint area and stockpiled for future use as growth media. A toe berm will be constructed out of quarried rock or non-mineralized development rock. A starter berm will be constructed in the drystack area out of rock excavated from material sites and colluvium excavated from the RTP impoundment area. Flow-through drains will be constructed to collect and channel any seepage and groundwater to the RTP. A 1.5-foot thick layer of non-mineralized rock will be placed as an erosion control/drainage blanket over the entire drystack footprint. After construction is complete and once the mill begins operations, the pressure filtered tailings will be placed in the tailings facility with conventional earthmoving equipment. Three rock quarry material sites will be located in the Liese Creek valley. Material site A (Sheet 24) is located at the base of the valley while material sites B and C (Sheets 25 and 26) are located above the RTP in the head of the valley. Rock from these sites will be used during construction, operations, and closure. During closure, the highwall cut faces will be stabilized and left in place. Pulling the outer crest of the fill over the pad to the highwall, grading to control surface water runoff towards Liese Creek, and blending with the local topography as much as possible will reclaim fill embankments. The recontoured surfaces will be ripped where compacted and respread with growth media. The surface solid waste facility constructed in material site B will be reclaimed by placing a soil cover over the waste and respreading with growth media. There are 4 major drainage structures in the Liese Creek Area. These include one bridge crossing at the mouth of Liese Creek and a culvert crossing at each of the following fills: 1) 1690 Portal; 2) Vent Raise Access Road; and 3) 1875 Portal. These oversize culverts were selected based on aufeis storage capacity criteria and are larger than required for seasonal flows. Other minor culverts will be installed in the Liese Creek area to maintain drainage as necessary.

Liese Creek Area Restoration

Due to the marginal hydrology in the area of many of the Liese Creek facilities, feasible restoration of wetlands in the Liese Creek area is limited to creation of emergent wetlands in the depressional areas in the RTP and Material Site A and the removal of culverts and associated fills at the Liese Creek crossings below the 1875 and 1690 portals and the vent raise road. (Sheets 27 and 28). The drystack tailings facility will be restored to uplands. In order to ensure the long-term stability and protection of the drystack, the final surface of the drystack will be sloped at 2% toward the perimeter in order to readily shed water. Perimeter ditches will channel water from the surface of the drystack and the surrounding hillslopes downstream around the drystack. In addition, a 1-foot armor layer of -4-free draining coarse rock will be placed as the first layer of the closure cover on the drystack. The armor layer is to protect the drystack from future erosion.

Although this rock will be covered with a soil layer to provide for revegetation with grasses, the overall goal at closure is to minimize water accumulation on the drystack surface. The total wetland acres disturbed is projected to be 70 acres (35% of total), of which 10 acres (14% of wetlands) will be restored. An additional 0.4 acres of wetlands will be created.

Airstrip Area

The Airstrip Area is located in the Goodpaster River valley north of the existing camp and north of the mouth of Liese Creek (Sheet 8). Proposed facilities in this area include access roads, a 3,000 foot airstrip and parking apron, fuel storage facilities, two Phase II gravel pits, a concrete batch plant and aggregate stockpile area, laydown areas, log yards, and growth media stockpiles. The area also includes the off-river treatment works, which is the agency preferred alternative for release of treated water into the Goodpaster River (Sheet 29). The access road to the airstrip has been relocated slightly to the south from earlier layouts in order to minimize the culvert crossings in potential flood channels. The laydown areas have been modified to center around upland areas where possible and to leave flood channels open where feasible. The Phase II gravel pits will be used to supply gravel after the off-river treatment works is operational.

Airstrip Area Restoration

The wetland restoration plan for the airstrip area is to remove fill, culverts, and geotextile from wetland fills. The off-river treatment works will be reclaimed by creating emergent wetlands and over-wintering habitat by connecting the ponds to the river channel (Sheet 30). Fill that is removed from wetlands during restoration will be placed on either upland or mosaic fills. The mosaic fills will be recontoured for drainage and terrain. The edges will be tapered and the pad surface will be ripped or scarified, spread with growth media (Sheets 32-35). The total wetland acres disturbed is projected to be 19 acres (25% of total), of which 15 acres (79% of wetlands) will be restored. An additional 14 acres of wetlands will be created.

Shaw Creek Hillside Road

The 49-mile all season Shaw Creek Hillside Road will provide access to the project. The existing 2-mile State road from the Richardson Highway to Rosa Creek will be used to provide access to the beginning of the road. The Shaw Creek Hillside Road footprint is segregated by major areas: Access Road, Material Sites, Construction Camps & Airstrips, Log Yards, Staging Area and the Shaw Creek Winter Road. The total wetland acres disturbed is projected to be 135 acres (19% of total), of which 46 acres (34% of wetlands) will be restored.

Access Road

For the purposes of compiling the footprint for the Access Road, the road has been broken up into 7 segments according to the manner in which it will be restored. For example, the first segment of the road, Station 00 to 65, is primarily overlay construction that will be removed at closure. The second segment, Station 65 to 378, is primarily cut and fills construction with marginal hydrology where wetlands cannot feasibly be restored. The road alignment station numbers that correspond to the 7 segments are shown along the road on Sheets 36 to 41. The Shaw Creek Hillside Road will be constructed using cut-and-fill techniques where appropriate. Typical sections are shown on Sheets 42 to 44. Side-cut borrow will be used where feasible to generate the necessary random fill material. The disturbance width will vary by the steepness of the local terrain, varying from 48 ft in flat terrain to 300 ft in steeper areas. Fill volume and footprint values are based on the preliminary design footprint, as well as an additional allowance of 15 feet for compacting and shaping the slash into sediment catchment berms along the downhill toe. The volumes and footprints include an allowance for slash

volume, as well as provision for the truck safety ramps and truck passing lanes on the road section between upper Shaw Creek and the Goodpaster valley. Bridges are proposed at the Goodpaster River and Shaw, Gilles, Caribou, Keystone and Rosa Creeks (Sheets 45 - 51). Rock armoring will be placed as necessary to protect the road embankment, but placement of armoring in the active channel will be minimized. Cross drainage culverts will be installed on minor drainages and on long grades as needed. In order to help minimize erosion, small spruce tree sections, including fully needed boughs and limbs salvaged from clearing operations, may be placed in road ditches or at the toe of slopes. The natural vegetation will be left intact in as close proximity to the construction disturbance as possible in order to trap sediments before they reach a watercourse. In order to avoid a 300-foot high backslope excavation that would otherwise be required to remove a steep rock escarpment in the Wolverine Creek valley, a 150-foot long reach of the Wolverine Creek channel will be filled and the channel reconstructed in an adjacent flood channel. (Sheets 52 - 54).

Access Road Restoration

Reclamation of the road will have four objectives: first, to remove bridges and culverts and construct ditches and water bars so as to disperse the surface runoff in a manner that will promote long-term stability and revegetation; second, to remove fills from flat wetland areas; third, to scarify and fertilize the road surface so as to promote revegetation; and fourth, to construct appropriate physical barriers so as to minimize future use by vehicular traffic that could cause damage to wetlands. The Alternative Management Option described in Appendix D.3 of the Pogo Draft Environmental Impact Statement (DEIS), the footprint tables and reclamation techniques to be applied to the road assume that the road will be reclaimed only from Gilles Creek to the Goodpaster River. Reclamation of disturbed areas will include removing drainage structures and restoring or stabilizing natural drainage paths. Bridge structures and abutments will be removed. Foundation piling will be cut off below surrounding grade and buried, except at the Goodpaster River, where all piling will be pulled. The road prism will not be removed, except in flat wetland areas. In mosaic wetlands, the roadbed will be recontoured or graded for drainage. Water bars and/or ditches will be constructed to control accumulation of runoff and erosion. The road surface will be scarified/ripped, fertilized, and prepared as necessary to establish suitable ground cover. The road will not be fertilized within 200 feet of water bodies. By the end of mine life, most of the disturbed areas beyond the road surface and ditches will have been naturally revegetated and will be left undisturbed at closure. To minimize future use by vehicular traffic, bridges and bridge abutments will be removed and barrier berms of oversize shot rock will be constructed near each stream crossing to restrict vehicle access.

The total wetland acres disturbed is projected to be 86 acres (20% of total), of which 10 acres (12% of wetlands) will be restored. Restoration is not assumed for the 20 acres of wetlands (included in the 86 listed above) disturbed by the portion of the road from Rosa Creek to Gilles Creek.

Material Sites for Road Construction

Construction of the road may require developing up to 22 different material sources. Material Site 1 is an existing State of Alaska borrow site. A detailed plan of each new material site that impacts wetlands is presented in Sheets 55 to 61. Typical sections are presented in Sheets 62 and 63. The 22 possible sites are at locations found to have potential to supply suitable construction aggregate in locations that minimize the required haul distance. Except for sites that will only supply sand for bulk fill; the majority of the sites are to supply shot-rock for embankment construction, riprap, and road topping material.

Material Site Restoration

Material sites developed for construction and not needed for ongoing road

maintenance will be reclaimed as outlined on the individual site plans shown in Sheets 55 to 61 and the typical sections shown in Sheets 62 and 63. The total wetland disturbance is 10 acres (5% of total), of which 0 acres (0% of wetlands) will be restored.

Temporary Construction Camps and Airstrips
Two temporary camps are proposed in conjunction with road construction. Periods of operation will depend on road construction startup, but no camp will be operated for longer than 12 months. The camps will accommodate 20 to 35 persons each. Each camp would include development of a 2,000-foot temporary airstrip built on the road alignment. The Goodpaster camp (Sheet 64) is adjacent to Material Site 23 near the west abutment of the bridge over the river. This camp is necessary to support the road construction that will proceed back toward Shaw Creek between the time the winter road is open and the bridge over the Goodpaster River and the new roads and airstrip on east side of river are complete.

Temporary Construction Camp and Airstrip Restoration
Restoration of the temporary camp at the Goodpaster will entail removal of the fill from the flat wetlands. The total wetland acres disturbed is projected to be 4.2 acres, of which 4.2 acres (100% of wetlands) will be restored.

Log Yards
Log yards will be required to provide temporary storage for timber required by the State of Alaska to be salvaged from the road and powerline clearing. Logs will be skidded or hauled to the log yards, where they will remain until road construction advances sufficiently that the logs can be removed. Cut and fill road construction will be required to provide access into the log yards (Sheet 65).

Log Yard Restoration
Fill will be removed from the wetland portion of the log yards. The wetland acres disturbed is projected to be 4.7 acres (26% of total), of which 0.5 acres (10% of wetlands) will be restored.

Staging Area
A staging area will be located near the intersection of the access road from the Richardson Highway to the Trans Alaska Pipeline (Sheet 66). Fill from Material site 1 will be used to construct the staging area, which will initially serve as a staging area for road construction and will eventually include a maintenance shop and an employee bus terminal. Employees will leave their personal vehicles in the parking area and will be transported to the mine site by bus. The entire area will be fenced and gated for security. Although the applicant had proposed a staging area in uplands near the pipeline, the revised location is proposed as a response to public comment in order to mitigate impacts from traffic on the existing Shaw Creek road.

Staging Area Restoration
Fill will be removed from the wetland portion of the staging area. The total wetland acres disturbance is projected to be 6.2 acres (75% of total), of which 6.2 acres (100% of wetlands) will be restored.

Shaw Creek Winter Road
The Shaw Creek Winter Road will be used to mobilize construction equipment, materials, temporary camp facilities, and fuel to establish construction headings near Gilles Creek. A new headache rack would be installed near the Trans Alaska Pipeline to protect the pipeline from oversize loads (Sheet 67). The first 9 miles would then follow the recently used existing winter road. From mile 9 to mile 15, the trail will require mechanical clearing and limited regrading. An alternative winter access route has been identified that may provide a means to

access the Shaw Creek Hillside route toward Gilles Creek with less disturbance and more synergy with project development (Sheet 40). This route would follow the existing network of winter roads, used as recently as 2001 for winter logging access to upland areas east of Caribou Creek, to within a 1/4 mile of the transmission line alignment. Clearing and Winter Road development along the transmission line, which would also facilitate transmission line construction, would then provide access to the Shaw Creek Hillside Road. Clearing and pioneer trail development could then readily proceed along the road alignment toward Gilles Creek for establishment of the construction camp. Use of this alternative route will depend upon snow, frost, and aufeis conditions, but if used would result in less wetland disturbance because only a ¼ mile of trail would be cleared outside the road and transmission line clearing limits as opposed to the 6 miles.

Shaw Creek Winter Road Restoration

With only limited surface disturbance and with no imported fill, the wetlands will be restored by natural revegetation. The fill near the new headache bar will not be removed in order to support future use of the winter road by others. The total wetland acres impacted is projected to be 24 acres (77% of total), of which 24 acres (100% of wetlands) will be restored.

Transmission Line

A 138 kV transmission line would be constructed generally parallel to the Shaw Creek Hillside Route and would tap Golden Valley Electric Association, Inc.'s existing transmission system at a new substation to be constructed near the TAPS right of way near Shaw Creek. The transmission line will be of wooden H-pole construction (Sheet 68). The transmission line alignment has been carefully selected to maximize its proximity to the road. Clearing widths for the transmission line will vary depending upon the terrain and type of vegetation up to a maximum of 125 feet. Where possible, the clearing limits for the powerline and the road merge, reducing the overall clearing required. All vegetation smaller than 9" will be cleared by hydro-axing or mastication (vegetation grinding), or shearing in winter. Vegetation along streams will only be cleared to the extent necessary to allow for construction and maintenance. The vegetation may not be cleared if it is determined to be sufficiently below the conductors, as may be the case with spans over depressions, gullies, or swales. The total wetland acres disturbed is projected to be 7.7 acres (17% of total), of which 2.8 acres (36% of wetlands) will be restored.

Transmission Line Structures and Construction Footprint

Construction of the transmission line will require minor access and spur trail construction in some areas, and will result in minor disturbance at each of the pole installations. Where the power line will not be constructed adjacent to the road, some clearing and spur trail development will be necessary between the access road and the power line corridor for equipment access for pole installation and stringing line. At the access spurs, fill will be placed as needed to create ramps extending 20 to 40 feet beyond the toe of the road embankment. Trail development along the powerline would be required in limited areas. Access disturbance will be minimized to the extent feasible and would be sited to minimize disturbance of wetlands. Clearing in wetlands in the power line corridor would be limited to areas where vegetation would be over 10 feet tall. At each pole structure, some ground leveling might be required for pole installation; and pole and anchor installation would require augering or excavation and backfill. Some of the wetlands would require special pile foundations for the poles. Spur trails to access the pole structures will be 20 ft wide and vary in length depending on the power line's distance from the road. Each pole structure is expected to require between 3,000 and 5,000 square feet of disturbance depending on terrain. Up to 300 square feet of the disturbance will receive borehole castings. Approximately 90-95% of this surface disturbance would occur within the cleared Right of Way (ROW).

Transmission Line Structures and Construction Footprint Restoration
Sidehill cuts necessary to provide access along the ROW for construction will be reclaimed upon completion of construction by installation of water bars, reshaping to control erosions, and spreading of growth media. Transmission line reclamation will include removing all wire and support structures by cutting the poles off at ground level and salvaging all structure components. Screw anchors will be trimmed 0.5 feet below ground level. Any significant disturbance resulting from efforts to decommission the transmission line will be graded and seeded. The wetland acres disturbed is projected to be 7.7 acres (18% of total), of which 2.8 acres (38% of wetlands) will be restored.

Goodpaster Winter Road
The existing Goodpaster Winter Road will be used to mobilize approximately 700-800 loads of equipment and supplies to the Pogo site (Sheet 69). This same winter road was used during the winter of 1997/98 to mobilize 126 loads of equipment and supplies to Pogo in support of the advanced exploration effort. Use of the winter road is necessary in order to allow construction to begin as soon as possible on the mill facilities at the site, which is the critical path to overall project construction. Mechanized land clearing, regrading, and completion of several fills, as well as the spreading of traction sand on Quartz Lake Hill and Progressive Creek Hill will be jurisdictional. Thirty-two acres of wetlands would be jurisdictionally impacted.

Goodpaster Winter Road Modifications
The goal of modifications will be to widen the trail sufficiently so as to allow simultaneous use by recreationalists and industrial traffic. It is expected that the truck traffic will travel in convoys. The added trail width will provide an additional margin of safety for snowmachines to safely pass the convoys. Earthwork modifications will occur in the Quartz Lake Hill, Progressive Creek Hill, and Seven Mile Creek areas. Systematic clearing along the trail is proposed between Quartz Lake and the Goodpaster River.

Quartz Lake Hill
The trail in this location winds through heavily forested terrain on moderate slopes. A minor amount of clearing and earthwork will result in substantial improvements in sight distance along the trail and in useable trail width (Sheets 70 and 71).

Progressive Creek Hill
The trail at this location goes through a small cut at the crest of the hill and has up to 15% grade on either side of the crest. The trail on the eastern slope traverses the top of a narrow fill that is not safe for the volume of traffic proposed. A cut will be made near the top of the hill to generate sufficient borrow to widen and regrade the fill (Sheets 72 and 73).

Seven Mile Creek
The trail at this location traverses along a sideslope that is not safe for the volume of traffic proposed. Earthwork will be completed to regrade this portion of the trail (Sheets 74 and 75).

Quartz Lake to Goodpaster River Widening
Most of the recreational traffic on the trail occurs between Quartz Lake and the first river crossing at the Goodpaster River. This reach will be widened approximately 10 feet by mastication. This treatment is preferable to a hydro-axe in order to prepare the trail surface sufficiently to provide a reasonable surface for snow machines, even in a low snow year. Root disturbance and woody debris fills fall under the Corps jurisdiction, therefore the area and fill volumes have been included.

Goodpaster Winter Road Restoration
The balance of the trail will return to wetlands as has been demonstrated by previous use of the trail. The wetland acres disturbed is projected to be 24 acres (75% of total), of which 22 acres (92% of wetlands) will be restored.

PURPOSE: The project purpose is to develop the required infrastructure to construct, develop, operate, and ultimately reclaim the Pogo Gold Mine. The mine would process between 2,500 and 3,500 tons per day of ore for approximately 11 years to supply an on-site mill, which would produce approximately 500,000 ounces of gold per year.

ADDITIONAL INFORMATION: The regional manager for Teck-Pogo Inc is Mr. Karl Hanneman, for additional information he can be reached at (907) 455-8325. Table 1 and 2 are attached to this Public Notice to explain surface disturbance. The Corps has included proposed conditions for the 404 permit as discussed in the Draft EIS for the Pogo Project.

The applicant evaluated each individual wetland polygon proposed to be disturbed to develop an appropriate reclamation technique.

In general, the applicant proposes the following: All flat to gently sloping wetland areas will be restored by removal of fill. Depression areas will be restored to emergent wetlands where the hydrology permits. Culverts and fill will be removed from channels and active floodplains. Where sufficient hydrology permits, gravel pits constructed in the Goodpaster floodplain uplands or black spruce permafrost wetlands will be converted to high value overwintering ponds and emergent wetlands. In general, the term restoration is applied to areas where fill will be removed and the hydrology is sufficient to restore the area to wetlands. In areas of marginal hydrology where restoration is not feasible, the term reclamation has been used to encompass the regrading, stabilization, and revegetation activities that will be completed.

Not all portions of this project are under the jurisdiction of the Corps of Engineers. The Corps does not regulate the hydro-axing or grinding of wetland vegetation. The Corps would regulate wood waste if left in piles in wetlands.

The Corps regulates the placement of dredge and or fill material into waters of the United States. The Corps typically regulates the placement of fill for activities such as roads, pads, berms, dikes or when the root mass is overturned by vegetation grinding or mechanized land clearing. The Corps considers mechanized land clearing of wetlands a discharge of fill material into waters of the United States. Land clearing operations involving vegetation removal with mechanized equipment such as front-end loaders, backhoes, or bulldozers with sheer blades, rakes, or discs in wetlands; or windrowing of vegetation, land leveling, or other soil disturbances in wetlands are placement of fill material under Corps jurisdiction. The placement of fill material back into an area from which the wetlands were cleared is also regulated as part of the placement of fill material into waters of the United States. At the tailings disposal facility the wetlands will be mechanically removed. An erosion blanket will be placed back into the wetlands. The erosion blanket will convert the wetlands to uplands. The tailings will be placed onto the blanket, which the Corps considers"upland". The Corps does not regulate fill placement into "uplands". There is no Corps Department of Army (DA) permit required for the placement of the dry stack tailings. The dry stack-tailing disposal requires a solid waste permit from the Alaska Department of Environmental Conservation (ADEC). A DEIS was prepared for this proposed operation and released for public review. The Environmental Protection Agency (EPA) and Alaska Department of Natural Resources (ADNR) as part of the public process held formal public hearings. The applicant's original proposal was

analyzed in the DEIS. The Corps Public Notice represents the preferred alternative for development of the Pogo Gold Mine. The Public Notice is being released concurrently with the Final Environmental Impact Statement (FEIS) for the project. The complete DA application has not been included in the Public Notice. The Public Notice is meant to be a summary document. Complete copies of the DA permit application can be viewed at the Corps of Engineers, Fairbanks Field Office, 3437 Airport Road Suite 206, Fairbanks, Alaska; or the Corps of Engineers, Regulatory Branch 2204 Third Street, Elmendorf AFB, Alaska; or at Teck-Pogo Incorporated, 3520 International Street, Fairbanks, Alaska.

MITIGATION: As a result of the EIS review and public process, the applicant has incorporated into the project the following mitigation efforts to reduce impacts to the aquatic environment:

In the 1525 Portal-Goodpaster Valley Area, the construction camp pad and growth media footprints were consolidated.

In the Liese Creek Area, a stockpile was added in upper Liese Creek to accommodate storage of the growth media that will be salvaged from the drystack footprint. An erosion control/drainage blanket will be constructed in the drystack tailings area prior to tailings placement.

In the Airstrip Area, the laydown, apron, and growth media footprints were adjusted to minimize the fill placed in wetlands and sloughs and to provide for flood channels. Provisions were added for log yards for timber that will be salvaged during construction.

Along the Shaw Creek Hillside Road, material site boundaries were adjusted to avoid or minimize wetlands. Log yards were added, and an alternative Winter Road in Shaw Creek was identified that may reduce impacts while still providing access to the middle construction heading.

Material Site 2 was dropped from consideration based on geotechnical drilling results.

The staging area was relocated to a site near the Richardson Highway.

Along the Transmission Line, the alignment was adjusted to more closely follow the road between upper Shaw Creek and Goodpaster and thereby avoid disturbance in Sutton Creek.

Along the Goodpaster Winter Road, modifications were proposed to improve safety for both industrial and recreational vehicles.

The minimization of project footprint in wetlands played a major role in the following:

The decision to locate the mill out of the Goodpaster Valley.

The placement of all major facilities on the east side of Goodpaster in order to reduce risks to the river.

The decision to locate the mill in Liese Creek (a small ephemeral stream with no surface connection to the Goodpaster River) rather than on Pogo ridge.

The selection of upper Liese Creek, after thorough review of many alternatives, for placement of the drystack tailings facility.

The selection of the all-season Shaw Creek Hillside Road for access in order to reduce long-term risks to the Goodpaster River posed by alternative access modes.

The siting of the Shaw Creek Hillside Road to avoid wetland areas, cross drainages at right angles, utilize bridges on larger drainages and minimize wetland footprints.

The selection of material site locations to avoid wetlands.

The routing of the transmission lines in close proximity to the road to reduce wetland footprints and reduce the number of drainages affected by the project.

The use of brush berms along the toe of fills to control erosion.

The siting of the airstrip, batch plant, and laydown areas to avoid wetlands and provide for flood channels in the Goodpaster Valley.

The restoration of flat wetlands by removal of fill at project closure.

The reclamation of valley material sites to create new wetland areas in ponds with emergent vegetation and over wintering.

After following the avoidance and minimization sequencing described above, including the creation of wetlands, the applicant is left with 140 acres of wetlands that are permanently lost. To offset this loss the applicant has proposed an in lieu fee payment. The payment would go to a Corps approved conservation fund. The applicant has proposed to the Corps an in lieu payment of $70,000.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Alaska Department of Environmental Conservation.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, reasons for holding a public hearing.

CULTURAL RESOURCES: The latest published version of the Alaska Heritage Resources Survey (AHRS) has been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the National Register of Historic Places. As well a cultural resources survey was completed for the project area. As a result of the survey and negotiations with the SHPO a Programmatic Agreement (PA) was developed for this project. The programmatic agreement was signed by EPA on June 10, 2003, by ADNR on June 18, 2003, by the Alaska SHPO on June 27, 2003, by ADNR on June 18, 2003, by the DA on July 8, 2003, and executed by the signature of the Advisory Council on Historic Preservation on August 12, 2003. The PA describes how to handle present and potentially undiscovered cultural resources. The PA is found in the FEIS as Appendix C.1.

ENDANGERED SPECIES: No threatened or endangered species are known to use the project area. Preliminarily, the described activity will not affect threatened or endangered species, or their critical habitat designated as endangered or threatened, under the Endangered Species Act of 1973 (87 Stat. 844). This application is being coordinated with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. Any comments they may have concerning endangered or threatened wildlife or plants or their critical habitat will be considered in our final assessment of the described work.

ESSENTIAL FISH HABITAT: The proposed work is being evaluated for possible effects to Essential Fish Habitat (EFH) pursuant to the Magnuson Stevens Fishery Conservation and Management Act of 1996, 16 U.S.C. et seq and associated federal regulations found at 50 CFR 600 Subpart K. The Alaska District includes areas of EFH as Fishery Management Plans. We have reviewed the January 20, 1999, North Pacific Fishery Management Council's Environmental Assessment to locate EFH area as identified by the National Marine Fisheries Service. We have determined that the described activity within the proposed area will not adversely affect EFH, including anadromous fish and federally managed fishery resources.

SPECIAL AREA DESIGNATION: The mine is located on State of Alaska managed land.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity and

its intended use on the public interest. Evaluation of the probable impacts, which the proposed activity may have on the public interest, requires a careful weighing of all the factors that become relevant in each particular case. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision should reflect the national concern for both protection and utilization of important resources. All factors, which may be relevant to the proposal, must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. For activities involving Section 404 discharges, a permit will be denied if the discharge that would be authorized by such permit would not comply with the Environmental Protection Agency's Section 404(b)(l) guidelines. Subject to the preceding sentence and any other applicable guidelines or criteria (see Sections 320.2 and 320.3), a permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Your comments will be used in the preparation of Record of Decision for the Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the described work, with the reference number, should reach this office no later than the expiration date of this Public Notice to become part of the record and be considered in the decision. Please contact Mr. Victor Ross at (907) 753-2716, toll free from within Alaska at (800) 478-2712, or by email at victor.o.ross@poa02.usace.army.mil if further information is desired concerning this notice.

AUTHORITY: This permit will be issued or denied under the following authorities:

(X) Discharge dredged or fill material into waters of the United States - Section 404 Clean Water Act (33 U.S.C. 1344). Therefore, our public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

A plan and Notice of Application for State Water Quality Certification are attached to this Public Notice.

District Engineer
U.S. Army, Corps of Engineers

Attachments

PROPOSED 404 PERMIT CONDITIONS POGO GOLD MINE

The approved Department of Army 404 permit boundary shall be clearly marked at all locations except along the linear portions of the Shaw Creek Hillside Road and Transmission Line. A brush berm or equivalent shall be placed on the wetland permit boundaries down gradient of flow to keep sediment from leaving the project site. The berm footprint shall not exceed the approved permit boundary.

Natural drainage patterns shall be maintained in the Department of Army 404 permit area by the installation of culverts in sufficient number and size under access roads to prevent flooding or excessive drainage of adjacent wetlands. The flood channels identified in the approved permit boundary in and around laydown yards and pads shall be clearly marked and shall remain undisturbed except as shown in the approved permit boundary.

No fill or construction materials shall be stockpiled on adjacent wetlands or waters outside the approved footprint.

In areas where growth media is to be salvaged, defined in the reclamation plan filed with the State of Alaska, growth media shall be segregated from non-organic overburden that is not growth media. The growth media shall be segregated and protected from erosion and contamination and shall not be buried by tailings, or waste rock.

All surface disturbances in wetlands shall be confined to the project footprint to prevent unnecessary damage to adjacent wetland areas. No motorized equipment shall be operated, stored or serviced outside of approved areas. No fuel, lubricants, or other hazardous substances shall be stored below the Ordinary High Water level of the Goodpaster River.

All of the measures described in the Pogo reclamation plan shall be included in the DA permit by reference. All measures involving reclamation in wetlands shall become enforceable conditions of the Department of Army, Section 404 permit.

All of the measures described in the Programmatic Agreement for Section 106 of the National Historic Preservation Act shall be included in the DA permit by reference. All measures within the Corps jurisdiction are enforceable conditions of the Department of Army (DA), Section 404 permit.

The permittee shall notify the District Engineer (DE) of any proposed changes to the reclamation bond amount. The DE shall concur with any bond changes that affect wetland restoration and or mitigation sites.

The DA permit shall be reviewed in 5 years as part of the State of Alaska five-year environmental audit. Conditions of the DA permit, restoration and reclamation standards, wetland restoration success and bond values shall all be reviewed for adequacy. The environmental audit results may result in DA permit changes.

Should the DE determine the reclamation bond posted by the permittee, is inadequate to guarantee wetland restoration and or mitigation site(s) reclamation, the DE, at any time, may require additional bond value to be posted for the project.

The final reclamation goal for vegetative success in wetland areas is to promote natural re-vegetation with at least 70% live plant cover over the entire reclaimed area prior to bond release.

Seeding, planting, live transplants of ground cover, and/or fertilizing of re-contoured ground to promote re-establishment of natural plant communities is acceptable to meet the cover criteria. Species to be used for seeding and planting should follow this order of preference: 1) species native to the site; 2) species native to the area; 3) species native to the state. Note: If native species are not available, only non-native species, which are known to not reproduce in the general project area, may be used for revegetation. The following species are known to be highly invasive and may not be used under any circumstances for revegetation: Alopecurus arundinacea (meadow foxtail), A. pratensis (creeping foxtail), Lythrum salicaria (purple loosestrife), Melilotus alba (white sweet clover), M. officinalis (yellow sweet clover), Phalaris arundinacea (reed canary grass), Phleum pratense (timothy), and Polygonum cuspidatum (known by the common names: Japanese knotweed, crimson beauty, Mexican bamboo, and Japanese fleece flower) Lysimachia terristris (swamp loosestrife/yellow loosestrife) Phragmites australis (common reed).

Table 2. Summary of Project Restoration

Teck-Pogo Inc.
Pogo Project
Section 404 Permit Application
August 15, 2003

	Description	Wetland Fill (yd^3)	Wetland Acres Disturbed	Wetland Acres Restored	Wetland Acres Created	Reclamation Comments
1	Mine Site	1,264,805	138.9	44.4	52.3	See individual tables.
2	Access Road	595,786	135.9	45.5	0.0	See individual tables.
3	Transmission Line	6,380	7.7	2.8	0.0	See individual tables.
4	Goodpaster Winter Road	39,057	24.0	21.6	0.0	See individual tables.
	Subtotal	**1,906,028**	**306.5**	**114.3**	**52.3**	

Table 1. Summary of Project Footprint

Sec.	Description	Fill (yd^3)	Total Acres Disturbed	Any portion Jurisdictional?	Construction Comments
1	Mine Site	3,457,509	372.0	Yes	See individual tables
2	Shaw Creek Hillside Road	4,066,791	715.1	Yes	See individual tables
3	Transmission Line	42,703	45.5	Yes	See individual tables
4	Goodpaster Winter Road	52,434	31.7	Yes	See individual tables
	Subtotal	**7,619,437**	**1,164.3**		

eck-Pogo Inc.
Pogo Project
Section 404 Permit Application
August 15, 2003

Table 2. Summary of Project Restoration

	Description	Wetland Fill (yd^3)	Wetland Acres Disturbed	Wetland Acres Restored	Wetland Acres Created	Reclamation Comments
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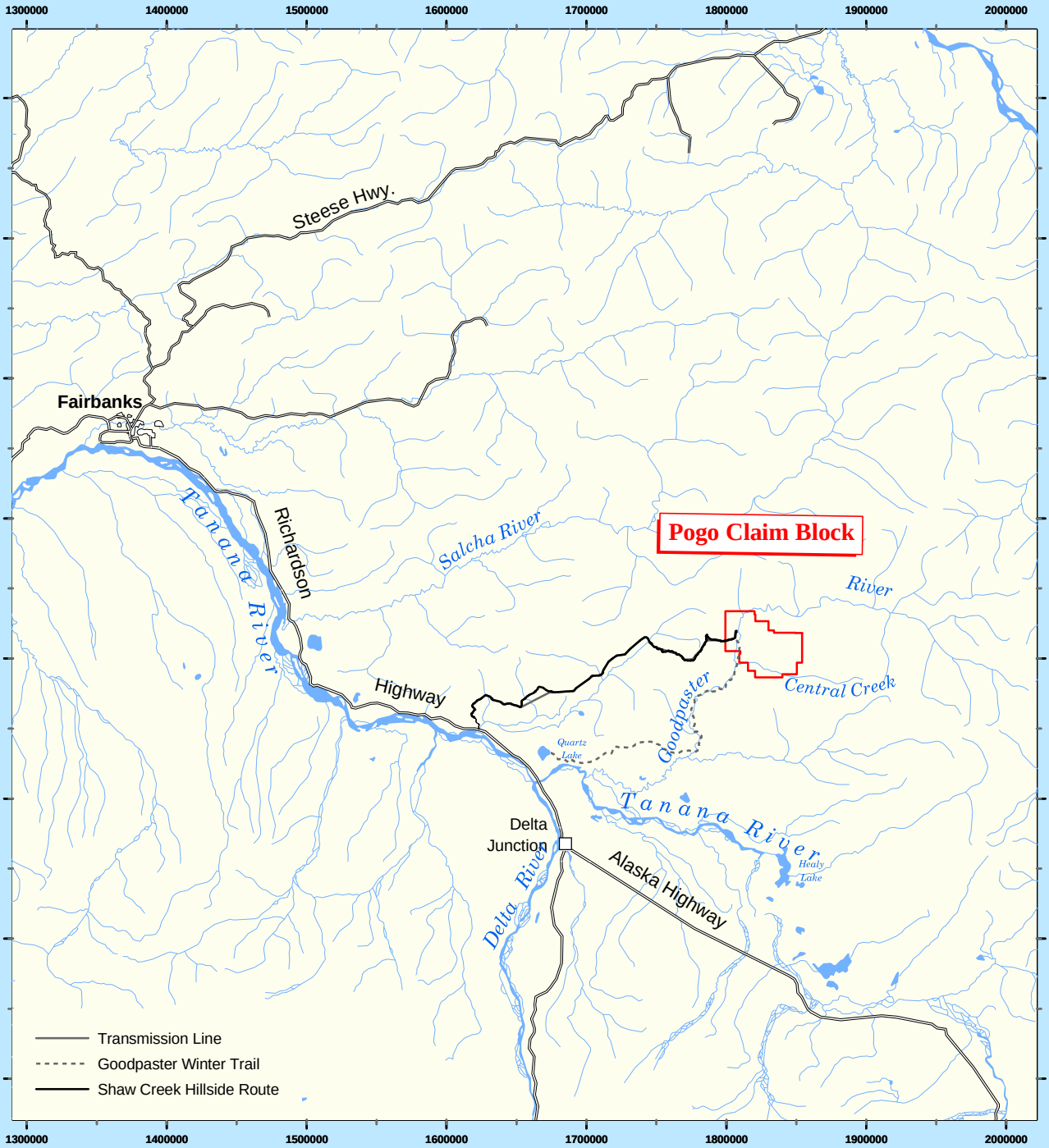
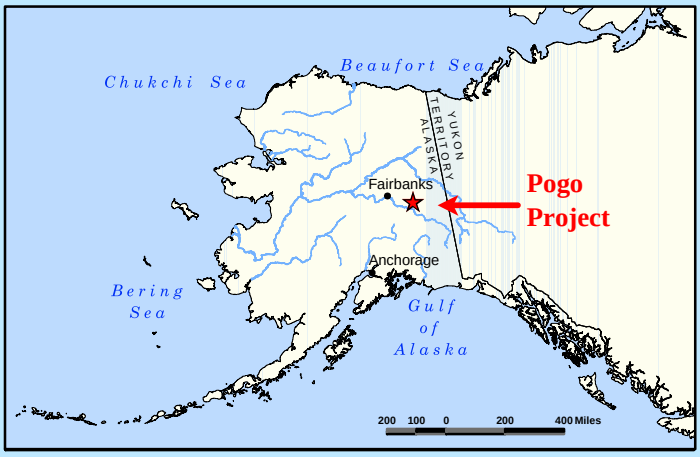
	Subtotal	**1,906,028**	**306.5**	**114.3**	**52.3**	

Q-1996-0211
GOODPASTER 1





10 0 10 20 30 40 50 Kilometers

5 0 5 10 15 20 25 30 Miles

N W E S

Map base: US DMA DCW
Projection: ASP Zone 3;
Datum: NAD 83

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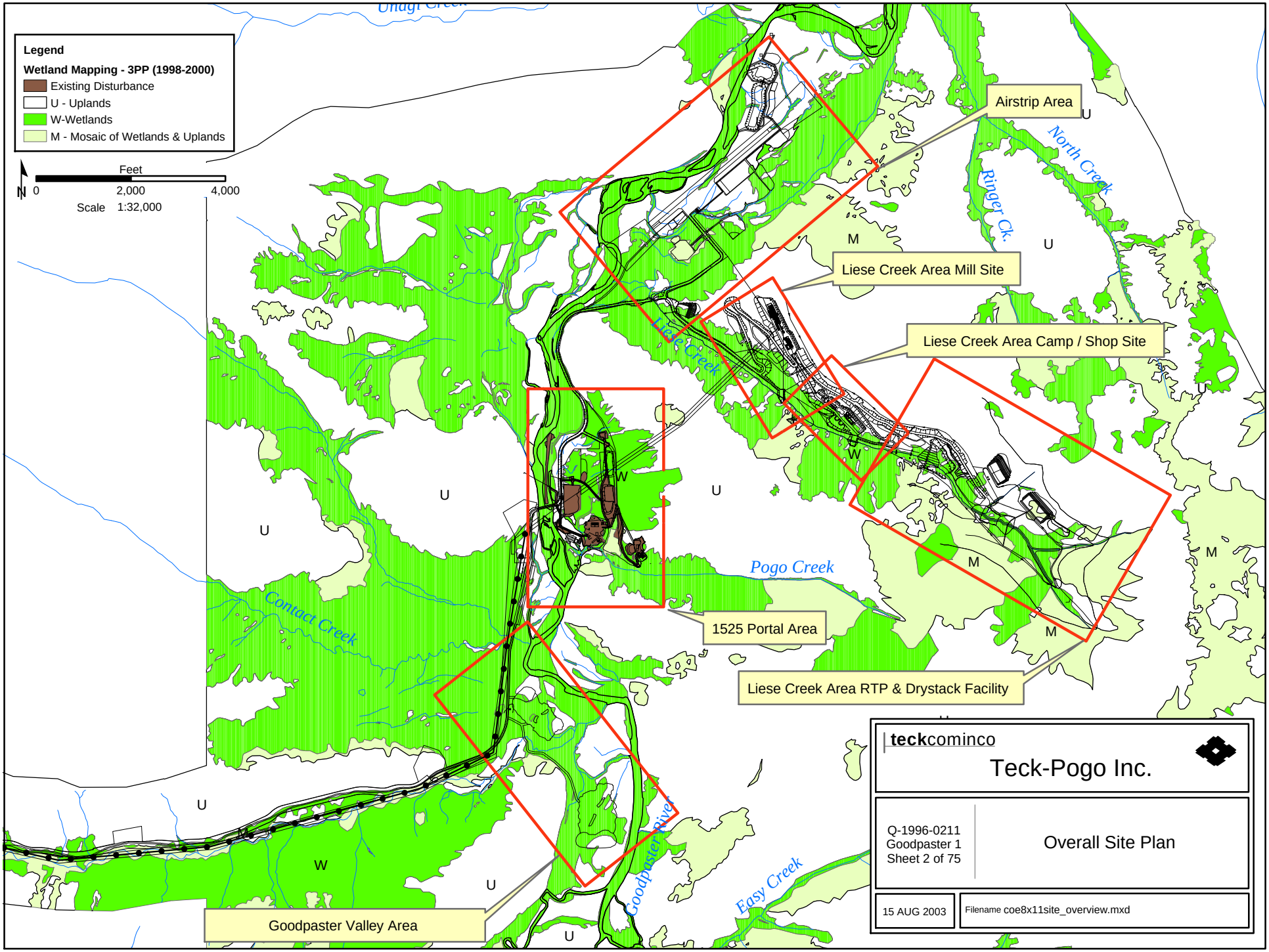
Q-1996-0211
Goodpaster 1
Sheet 1 of 75

Pogo Project General Location Map

15 AUG 2003

File: \COE\Pogo Project General Location Map.mxd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Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
N
Feet
0
2,000
4,000
Scale 1:32,000
Airstrip Area
Liese Creek Area Mill Site
Liese Creek Area Camp / Shop Site
1525 Portal Area
Liese Creek Area RTP & Drystack Facility
Goodpaster Valley Area
North Creek
Ringer Ck.
Liese Creek
Pogo Creek
Contact Creek
Goodpaster River
Easy Creek
U
M
W
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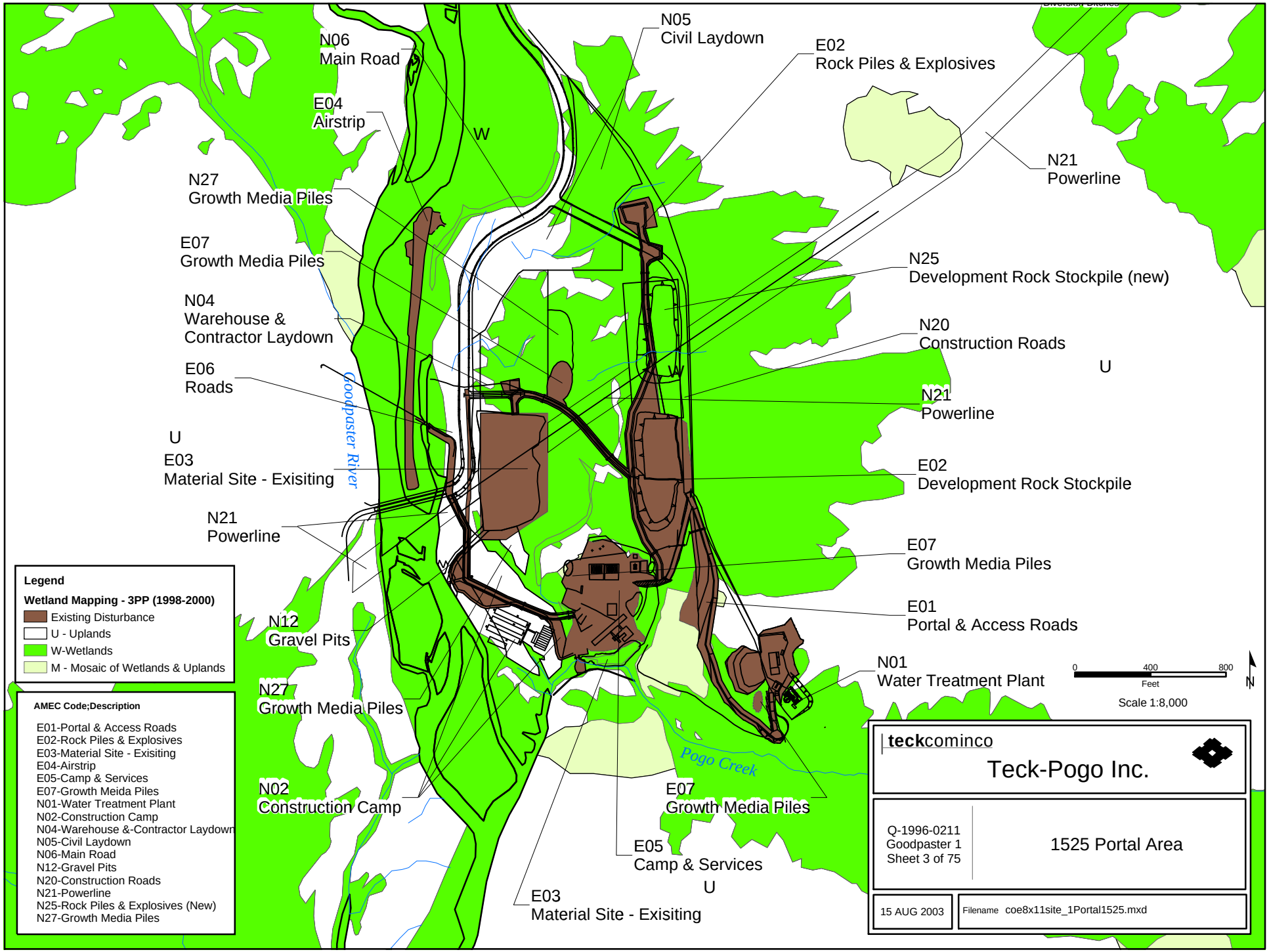
Q-1996-0211
Goodpaster 1
Sheet 2 of 75
Overall Site Plan
15 AUG 2003
Filename coe8x11site_overview.mxd


N06
Main Road
N05
Civil Laydown
E02
Rock Piles & Explosives
E04
Airstrip
W
N21
Powerline
N27
Growth Media Piles
E07
Growth Media Piles
N25
Development Rock Stockpile (new)
N04
Warehouse &
Contractor Laydown
N20
Construction Roads
U
E06
Roads
Goodpaster River
N21
Powerline
U
E03
Material Site - Exisiting
E02
Development Rock Stockpile
N21
Powerline
E07
Growth Media Piles
E01
Portal & Access Roads
N12
Gravel Pits
N01
Water Treatment Plant
N27
Growth Media Piles
Pogo Creek
N02
Construction Camp
E07
Growth Media Piles
E05
Camp & Services
U
E03
Material Site - Exisiting
Legend
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
AMEC Code;Description
E01-Portal & Access Roads
E02-Rock Piles & Explosives
E03-Material Site - Exisiting
E04-Airstrip
E05-Camp & Services
E07-Growth Meida Piles
N01-Water Treatment Plant
N02-Construction Camp
N04-Warehouse &-Contractor Laydown
N05-Civil Laydown
N06-Main Road
N12-Gravel Pits
N20-Construction Roads
N21-Powerline
N25-Rock Piles & Explosives (New)
N27-Growth Media Piles
0
400
800
Feet
Scale 1:8,000
N
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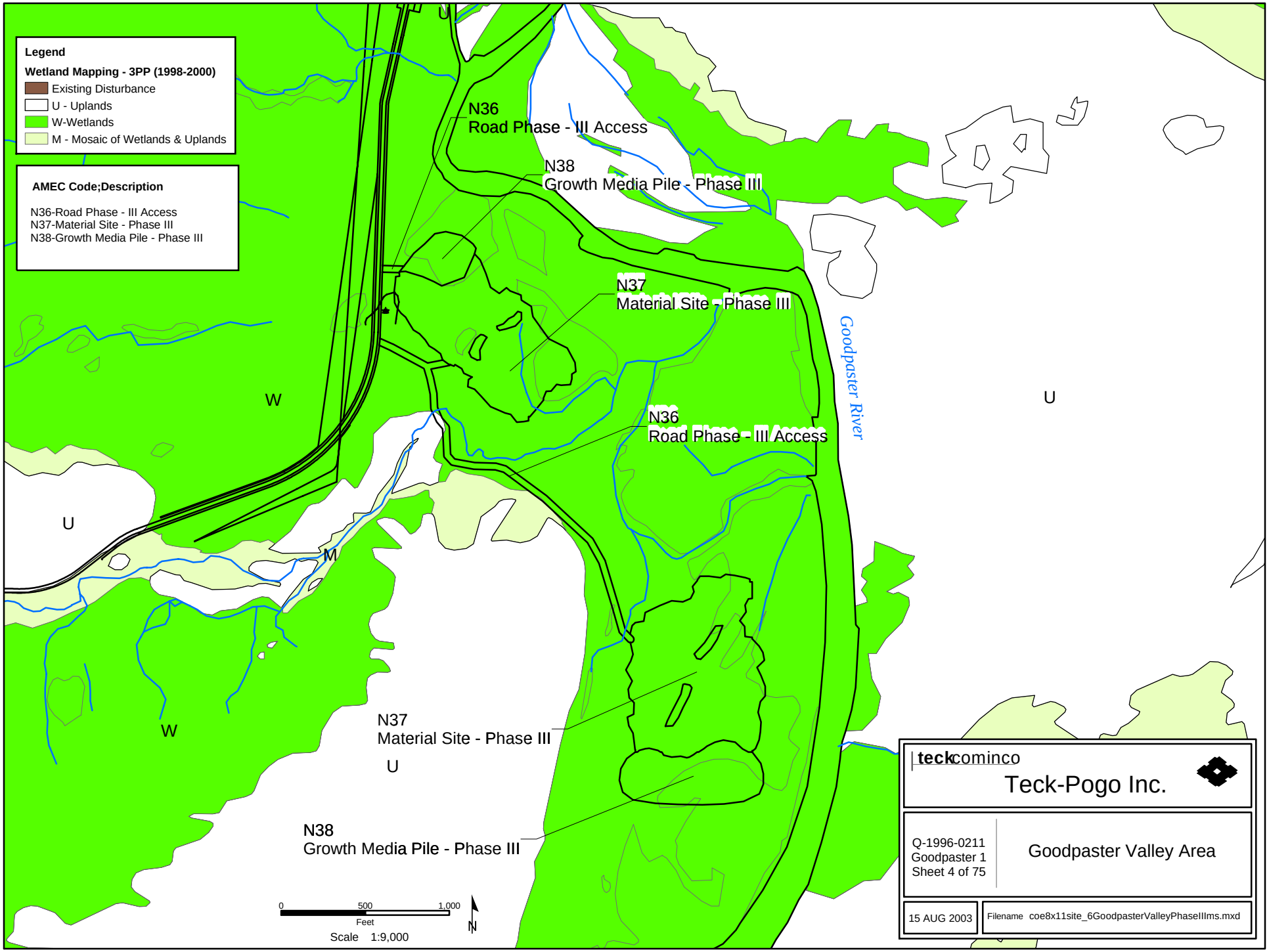
Q-1996-0211
Goodpaster 1
Sheet 3 of 75
1525 Portal Area
15 AUG 2003
Filename coe8x11site_1Portal1525.mxd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Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
AMEC Code;Description
N36-Road Phase - III Access
N37-Material Site - Phase III
N38-Growth Media Pile - Phase III
N36
Road Phase - III Access
N38
Growth Media Pile - Phase III
N37
Material Site - Phase III
N36
Road Phase - III Access
Goodpaster River
U
W
U
M
W
N37
Material Site - Phase III
U
N38
Growth Media Pile - Phase III
0
500
1,000
Feet
Scale 1:9,000
N
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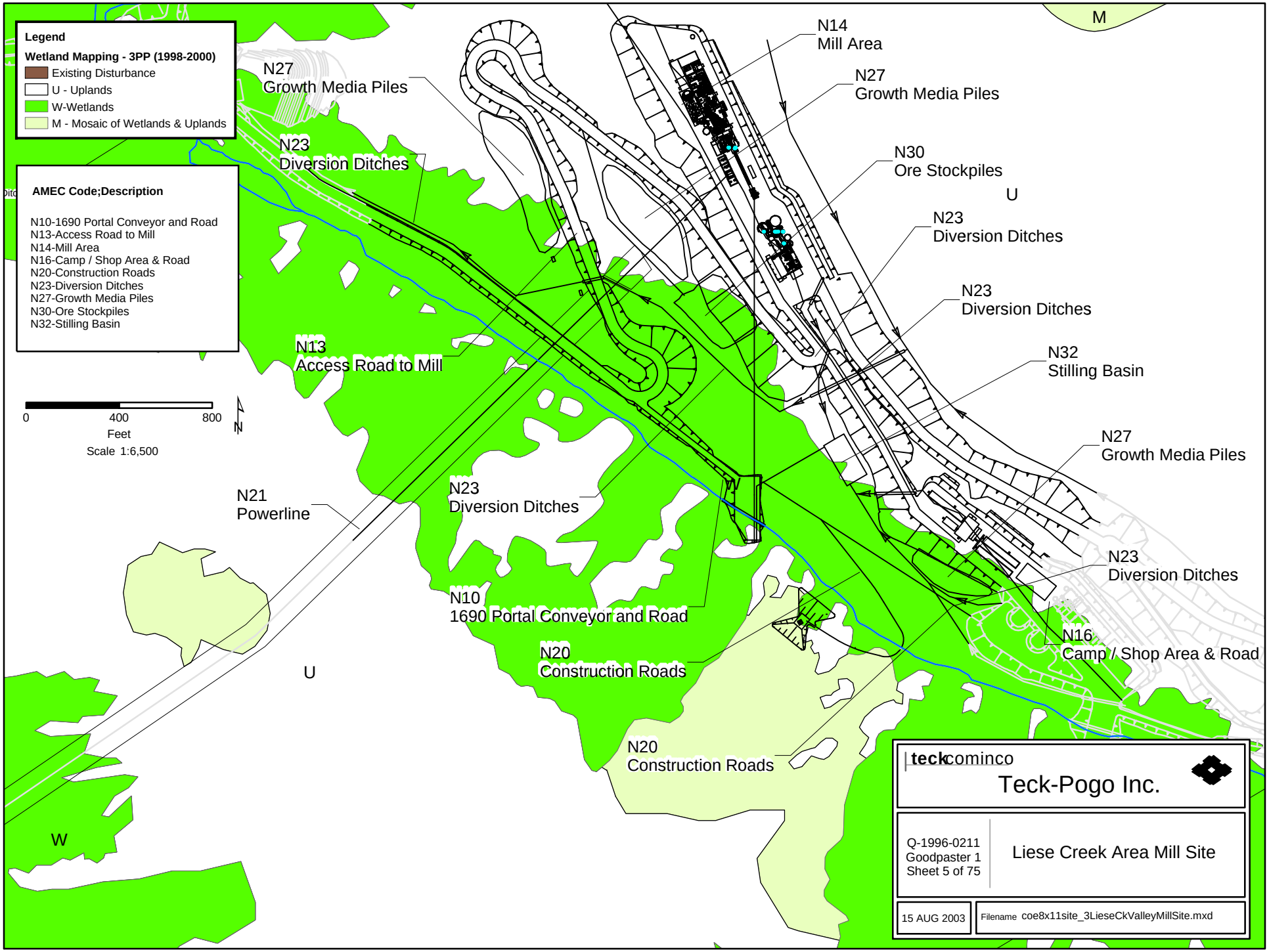
Goodpaster 1
Sheet 4 of 75
Goodpaster Valley Area
15 AUG 2003
Filename coe8x11site_6GoodpasterValleyPhaseIIIms.mxd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Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
AMEC Code;Description
N10-1690 Portal Conveyor and Road
N13-Access Road to Mill
N14-Mill Area
N16-Camp / Shop Area & Road
N20-Construction Roads
N23-Diversion Ditches
N27-Growth Media Piles
N30-Ore Stockpiles
N32-Stilling Basin
0
400
800
Feet
Scale 1:6,500
N
N27
Growth Media Piles
N23
Diversion Ditches
N13
Access Road to Mill
N21
Powerline
N23
Diversion Ditches
N10
1690 Portal Conveyor and Road
N20
Construction Roads
N20
Construction Roads
N14
Mill Area
N27
Growth Media Piles
N30
Ore Stockpiles
N23
Diversion Ditches
N23
Diversion Ditches
N32
Stilling Basin
N27
Growth Media Piles
N23
Diversion Ditches
N16
Camp / Shop Area & Road
U
U
W
W
M
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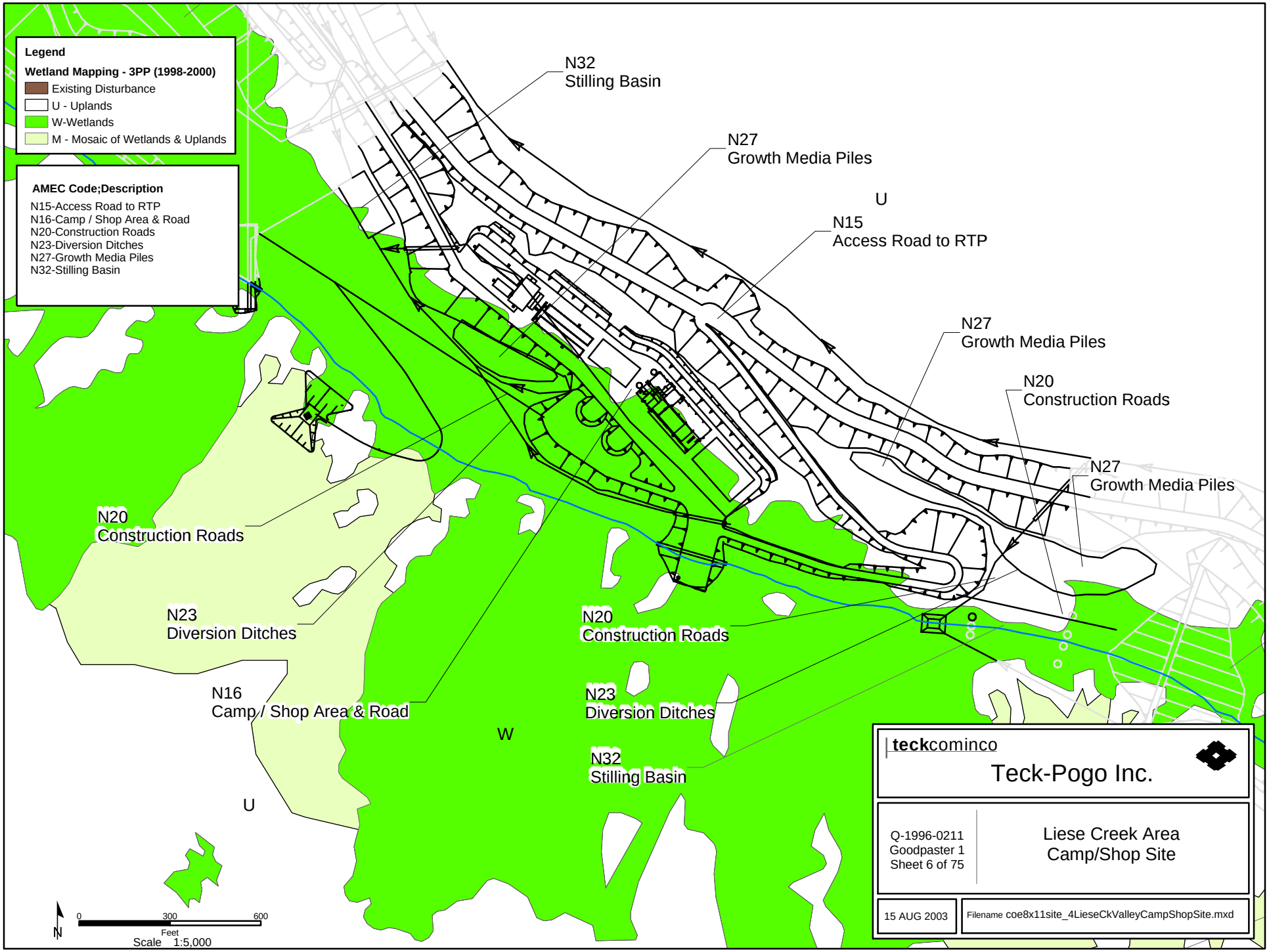
Goodpaster 1
Sheet 5 of 75
Liese Creek Area Mill Site
15 AUG 2003
Filename coe8x11site_3LieseCkValleyMillSite.mxd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Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
AMEC Code;Description
N15-Access Road to RTP
N16-Camp / Shop Area & Road
N20-Construction Roads
N23-Diversion Ditches
N27-Growth Media Piles
N32-Stilling Basin
N32
Stilling Basin
N27
Growth Media Piles
U
N15
Access Road to RTP
N27
Growth Media Piles
N20
Construction Roads
N27
Growth Media Piles
N20
Construction Roads
N23
Diversion Ditches
N16
Camp / Shop Area & Road
U
W
N20
Construction Roads
N23
Diversion Ditches
N32
Stilling Basin
N
0
300
600
Feet
Scale 1:5,000
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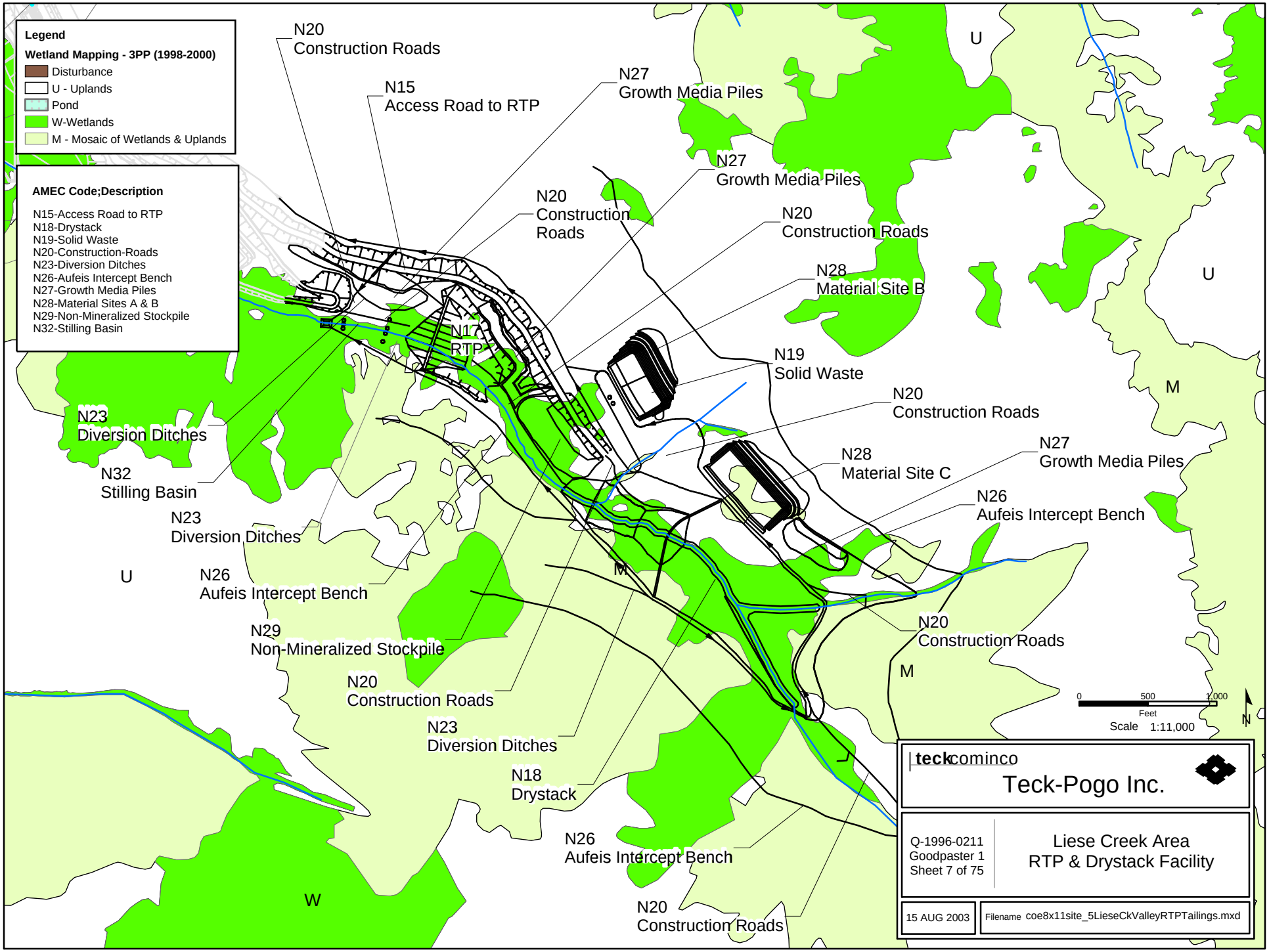
Q-1996-0211
Goodpaster 1
Sheet 6 of 75
Liese Creek Area
Camp/Shop Site
15 AUG 2003
Filename coe8x11site_4LieseCkValleyCampShopSite.mxd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Wetland Mapping - 3PP (1998-2000)
Disturbance
U - Uplands
Pond
W-Wetlands
M - Mosaic of Wetlands & Uplands
AMEC Code;Description
N15-Access Road to RTP
N18-Drystack
N19-Solid Waste
N20-Construction-Roads
N23-Diversion Ditches
N26-Aufeis Intercept Bench
N27-Growth Media Piles
N28-Material Sites A & B
N29-Non-Mineralized Stockpile
N32-Stilling Basin
N20 Construction Roads
N15 Access Road to RTP
N27 Growth Media Piles
N27 Growth Media Piles
N20 Construction Roads
N20 Construction Roads
N28 Material Site B
N17 RTP
N19 Solid Waste
N20 Construction Roads
N23 Diversion Ditches
N32 Stilling Basin
N28 Material Site C
N27 Growth Media Piles
N26 Aufeis Intercept Bench
N23 Diversion Ditches
N26 Aufeis Intercept Bench
N29 Non-Mineralized Stockpile
N20 Construction Roads
N20 Construction Roads
N23 Diversion Ditches
N18 Drystack
N26 Aufeis Intercept Bench
N20 Construction Roads
U
U
U
M
M
M
W
0 500 1,000
Feet
Scale 1:11,000
N
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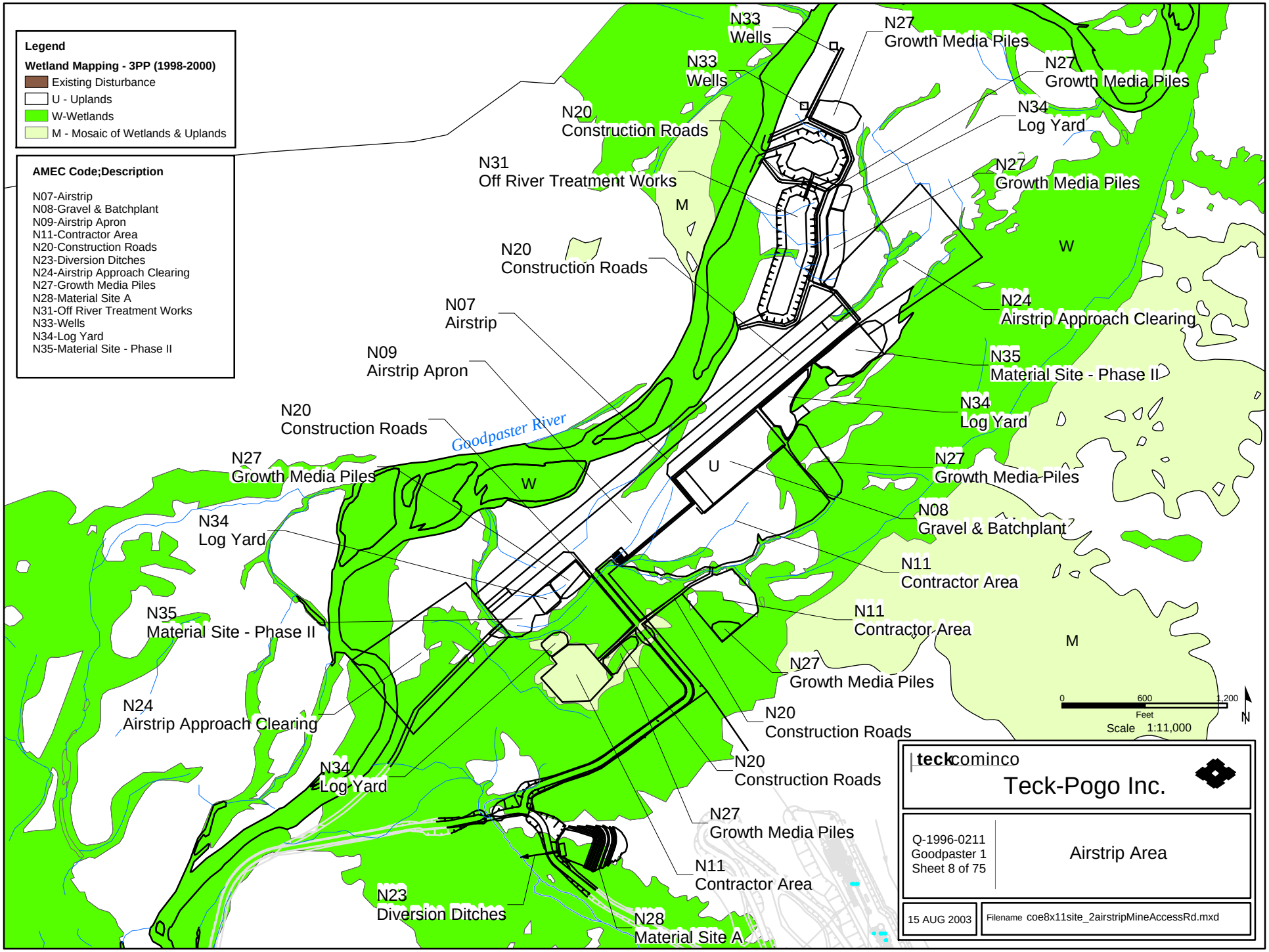
Q-1996-0211
Goodpaster 1
Sheet 7 of 75
Liese Creek Area
RTP & Drystack Facility
15 AUG 2003
Filename coe8x11site_5LieseCkValleyRTPTailings.mxd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Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
AMEC Code;Description
N07-Airstrip
N08-Gravel & Batchplant
N09-Airstrip Apron
N11-Contractor Area
N20-Construction Roads
N23-Diversion Ditches
N24-Airstrip Approach Clearing
N27-Growth Media Piles
N28-Material Site A
N31-Off River Treatment Works
N33-Wells
N34-Log Yard
N35-Material Site - Phase II
N33 Wells
N27 Growth Media Piles
N33 Wells
N27 Growth Media Piles
N20 Construction Roads
N34 Log Yard
N31 Off River Treatment Works
N27 Growth Media Piles
M
W
N20 Construction Roads
N24 Airstrip Approach Clearing
N07 Airstrip
N35 Material Site - Phase II
N09 Airstrip Apron
N34 Log Yard
N20 Construction Roads
Goodpaster River
N27 Growth Media Piles
U
N27 Growth Media Piles
W
N08 Gravel & Batchplant
N34 Log Yard
N11 Contractor Area
N35 Material Site - Phase II
N11 Contractor Area
M
N27 Growth Media Piles
N24 Airstrip Approach Clearing
N20 Construction Roads
N34 Log Yard
N20 Construction Roads
N27 Growth Media Piles
N11 Contractor Area
N23 Diversion Ditches
N28 Material Site A
0 600 1,200
Feet
Scale 1:11,000
N
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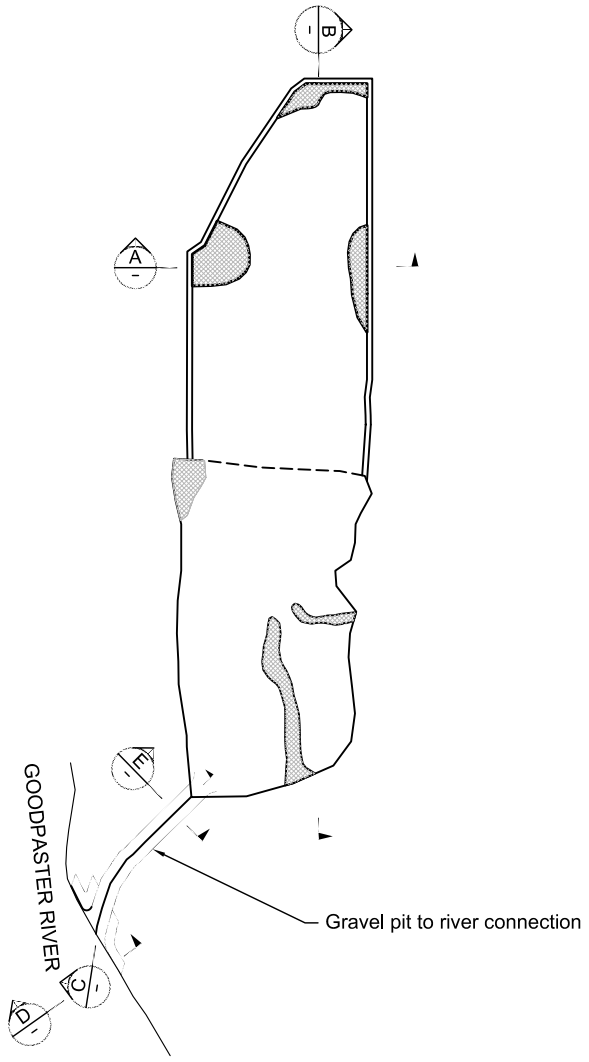
Q-1996-0211
Goodpaster 1
Sheet 8 of 75
Airstrip Area
15 AUG 2003
Filename coe8x11site_2airstripMineAccessRd.mxd



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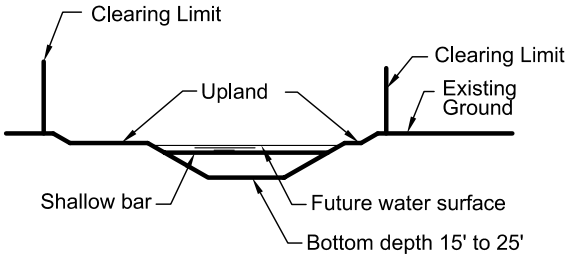
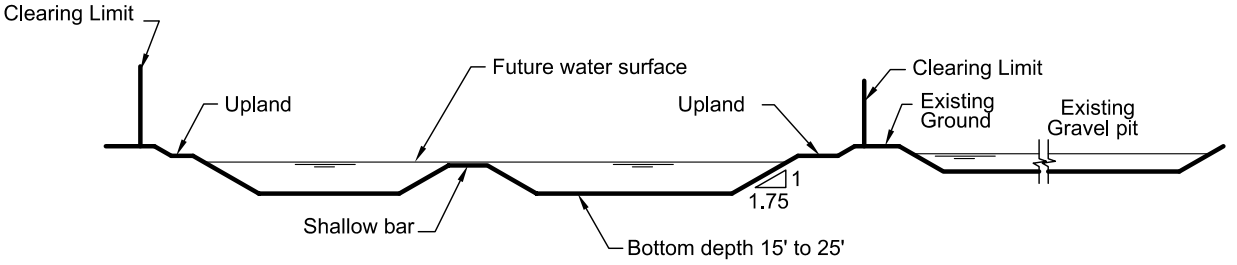
EMERGENT WETLANDS



SECTION A



SECTION B

Material Site Notes

1. Gravel Pits:
   a) Pits to retain basin shape to contain runoff and act as infiltration basin.
   b) Overburden stored in berms at pit limits and respread to form pit finished slopes.

Reclamation Notes

1. Material site slopes will be recontoured immediately following completion of each sectional part or the entire operation, as appropriate. No gravel stockpiles will be left at completion operations.

2. Topsoil will be applied to disturbed areas.

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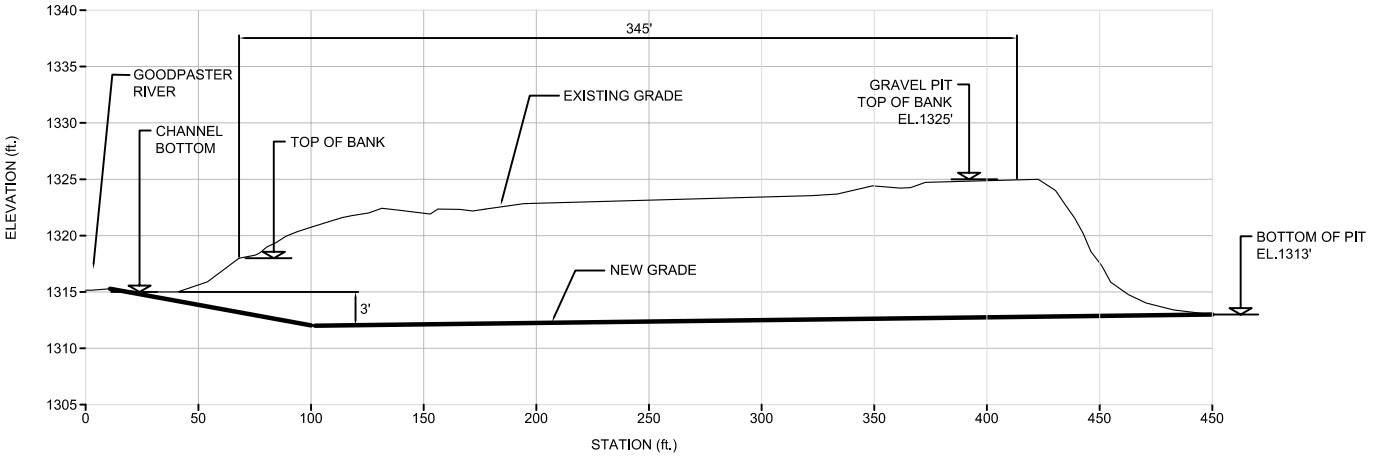
Q-1996-0211
Goodpaster 1
Sheet 9 of 75

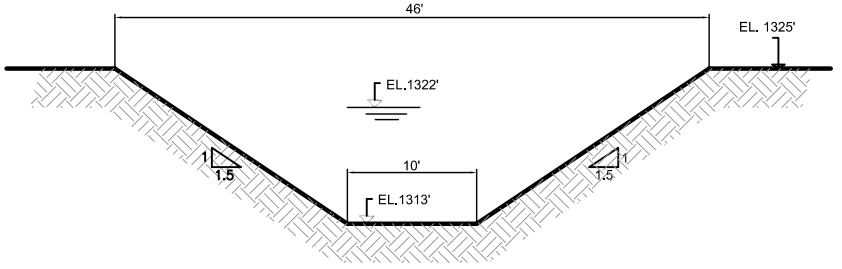
1525 PORTAL AREA
GRAVEL PITS
PLAN AND SECTIONS
E03 & N12

15 AUG 2003

Reclaim gravel pit.dwg



SECTION C/-



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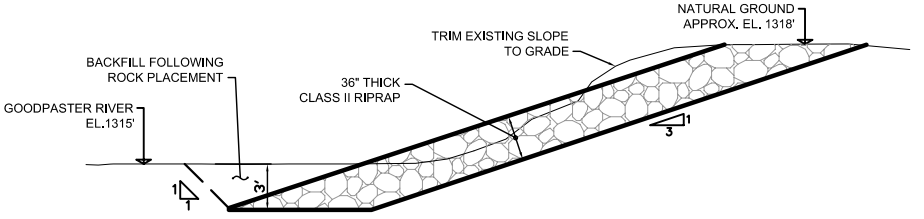

SECTION D/-

Construction Notes

1. Gravel pit to river connection to be constructed during reclamation.

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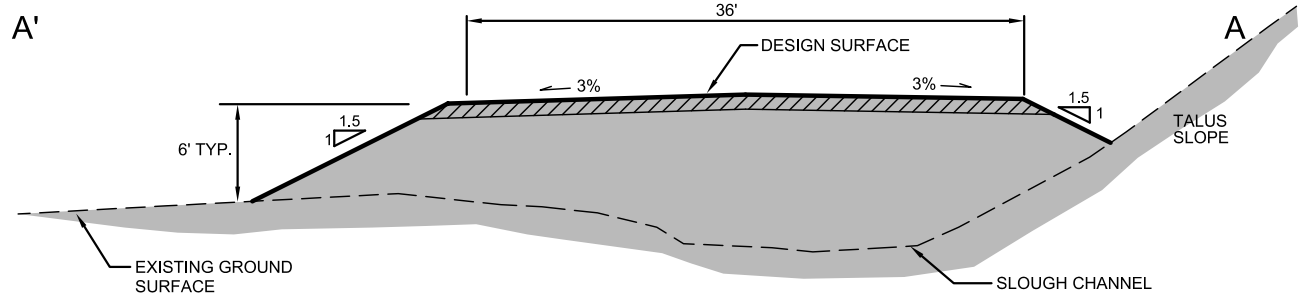
Q-1996-0211
Goodpaster 1
Sheet 10 of 75

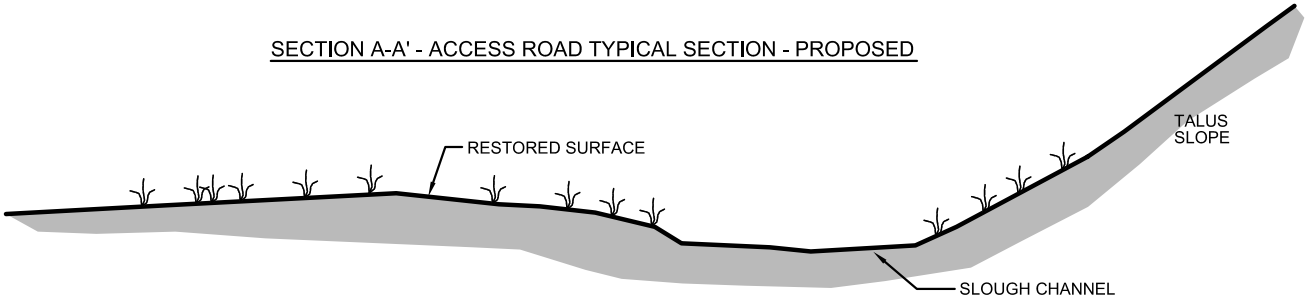
1525 PORTAL AREA
GRAVEL PIT TO RIVER CONNECTION
TYPICAL SECTIONS
E03 & N12

15 AUG 2003

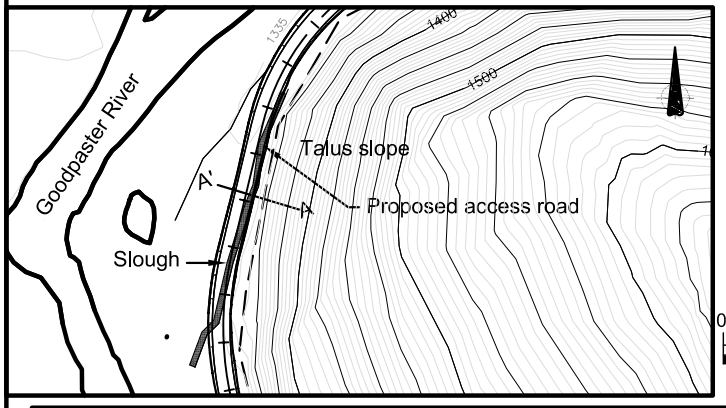
Reclaim gravel pit.dwg



SECTION A-A' - ACCESS ROAD TYPICAL SECTION - PROPOSED



SECTION A-A' - ACCESS ROAD TYPICAL SECTION - RESTORED



PLAN SCALE

0' 200' 400' 600'

Construction Notes

1. Overburden and bedrock are native materials.
2. Base material is 6" of 1" minus crushed & blended gravel.
3. Subbase material is 30" of 6" minus random fill (native).
4. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Fill will be removed and drainage paths re-established.

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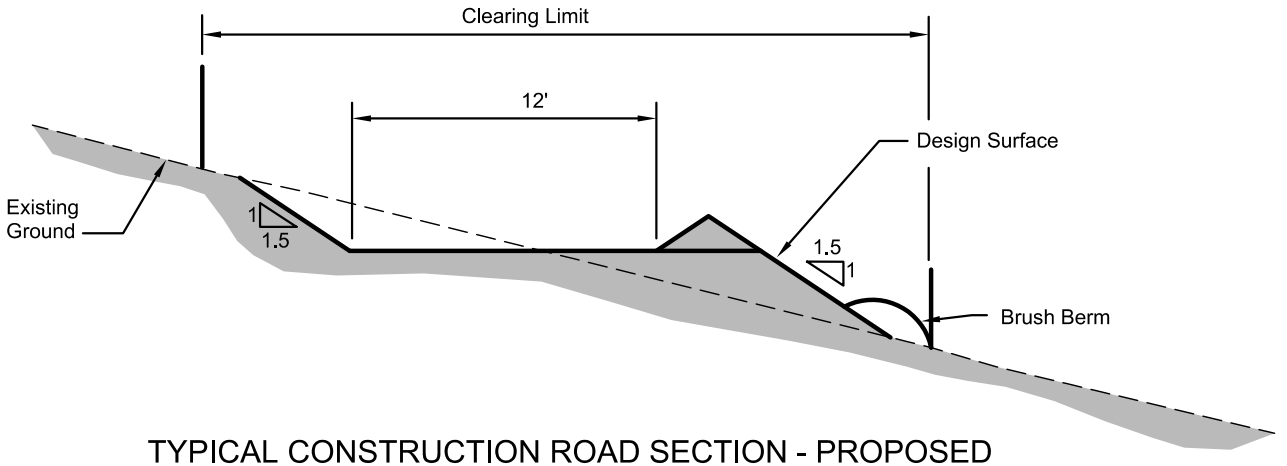
Q-1996-0211
Goodpaster 1
Sheet 11 of 75

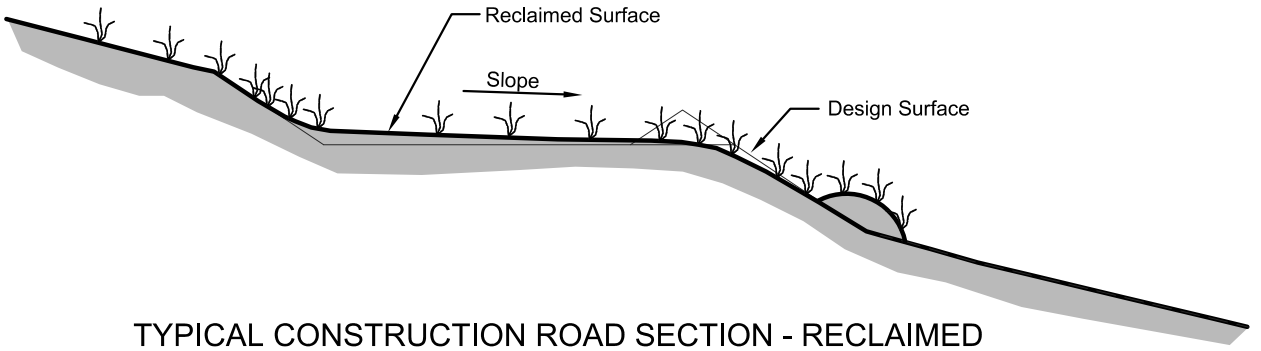
1525 PORTAL AREA
POGO RIDGE/GOODPASTER
VALLEY INTERFACE
ROAD SECTION
N06

15 AUG 2003

reclaim Pogo Ridge GPV Interface.dwg



TYPICAL CONSTRUCTION ROAD SECTION - PROPOSED



TYPICAL CONSTRUCTION ROAD SECTION - RECLAIMED

Construction Notes

1. Base material is 6" of 1" minus crushed & blended gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Access and service roads will be ripped or scarified, spread with growth media. Culverts will be removed and drainage paths re-established.

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LIESE CREEK AREA
CONSTRUCTION ROADS
TYPICAL SECTIONS
N20

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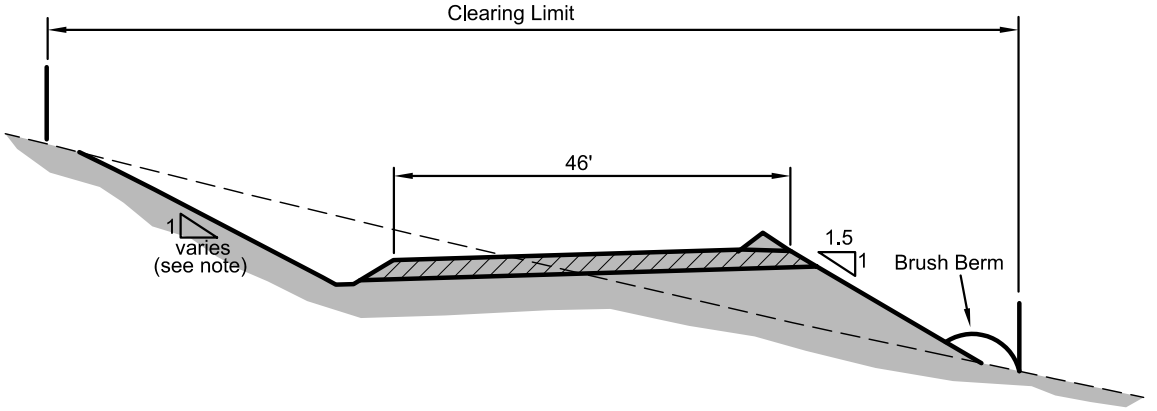
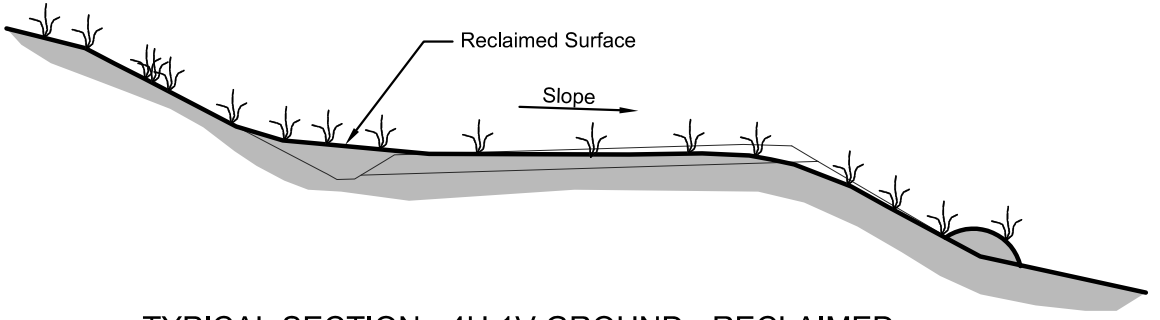
Reclaim mine site roads. dwg



TYPICAL SECTION - 4H:1V GROUND - PROPOSED



TYPICAL SECTION - 4H:1V GROUND - RECLAIMED

Construction Notes

1. Base material is 6" of 1" minus crushed & blended gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Access and service roads will be ripped or scarified, spread with growth media. Culverts will be removed and drainage paths re-established.

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LIESE CREEK AREA
ROADS ON 4H:1V SLOPES
TYPICAL SECTIONS
N13 & N15

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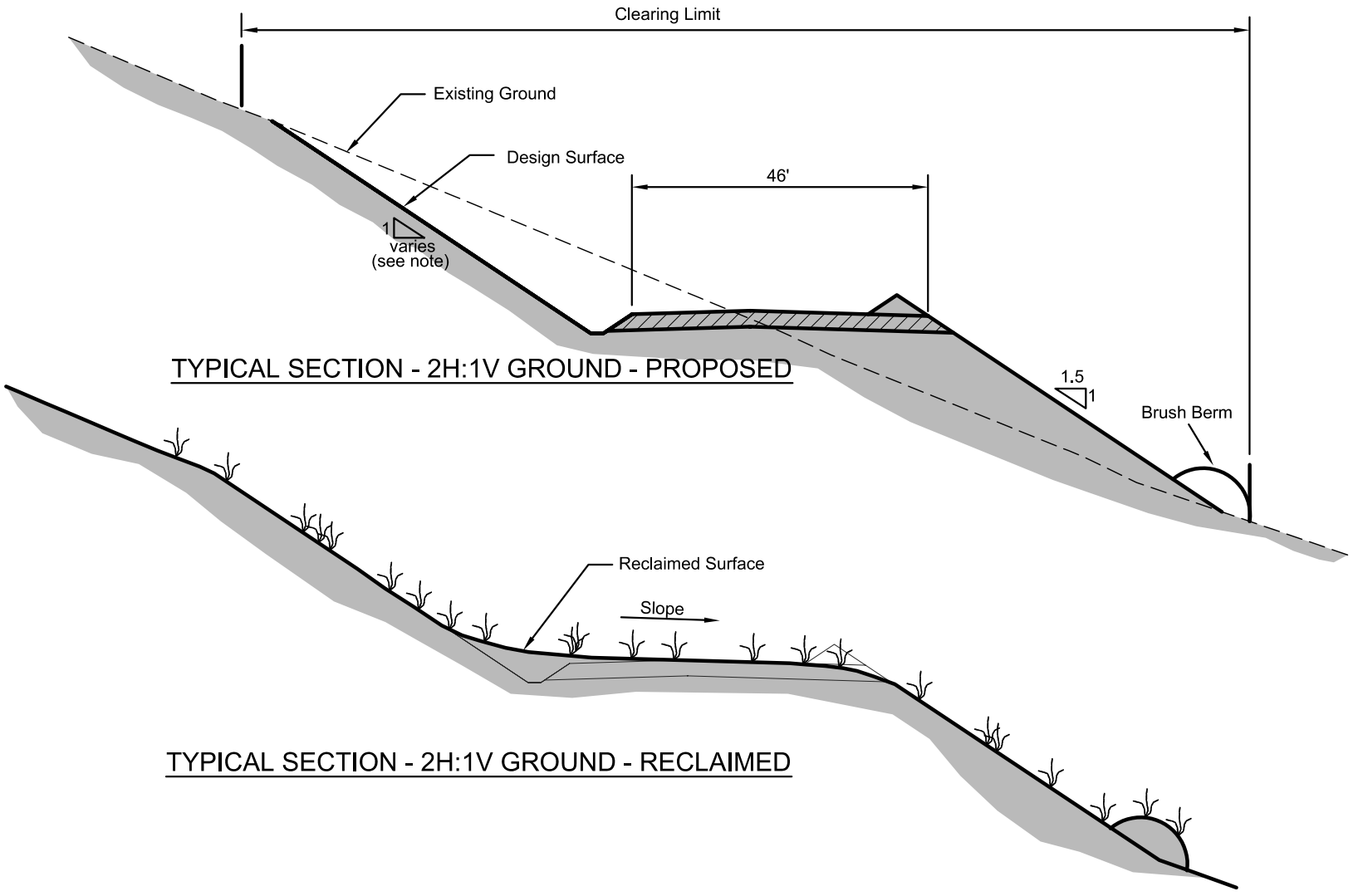
Reclaim mine site roads. dwg



Construction Notes

1. Base material is 6" of 1" minus crushed & blended gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Access and service roads will be ripped or scarified, spread with growth media. Culverts will be removed and drainage paths re-established.

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LIESE CREEK AREA
ROADS ON 2H:1V SLOPES
TYPICAL SECTIONS
N13 & N15

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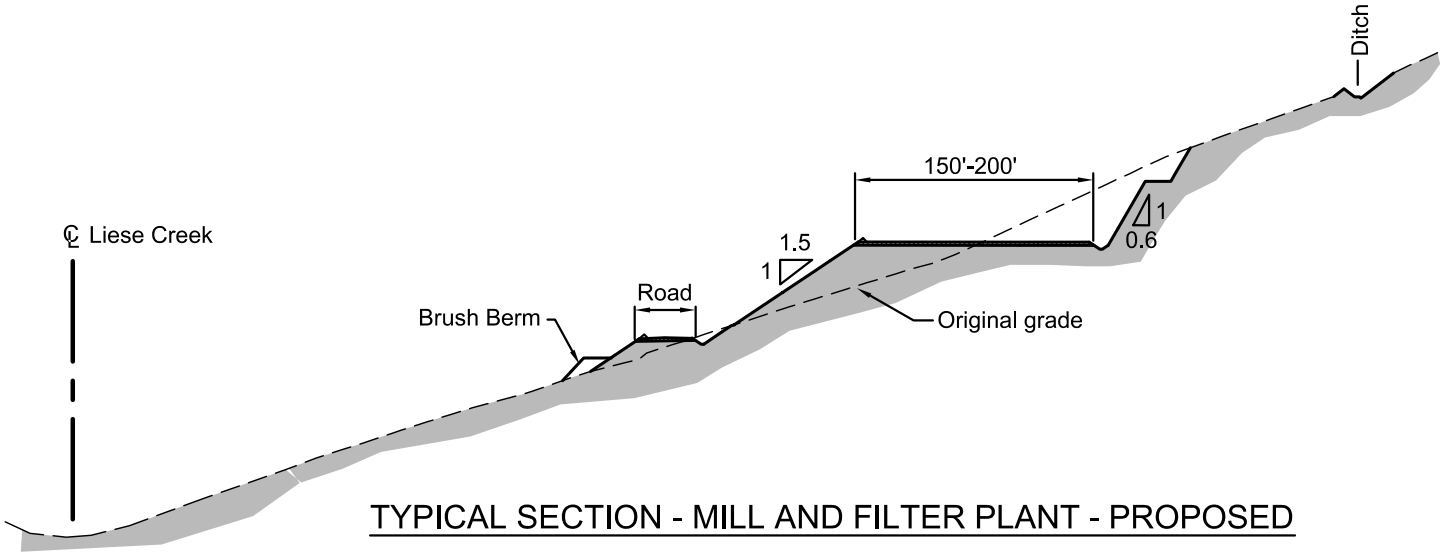
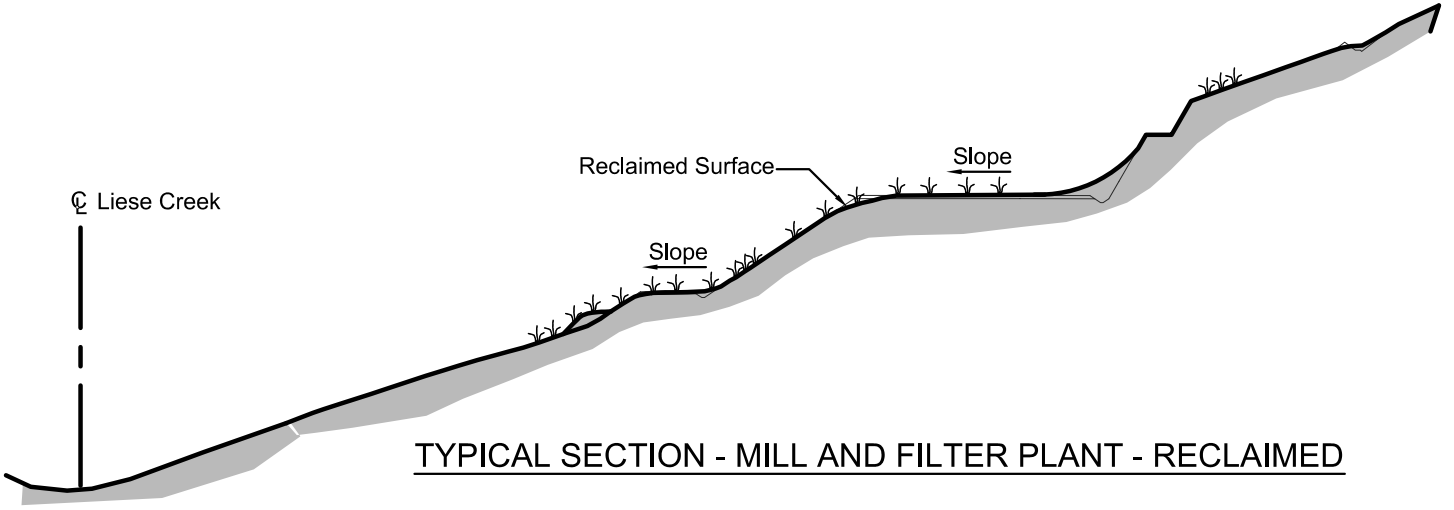
Reclaim mine site roads. dwg



TYPICAL SECTION - MILL AND FILTER PLANT - PROPOSED



TYPICAL SECTION - MILL AND FILTER PLANT - RECLAIMED

Material Site Notes

1. Base material is 6" of 1" minus crushed & blended gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Cut slopes in overburden will be 1.5H:1V.
4. Cut slopes in competent bedrock will be 0.5H:1V.
5. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. All buildings, materials storage areas, fencing, and related facilities will be removed from the Liese Creek area using general demolition procedures.
2. The highwall cut faces will be stabilized and left in place. Fill embankments will be reclaimed by pulling outer crest of the fill over the pad to the highwall, grading to control surface runoff towards Liese Creek, and blending with the local topography. Surfaces will be ripped where compacted and respread with stockpiled growth media.

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LIESE CREEK AREA
MILL AREA
TYPICAL BENCH SECTION
N14

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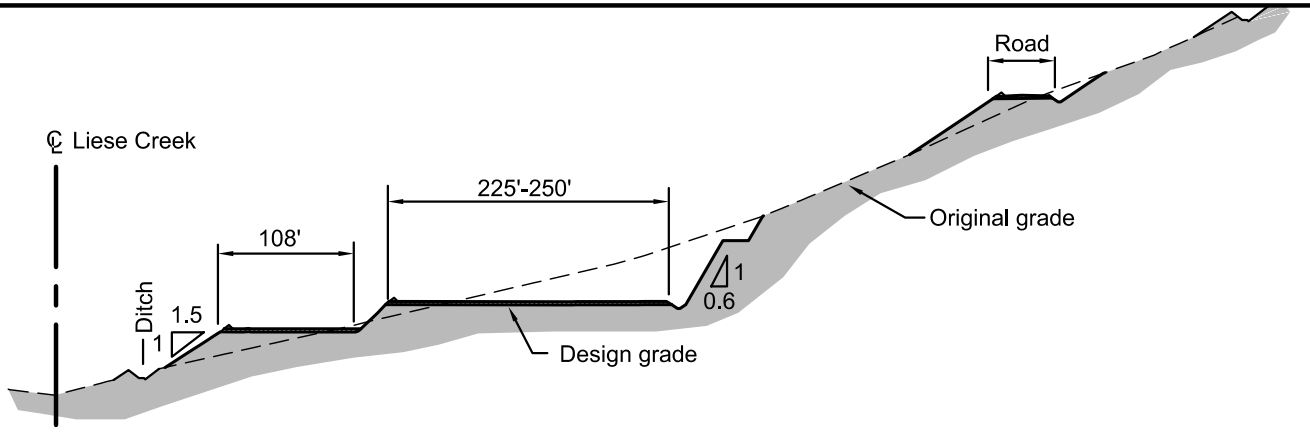
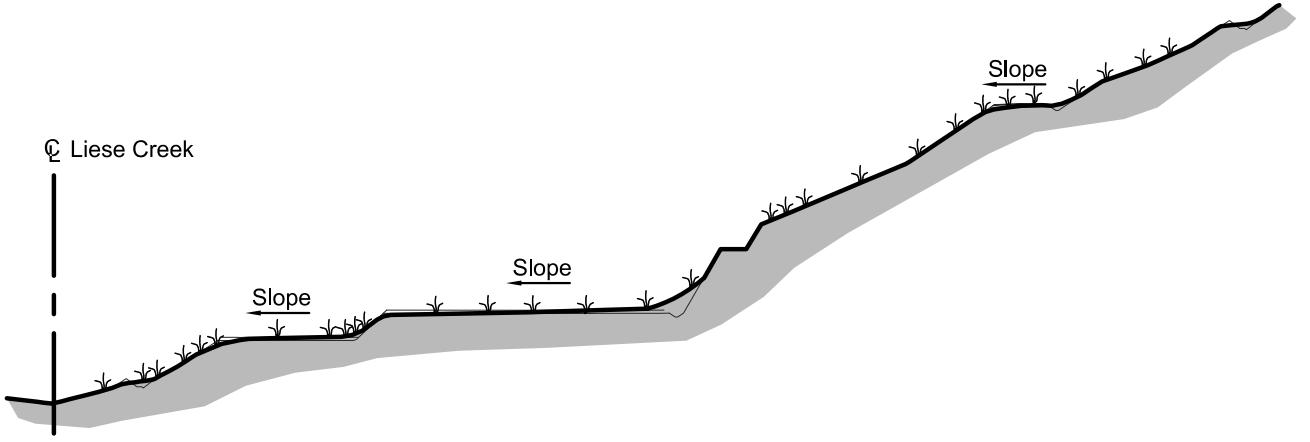
Reclaim benches. dwg



TYPICAL SECTION - CAMP AND TRUCK SHOP - PROPOSED



TYPICAL RECLAMATION SECTION - CAMP AND TRUCK SHOP - RECLAIMED

Material Site Notes

1. Base material is 6" of 1" minus crushed & blended gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Cut slopes in overburden will be 1.5H:1V.
4. Cut slopes in competent bedrock will be 0.5H:1V.
5. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. All buildings, materials storage areas, fencing, and related facilities will be removed from the Liese Creek area using general demolition procedures.
2. The highwall cut faces will be stabilized and left in place. Fill embankments will be reclaimed by pulling outer crest of the fill over the pad to the highwall, grading to control surface runoff towards Liese Creek, and blending with the local topography. Surfaces will be ripped where compacted and respread with stockpiled growth media.

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LIESE CREEK AREA
CAMP / SHOP AREA
TYPICAL BENCH SECTION
N16

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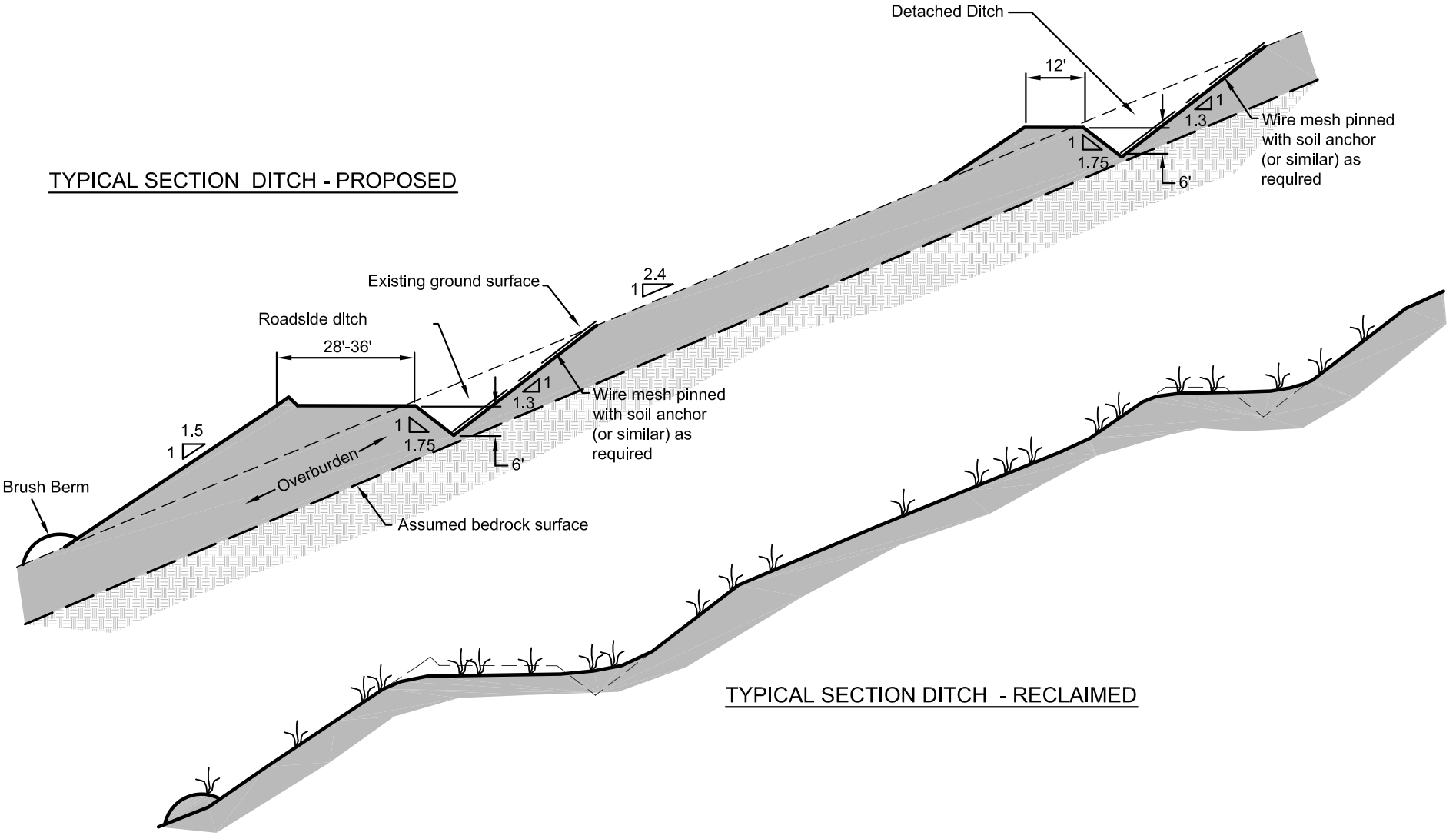
Reclaim benches. dwg



Material Site Notes

1. Overburden and bedrock are native materials.
2. Base material is 6" of 1" minus crushed & blended gravel.
3. Wire mesh and pins used to protect overburden slopes in ditches (as required).
4. Cut slopes in overburden will be 1.5H:1V.
5. Cut slopes in competent bedrock will be 0.5H:1V.
6. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Cut faces will be stabilized and left in place. Surfaces will be ripped where compacted and respread with stockpiled growth media.
2. Wire mesh will be removed.

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LIESE CREEK AREA
DIVERSION DITCHES
TYPICAL SECTION
N23

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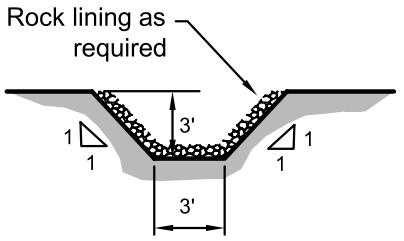
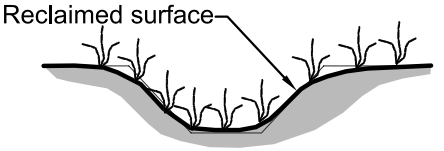
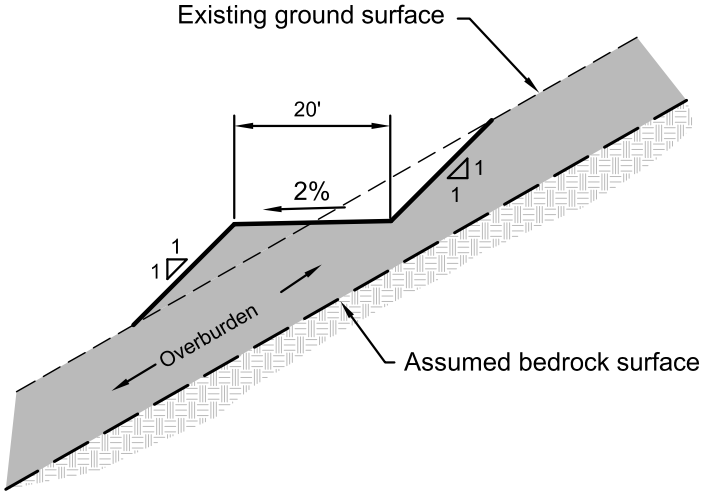
Reclaim ditches. dwg



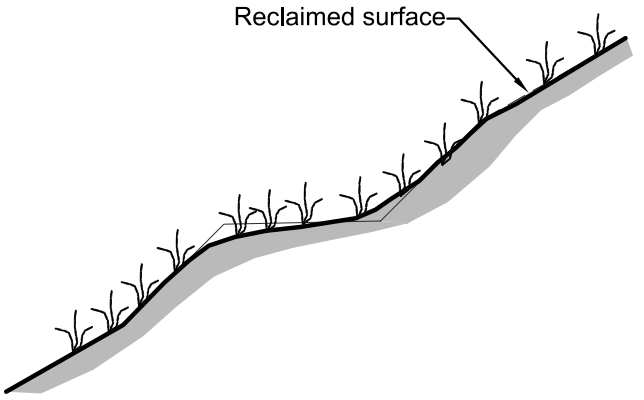
TYPICAL SECTION SMALL DIVERSION DITCHES PROPOSED



TYPICAL SECTION SMALL DIVERSION DITCHES RECLAIMED



TYPICAL SECTION AUFEIS INTERCEPT BENCH PROPOSED



TYPICAL SECTION AUFEIS INTERCEPT BENCH RECLAIMED

Material Site Notes

1. Overburden and bedrock are native materials.
2. Base material is 6" of 1" minus crushed & blended gravel.
3. Wire mesh and pins required to protect overburden slopes in ditches (as required).
4. Cut slopes in overburden will be 1.5H:1V.
5. Cut slopes in competent bedrock will be 0.5H:1V.
6. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Cut faces will be stabilized and left in place. Surfaces will be ripped where compacted and respread with stockpiled growth media.

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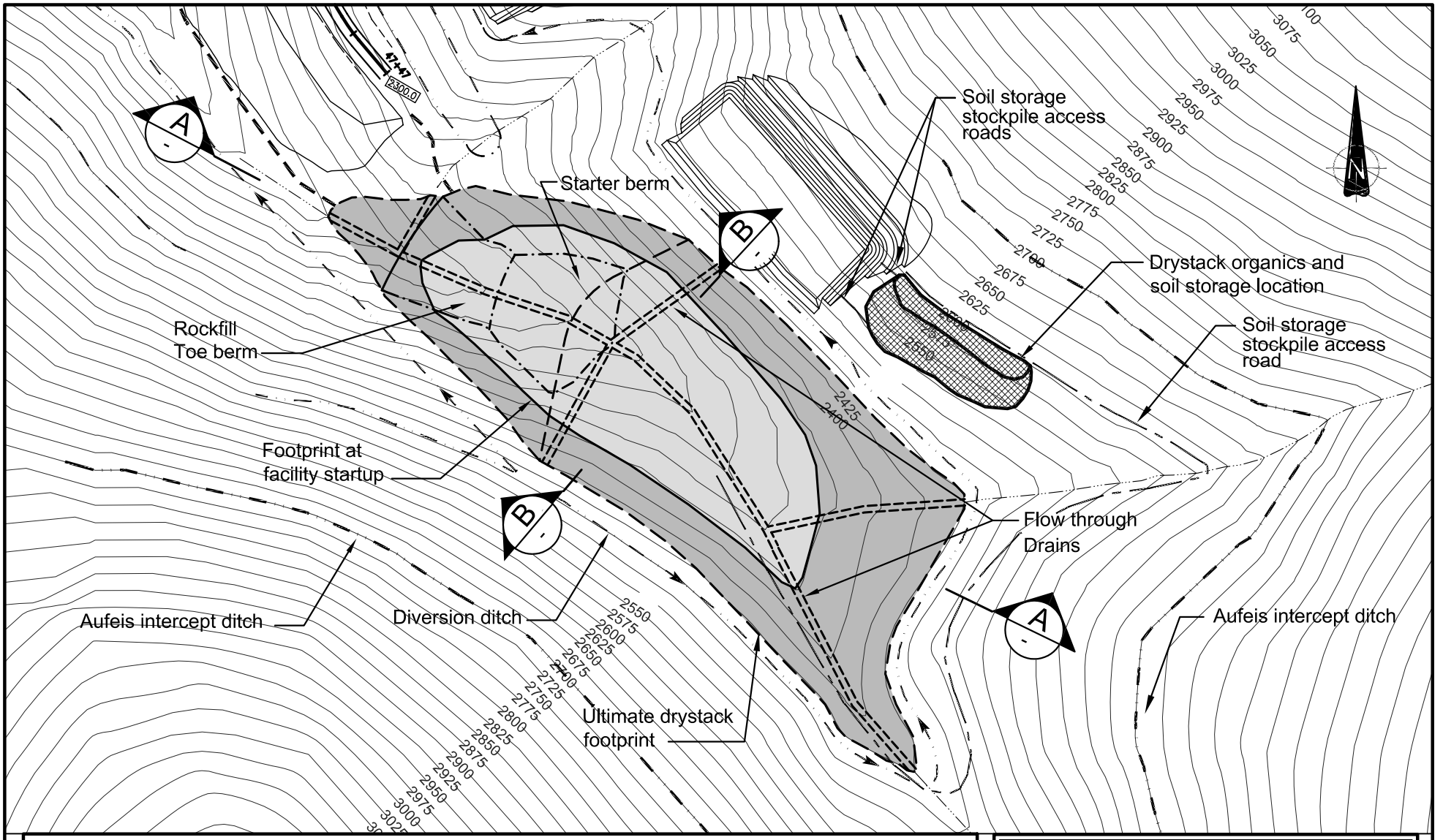
LIESE CREEK AREA
DIVERSION DITCH & AUFEIS INTERCEPT BENCH
TYPICAL SECTION
N23

15 AUG 2003

Reclaim ditches. dwg



Construction Notes

Reclamation Notes

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LIESE CREEK AREA
DRYSTACK FACILITY PLAN
N18

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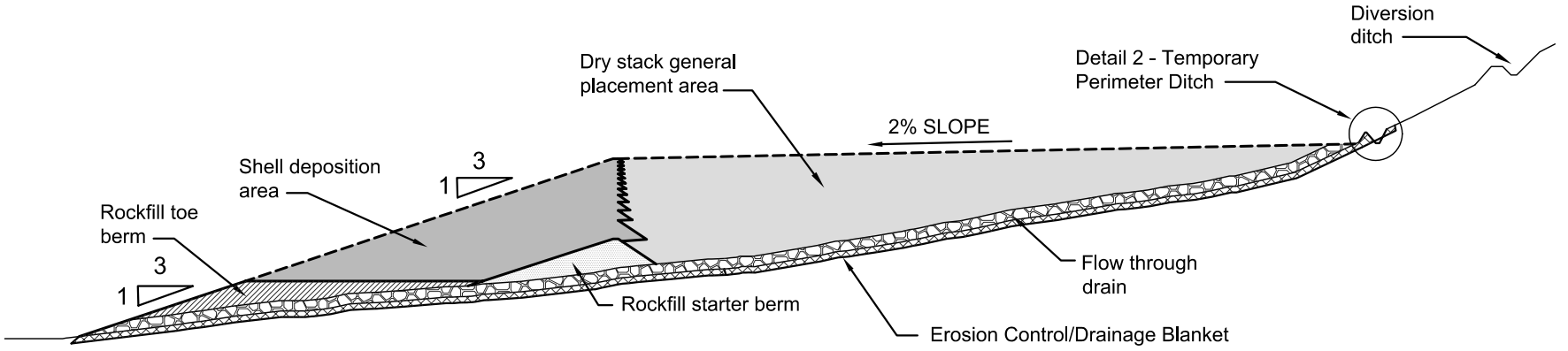
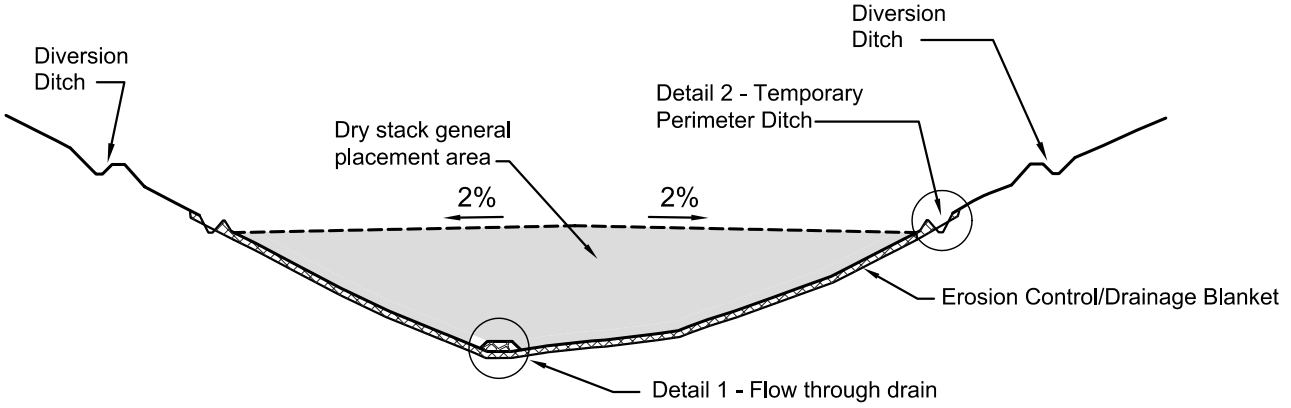
Reclaim drystack - 2. dwg



SECTION A-A



SECTION B-B

Construction Notes

Reclamation Notes

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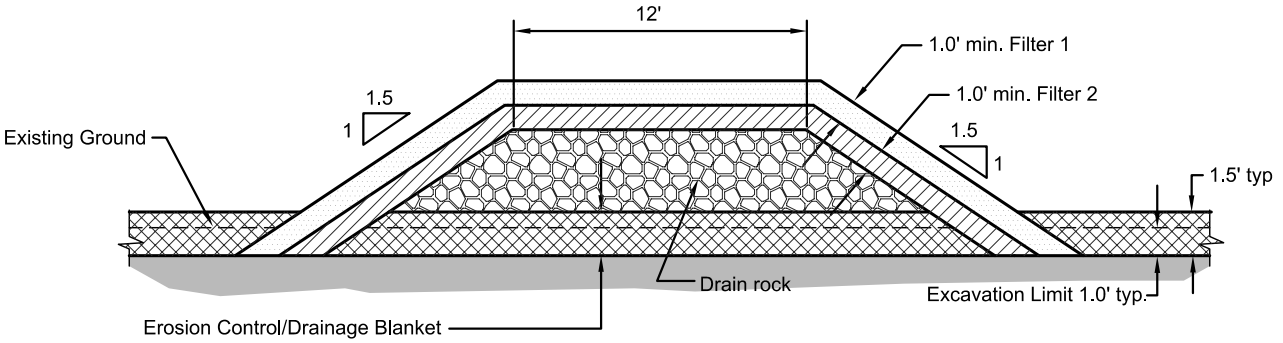
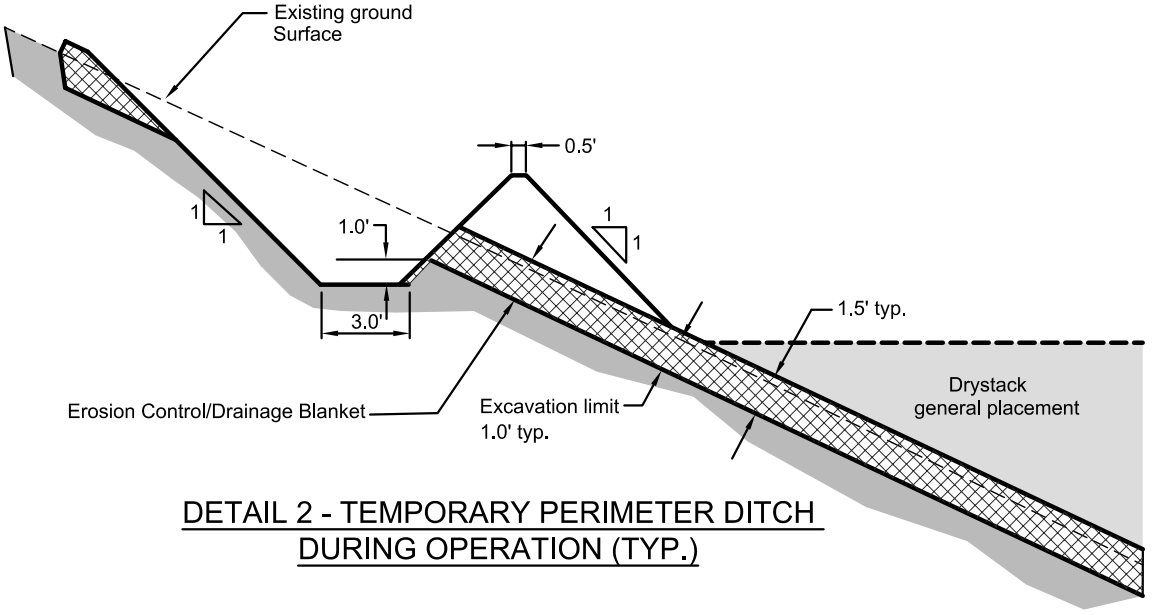
LIESE CREEK AREA
DRYSTACK FACILITY
SECTIONS
N18

15 AUG 2003

Reclaim drystack - 2. dwg



DETAIL 1 - FLOW THROUGH DRAIN (TYP.)



DETAIL 2 - TEMPORARY PERIMETER DITCH
DURING OPERATION (TYP.)

Construction Notes

Depth of perimeter ditch shall be 1.0' below bottom of drainage erosion blanket

Reclamation Notes

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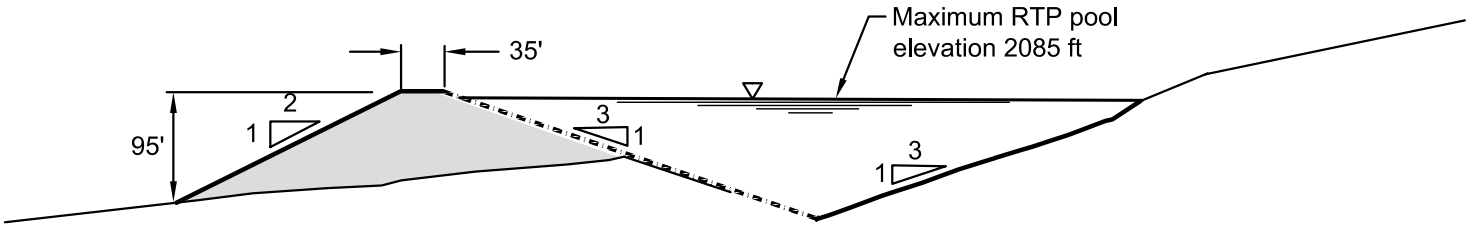
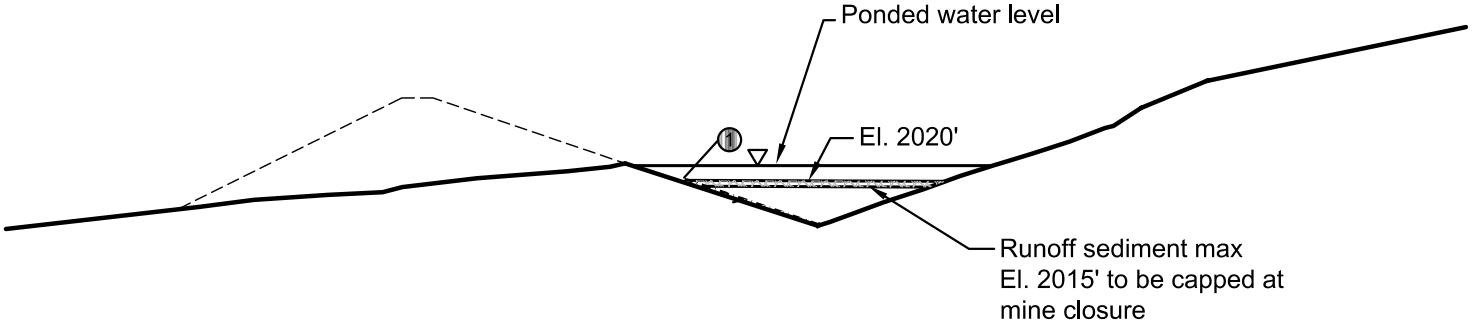
LIESE CREEK AREA
DRYSTACK FACILITY
FLOW THROUGH DRAIN AND
PERIMETER DITCH DETAILS
N18

15 AUG 2003

Reclaim drystack - 2. dwg



TYPICAL SECTION RTP - PROPOSED



TYPICAL SECTION RTP - RECLAIMED

Construction Notes

1. Overburden and bedrock are native materials.
2. Material 1, liner from bottom to top layers: Transition layer (8" minus), Filter layer (1" minus), Bedding layer (0.125" minus), 60 mil textured HDPE liner, GCL (needle punched, both sides), Cover layer (2" minus) and Rip Rap (8" minus).
3. Material 2, rockfill (8" minus).
4. Material 3 to 5 are native.
5. Material 6, grout curtain: high slump type 10 or 20 grout (micro-fine grout as required).

Reclamation Notes

1. When appropriate, the RTP will be breached. Slopes will be trimmed with a maximum of 2:1 sideslopes on the dam and a 50' wide floodplain re-established. Disturbed areas will be recontoured for drainage and channel re-established for Liese Creek. Steeper sideslopes will be armored as necessary and shaped to blend with the natural talus slopes of Liese Creek Valley. Highwall cut faces will be stabilized and abandoned in place. Runoff sediments will be capped and armored.

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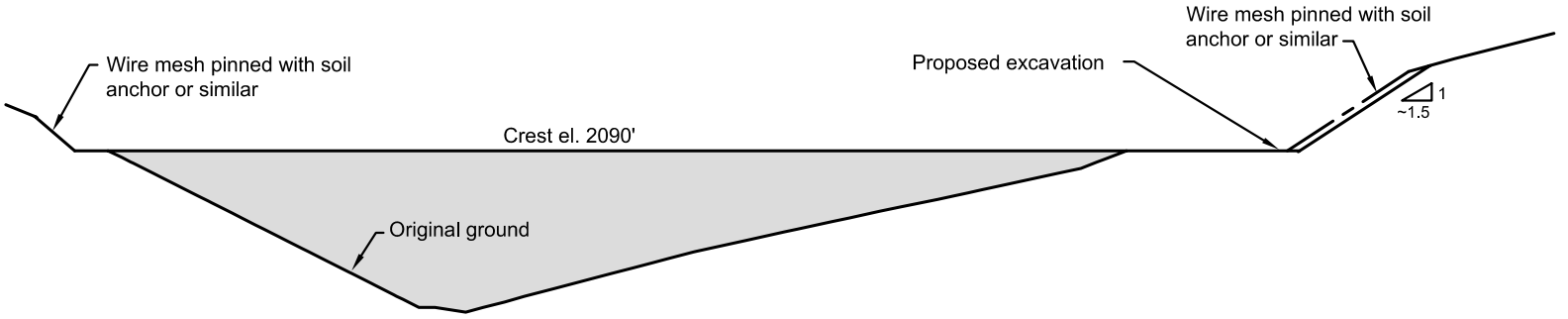
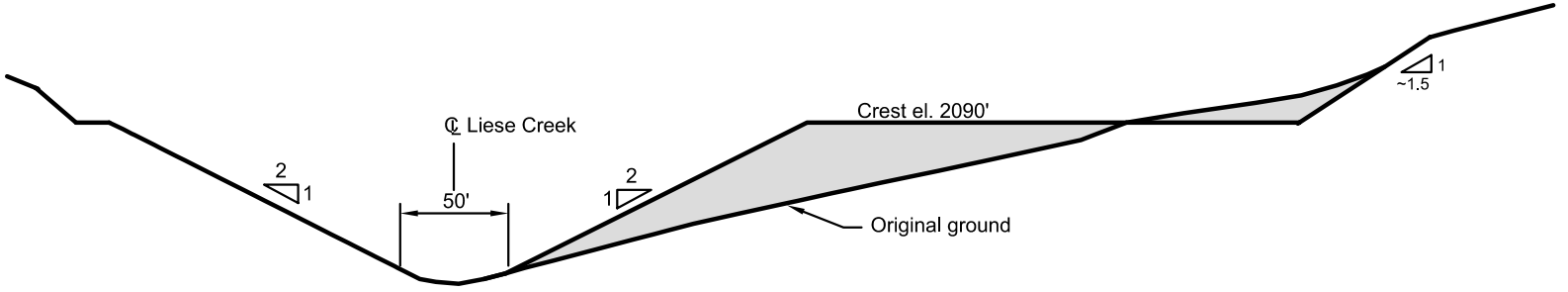
LIESE CREEK AREA
RTP TYPICAL SECTION
ALONG CREEK CENTERLINE
N17

15 AUG 2003 | Reclaim rtp. dwg





Construction Notes

1. Overburden and bedrock are native materials.
2. Material 1, liner from bottom to top layers: Transition layer (8" minus), Filter layer (1" minus), Bedding layer (0.125" minus), 60 mil textured HDPE liner, GCL (needle punched, both sides), Cover layer (2" minus) and Rip Rap (8" minus).
3. Material 2, rockfill (8" minus).
4. Material 3 to 5 are native.
5. Material 6, grout curtain: high slump type 10 or 20 grout (micro-fine grout as required).

Reclamation Notes

1. When appropriate, the RTP will be breached. Slopes will be trimmed with a maximum of 2:1 sideslopes on the dam and a 50' wide floodplain re-established. Disturbed areas will be recontoured for drainage and channel re-established for Liese Creek. Steeper sideslopes will be armored as necessary and shaped to blend with the natural talus slopes of Liese Creek Valley. Highwall cut faces will be stabilized and abandoned in place.

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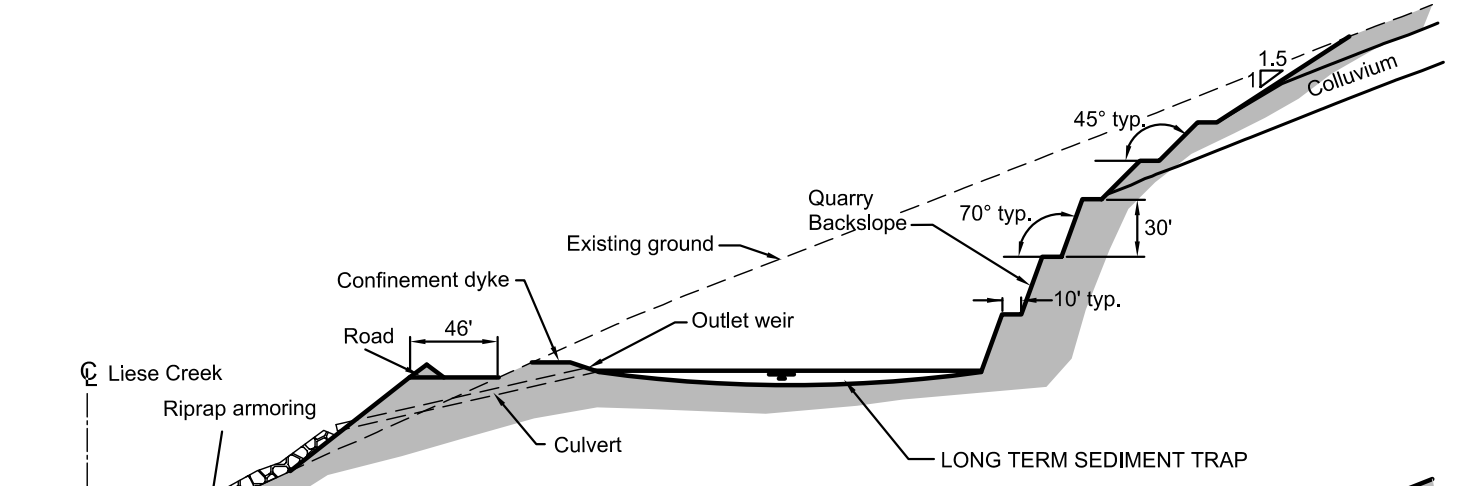
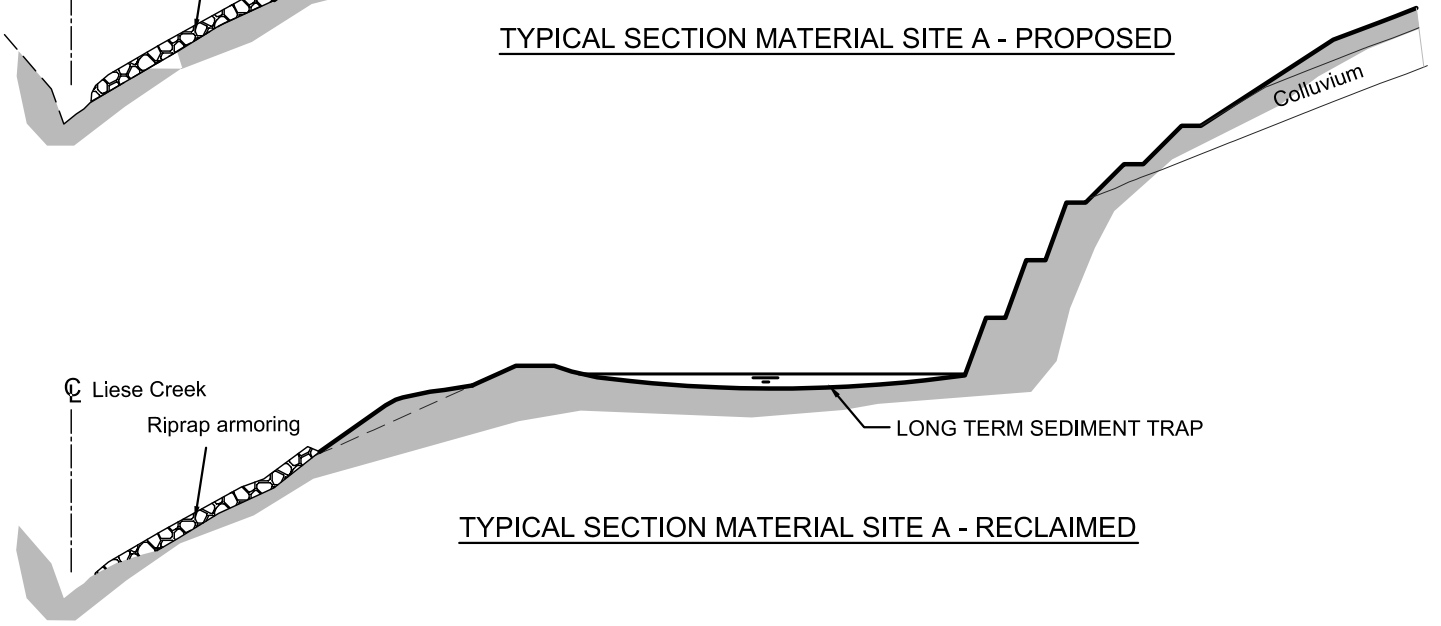
LIESE CREEK AREA
RTP TYPICAL SECTION
ALONG DAM CENTERLINE
N17

15 AUG 2003

Reclaim rtp. dwg



TYPICAL SECTION MATERIAL SITE A - PROPOSED



TYPICAL SECTION MATERIAL SITE A - RECLAIMED

Construction Notes

1. Overburden and bedrock are native materials.
2. Cut slopes in overburden will be 1.5H:1V.
3. Cut slopes in competent bedrock will be 0.5H:1V.
4. Cut slopes in excess of 30 feet in depth will have to be benched (see above sketch).

Reclamation Notes

1. Material site A will be utilized for stormwater control throughout the project and will be reclaimed during Phase IV when the upstream reclamation of mill site, camp area, and local roads has stabilized.
2. The highwall cut faces will be stablized and left in place.

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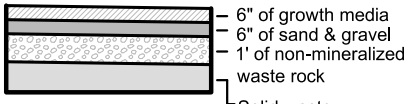
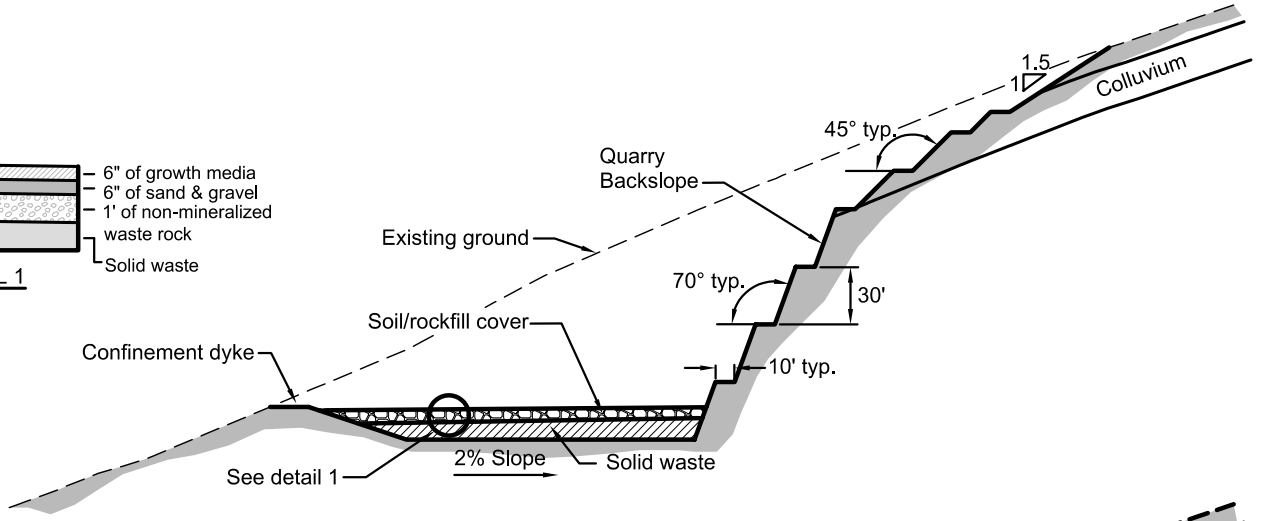
LIESE CREEK AREA
MATERIAL SITE A
TYPICAL SECTION
N28

15 AUG 2003

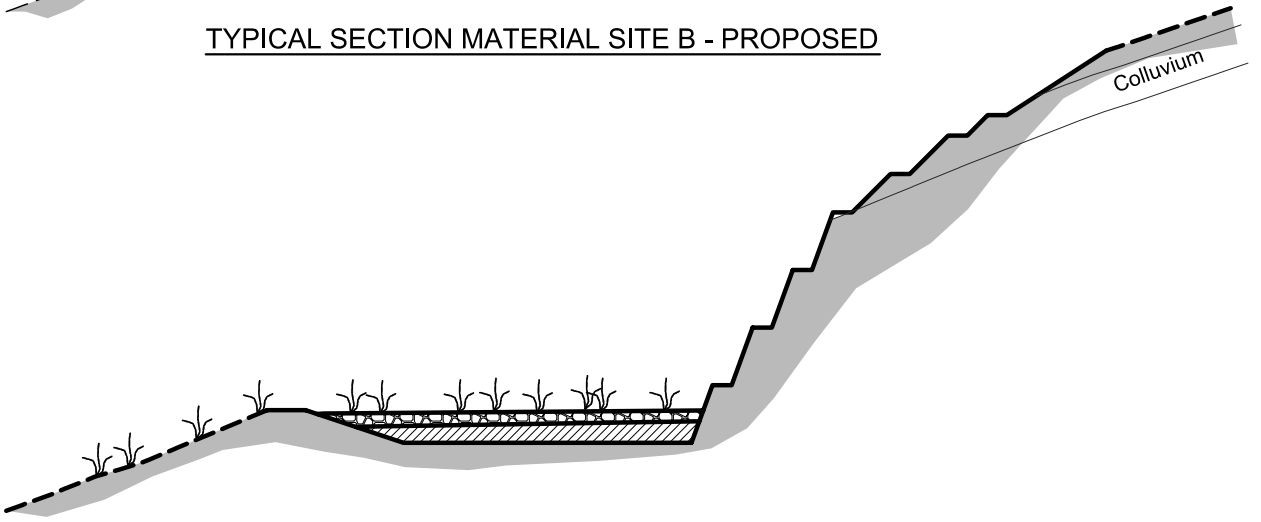
Reclaim rock quarries. dwg



DETAIL 1



TYPICAL SECTION MATERIAL SITE B - PROPOSED



TYPICAL SECTION MATERIAL SITE B - RECLAIMED

Construction Notes

1. See detail 1 above
2. Overburden and bedrock are native materials.
3. Cut slopes in overburden will be 1.5H:1V.
4. Cut slopes in competent bedrock will be 0.5H:1V.
5. Cut slopes in excess of 30 feet in depth will have to be benched (see above sketch).

Reclamation Notes

1. The surface solid waste facility constructed in material site B will be reclaimed by placing a soil cover over the waste, respreading with growth media.
2. The highwall cut faces will be stabilized and left in place.

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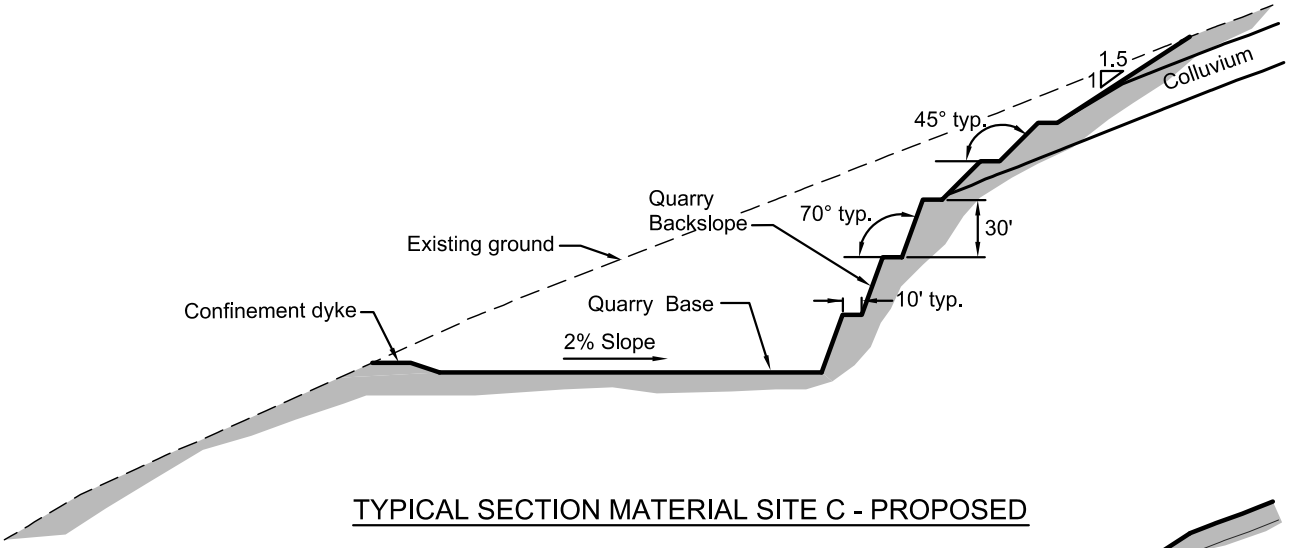
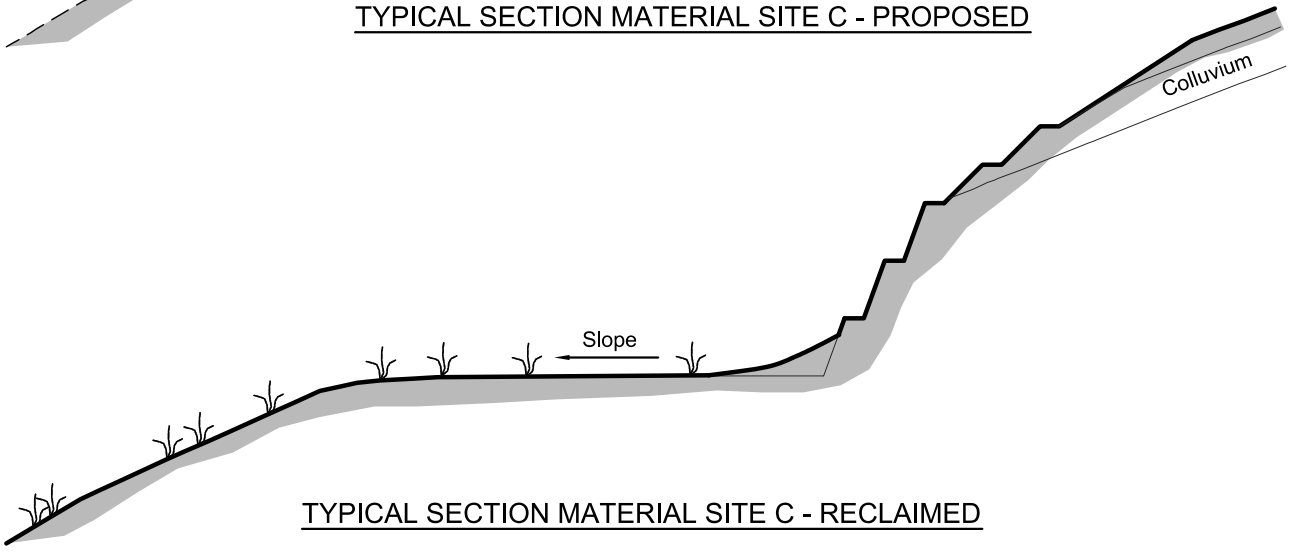
15 AUG 2003	Reclaim rock quarries. dwg



TYPICAL SECTION MATERIAL SITE C - PROPOSED



TYPICAL SECTION MATERIAL SITE C - RECLAIMED

Construction Notes

1. Overburden and bedrock are native materials.
2. Cut slopes in overburden will be 1.5H:1V.
3. Cut slopes in competent bedrock will be 0.5H:1V.
4. Cut slopes in excess of 30 feet in depth will have to be benched (see above sketch).

Reclamation Notes

1. Material site C will be reclaimed at the end of Phase III when no longer needed for closure materials. The highwall will be stabilized and left in place. Fill embankments will be reclaimed by pulling the outer crest of the fill over the pad to the highwall, grading to control surface water runoff towards Liese Creek, and blending with the local topography as much as possible. The recontoured surfaces will be ripped where compacted and respread with stockpiled growth media.

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LIESE CREEK AREA
MATERIAL SITE C
TYPICAL SECTION
N28

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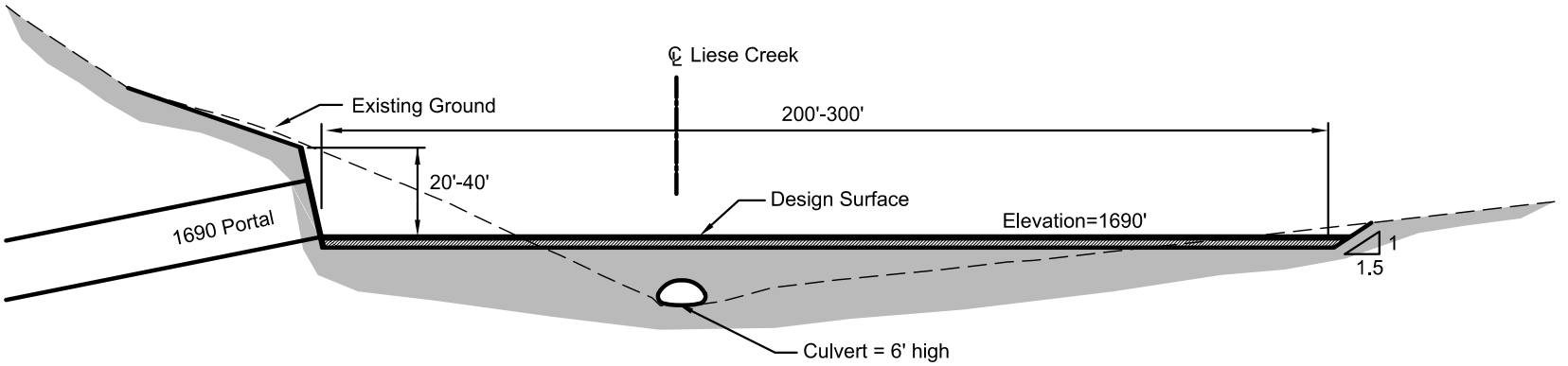
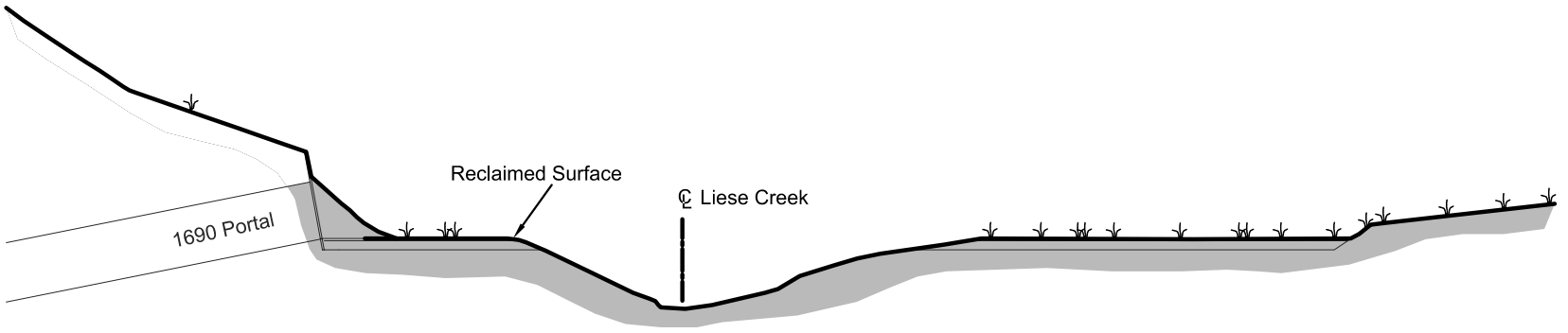
Reclaim rock quarries. dwg



TYPICAL SECTION - 1690 PORTAL PAD - PROPOSED



TYPICAL SECTION - 1690 PORTAL PAD - RECLAIMED

Material Site Notes

1. Base material is 6" of 1" minus crushed & blended non-mineralized rock & gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Cut slopes in overburden will be 1.5H:1V.
4. Cut slopes in competent bedrock will be 0.5H:1V.
5. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. The highwall cut faces will be stabilized and left in place. Fill embankments will be reclaimed by pulling the outer crest fill over the pad to the highwall, grading to control surface water runoff, and blending with the local topography as much as possible. Culvert will be removed and the recontoured surfaces will be ripped where compacted and respread with stockpiled growth media.
2. Portal plugged & reclaimed as per reclamation plan.

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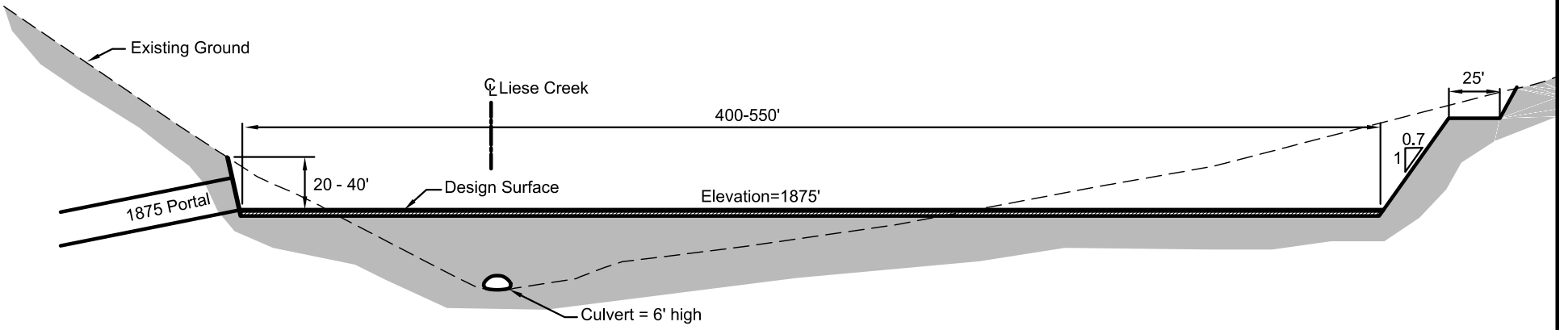
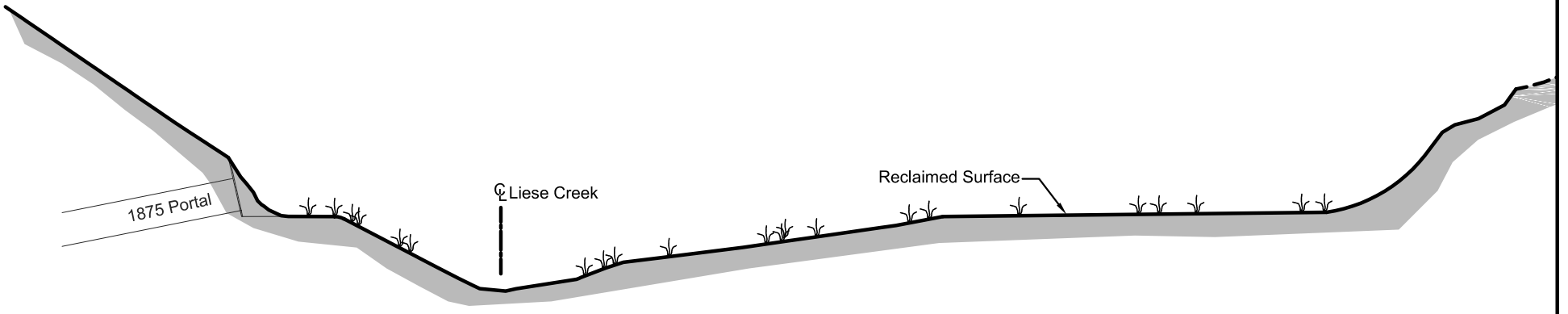
LIESE CREEK AREA
1690 PORTAL
TYPICAL SECTION
N10

15 AUG 2003

Reclaim 1690-1875portal. dwg



TYPICAL SECTION - 1875 PORTAL PAD - PROPOSED



TYPICAL SECTION - 1875 PORTAL PAD - RECLAIMED

Material Site Notes

1. Base material is 6" of 1" minus crushed & blended non-mineralized rock & gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Cut slopes in overburden will be 1.5H:1V.
4. Cut slopes in competent bedrock will be 0.5H:1V.
5. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. The highwall cut faces will be stabilized and left in place. Fill embankments will be reclaimed by pulling the outer crest fill over the pad to the highwall, grading to control surface water runoff, and blending with the local topography as much as possible. Culvert will be removed and the recontoured surfaces will be ripped where compacted and respread with stockpiled growth media.
2. Portal plugged & reclaimed as per reclamation plan.

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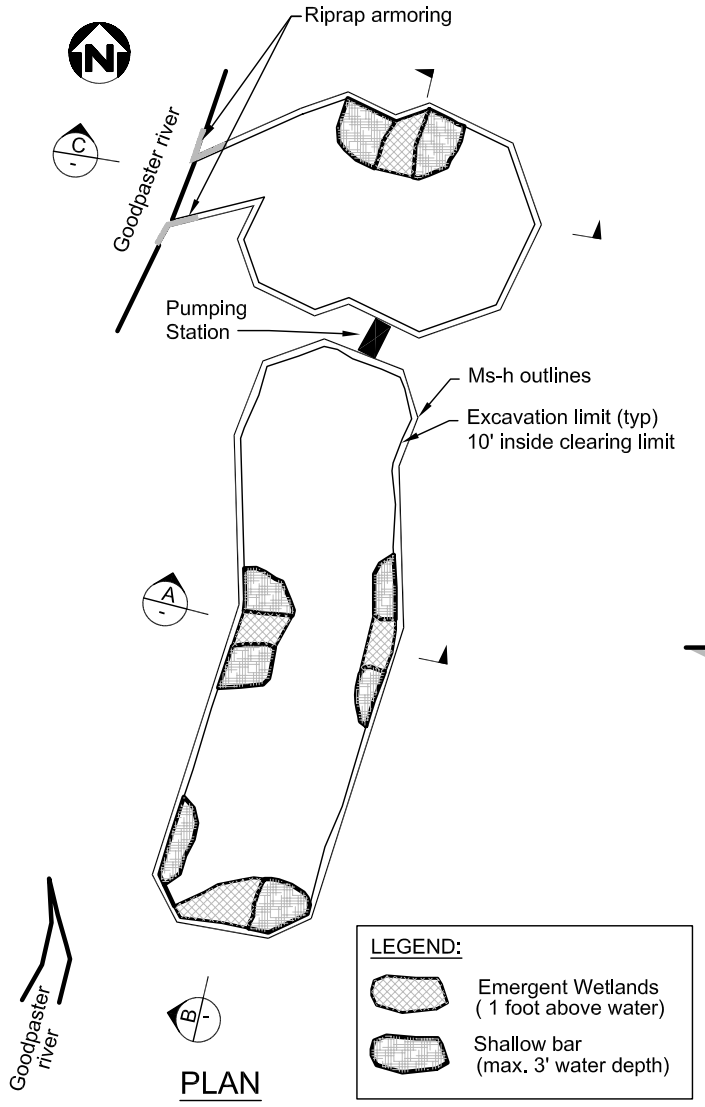
LIESE CREEK AREA
1875 PORTAL
TYPICAL SECTION
N16

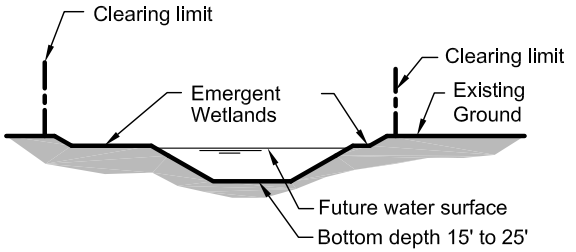
15 AUG 2003

Reclaim 1690-1875portal. dwg

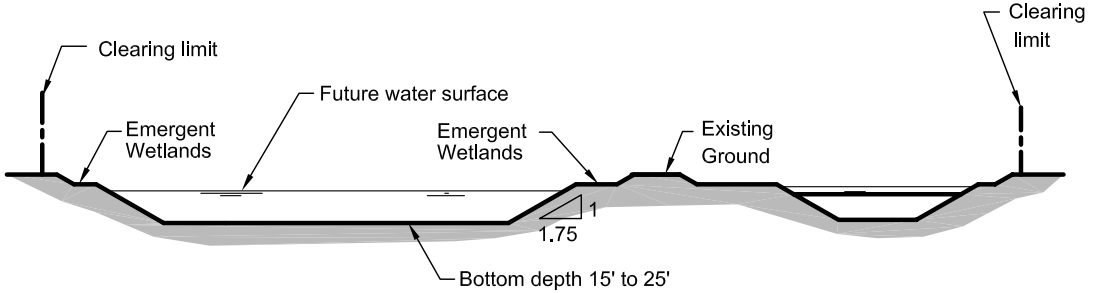


LEGEND:

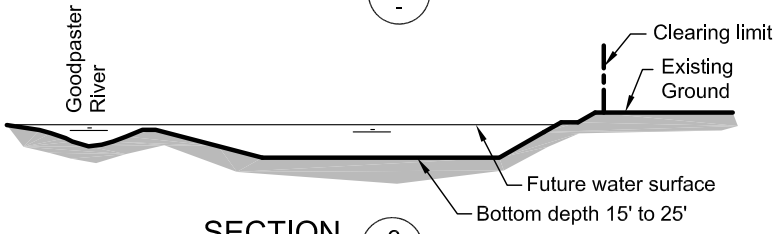
- Emergent Wetlands (1 foot above water)
- Shallow bar (max. 3' water depth)



SECTION A



SECTION B



SECTION C

Construction Notes

1. Excavated gravel will be used for site construction materials.

Reclamation Notes

1. Pump station, piping and other structures will be removed. Gravel pits will be converted to high value overwintering ponds and emergent wetlands. The ponds will be connected by a 100' wide channel.

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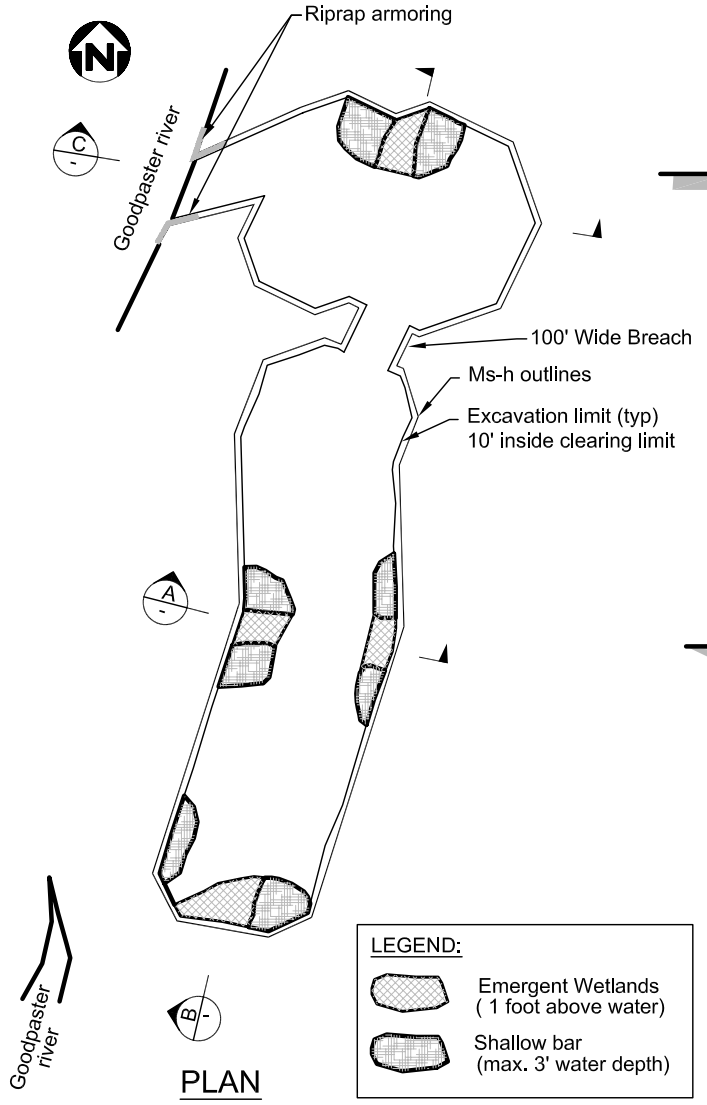
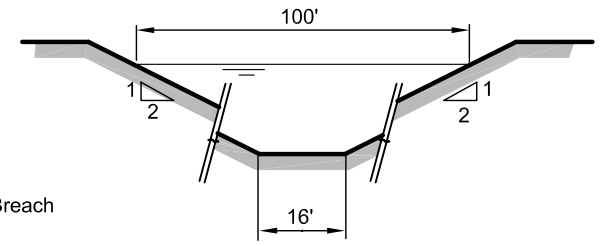
AIRSTRIP AREA
OFF RIVER TREATMENT WORKS
PLAN & SECTION - OPERATIONS
N31

15 AUG 2003

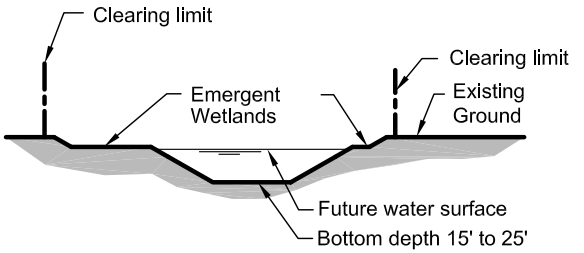
Reclaim off river. dwg



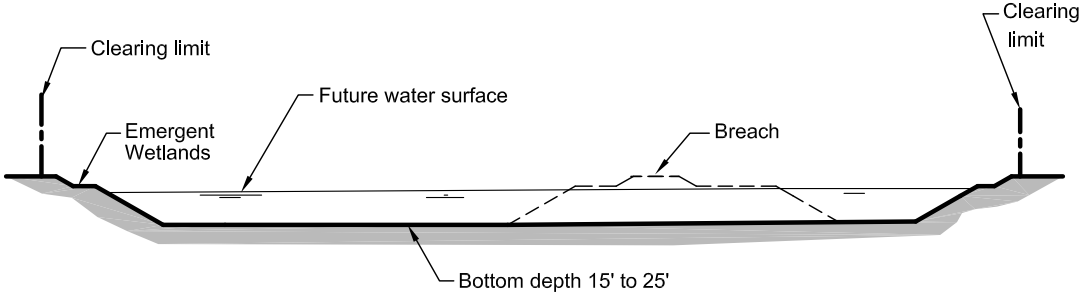
PLAN



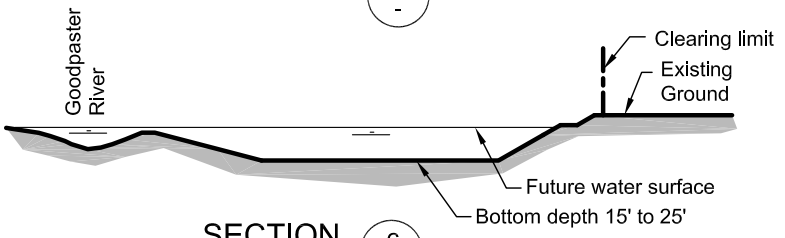
TYPICAL SECTION AT BREACH



SECTION A



SECTION B



SECTION C

Construction Notes

1. Excavated gravel will be used for site construction materials.

Reclamation Notes

1. Pump station, piping and other structures will be removed. Gravel pits will be converted to high value overwintering ponds and emergent wetlands. The ponds will be connected by a 100' wide channel.

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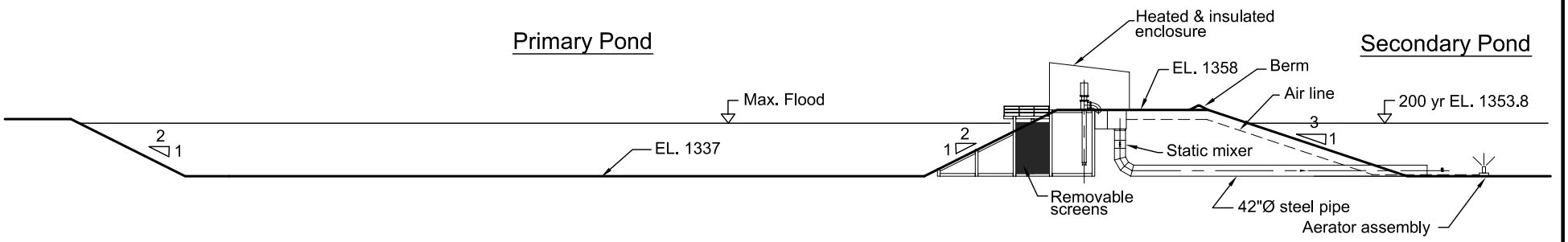
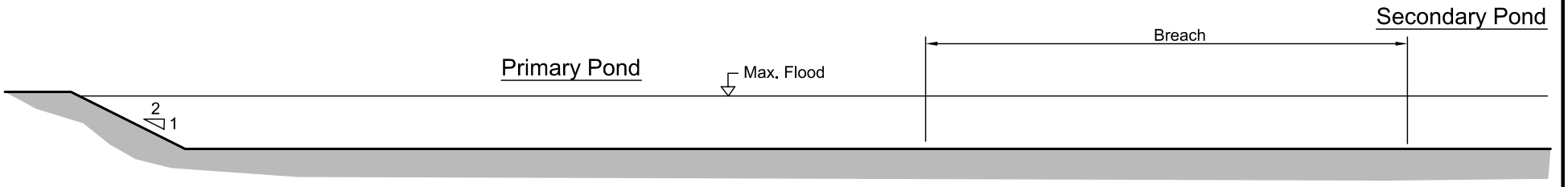
AIRSTRIP AREA
OFF RIVER TREATMENT WORKS
PLAN & SECTION - CLOSURE
N31

15 AUG 2003

Reclalm off rlver. dwg



TYPICAL SECTION - OFF RIVER TREATMENT FACILITY - PROPOSED



TYPICAL SECTION - OFF RIVER TREATMENT FACILITY - RECLAIMED

Construction Notes

1. Pumping Station

Reclamation Notes

1. When discharge to the off-river treatment works is no longer necessary, the pump station, other surface facilities, and piping will be removed and the system reclaimed. Ponds will be permanently connected to the river.

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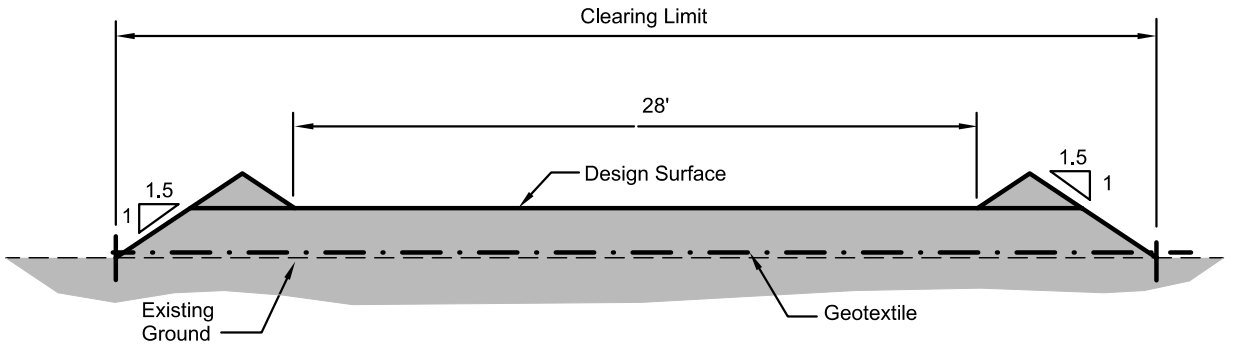
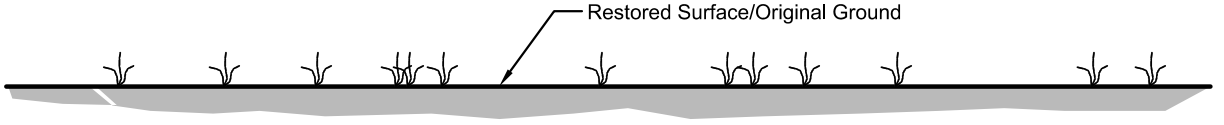
AIRSTRIP AREA
OFF RIVER TREATMENT WORKS
SECTION B
N31

15 AUG 2003

Reclaim off river. dwg



TYPICAL ROAD SECTION ON FLAT GROUND (WETLANDS) - PROPOSED



TYPICAL ROAD SECTION ON FLAT GROUND (WETLANDS) - RESTORED

Construction Notes

1. Overburden and bedrock are native materials.
2. Base material is 6" of 1" minus crushed & blended gravel.
3. Subbase material is 30" of 6" minus random fill (native).
4. Geotextile is a 16-oz, non-woven material or equivalent (as required).
5. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Culverts and fill will be removed and drainage paths re-established.
2. Geotextile to be removed.

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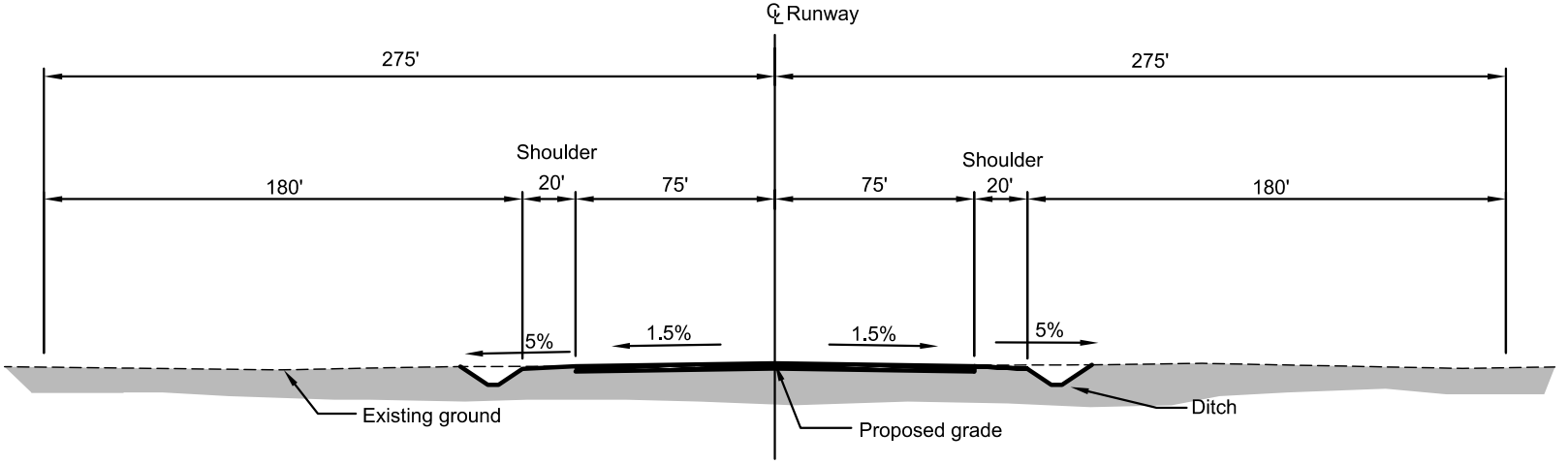
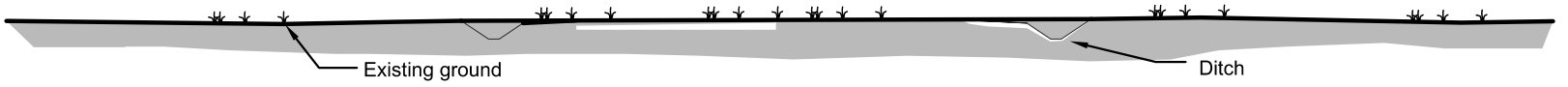
Q-1996-0211 Goodpaster 1 Sheet 32 of 75	**AIRSTRIP AREA** ROADWAYS ON FLAT GROUND RESTORED WETLAND AREAS N06

15 AUG 2003	Reclaim mine site roads. dwg



TYPICAL SECTION RUNWAY - PROPOSED



TYPICAL SECTION RUNWAY - RECLAIMED

Construction Notes

1. Surface material is 6" of 1" minus crushed & blended gravel.
2. Subbase material will be 30" of 6" minus random fill (native).

Reclamation Notes

1. Airstrip will be ripped or scarified and spread with growth media.

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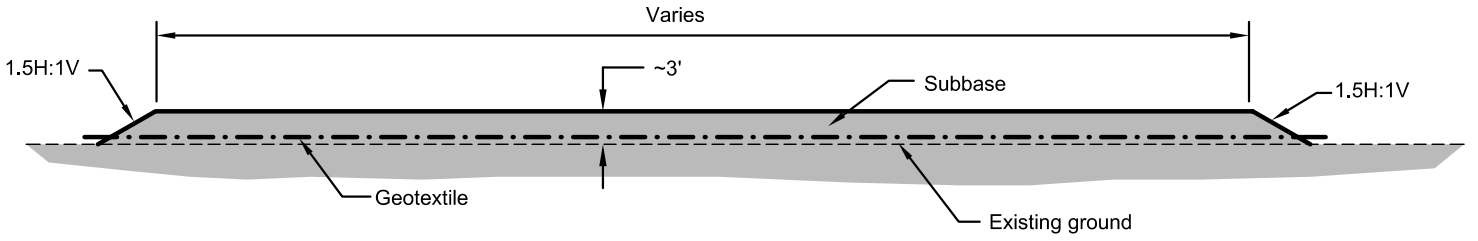
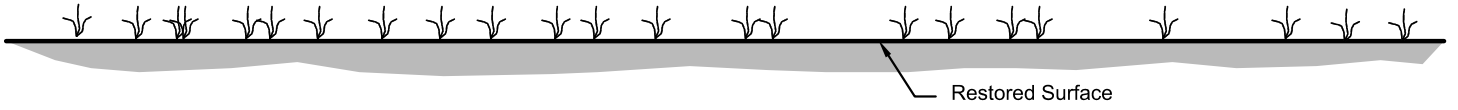
AIRSTRIP AREA
AIRSTRIP
TYPICAL SECTION
N07

15 AUG 2003

Reclaim airstrip-conlaydown.dwg



TYPICAL SECTION - APRON/BATCH PLANT/CONTRACTOR LAYDOWN (WETLANDS) - PROPOSED



TYPICAL SECTION - APRON/BATCH PLANT/CONTRACTOR LAYDOWN (WETLANDS) - RESTORED

Material Site Notes

1. Base material is 6" of 1" minus crushed & blended gravel.

2. Subbase material will be 30" of 6" minus random fill (native).

3. Geotextile is a 16-oz, non-woven material or equivalent (as required).

Reclamation Notes

1. Fill removed to the original ground surface.

2. Geotextile will be removed.

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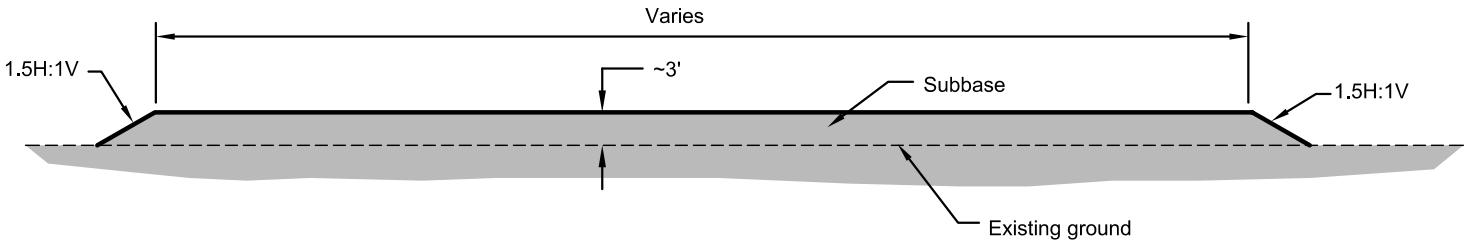
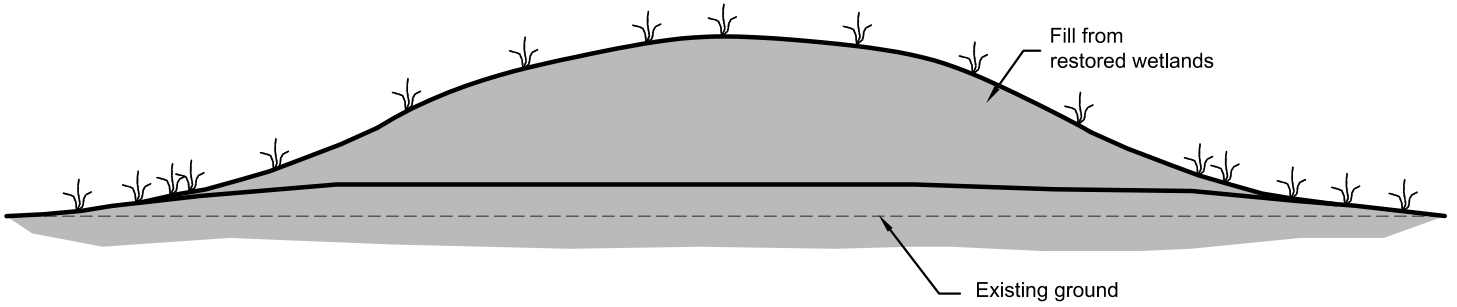
AIRSTRIP AREA
CONSTRUCTION LAYDOWN
RESTORED WETLAND AREAS
N11

15 AUG 2003

Reclaim airstrip-conlaydown.dwg



TYPICAL SECTION - APRON/BATCH PLANT/CONTRACTOR LAYDOWN (UPLANDS AND WETLANDS MOSAIC) - PROPOSED



TYPICAL SECTION - APRON/BATCH PLANT/CONTRACTOR LAYDOWN (UPLANDS AND WETLANDS MOSAIC) - RECLAIMED

Material Site Notes

1. Base material is 6" of 1" minus crushed & blended gravel.
2. Subbase material will be 30" of 6" minus random fill (native).

Reclamation Notes

1. The construction laydown areas will be recontoured for drainage and terrain. Edges will be tapered. The pad surface will be ripped or scarified, spread with growth media.
2. When fill is removed from wetland areas being restored, it will be stacked on upland & mosaic fills.

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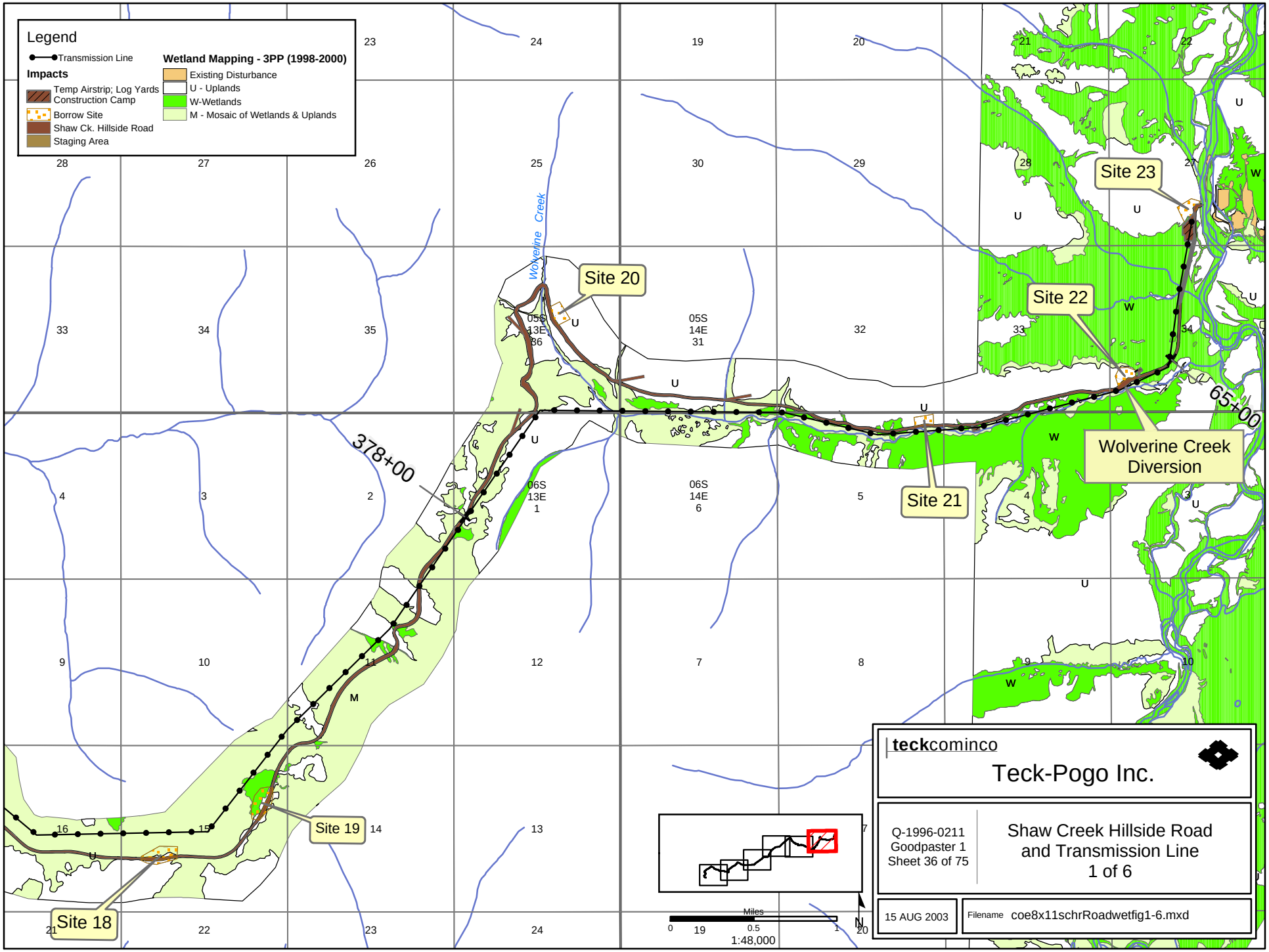
AIRSTRIP AREA
CONSTRUCTION LAYDOWN
UPLAND/WETLAND MOSAIC
N11

15 AUG 2003

Reclaim airstrip-conlaydown.dwg


Legend
Transmission Line
Impacts
Temp Airstrip; Log Yards Construction Camp
Borrow Site
Shaw Ck. Hillside Road
Staging Area
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
Site 18
Site 19
Site 20
Site 21
Site 22
Site 23
Wolverine Creek Diversion
Wolverine Creek
378+00
65+00
05S 13E 36
05S 14E 31
06S 13E 1
06S 14E 6
Miles
0 0.5 1
1:48,000
N
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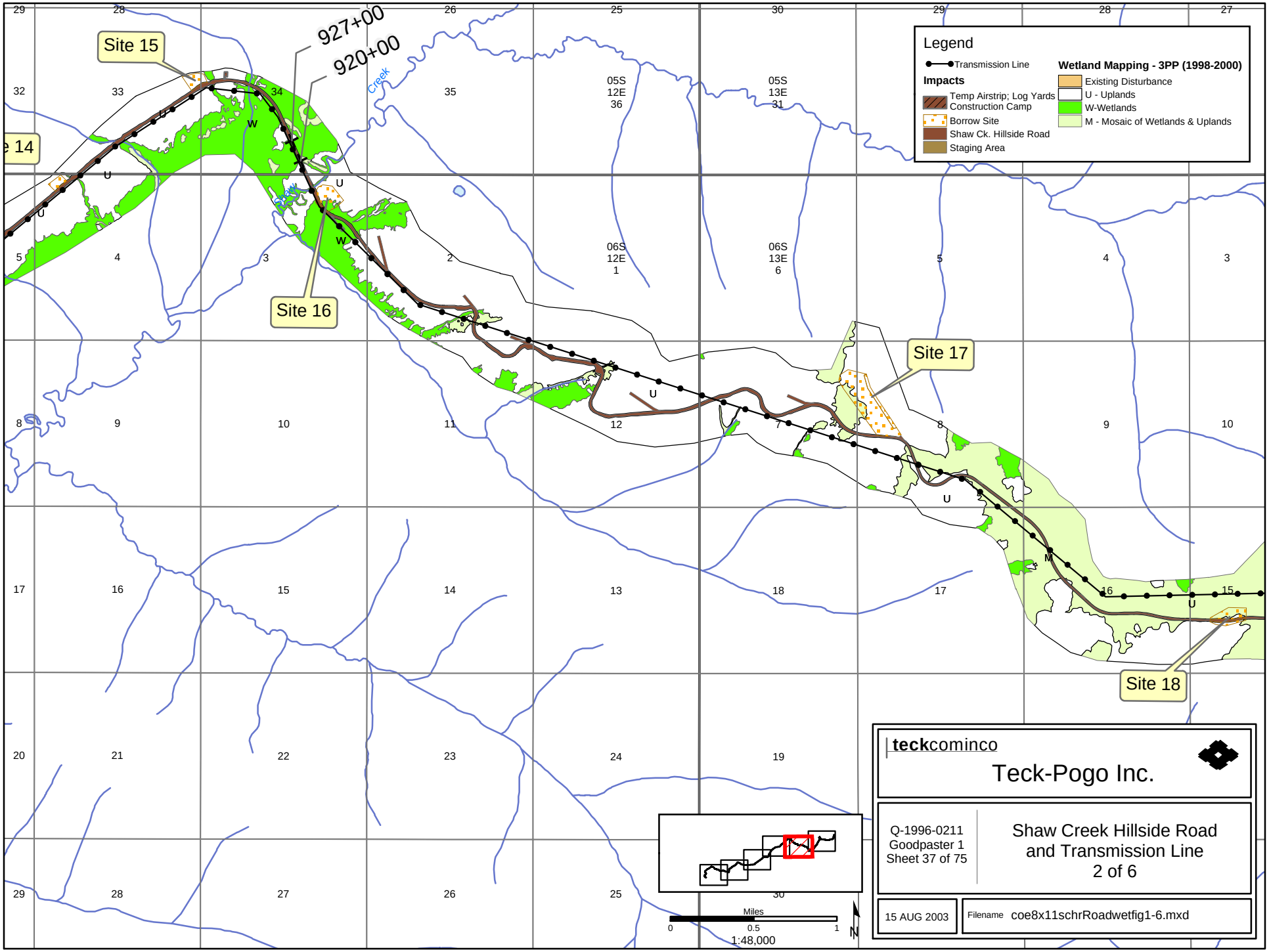
Q-1996-0211
Goodpaster 1
Sheet 36 of 75
Shaw Creek Hillside Road and Transmission Line
1 of 6
15 AUG 2003
Filename coe8x11schrRoadwetfig1-6.mxd


Site 15
927+00
920+00
Site 14
Site 16
Site 17
Site 18
Creek
Legend
Transmission Line
Impacts
Temp Airstrip; Log Yards Construction Camp
Borrow Site
Shaw Ck. Hillside Road
Staging Area
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
05S 12E 36
05S 13E 31
06S 12E 1
06S 13E 6
Miles
0
0.5
1
1:48,000
N
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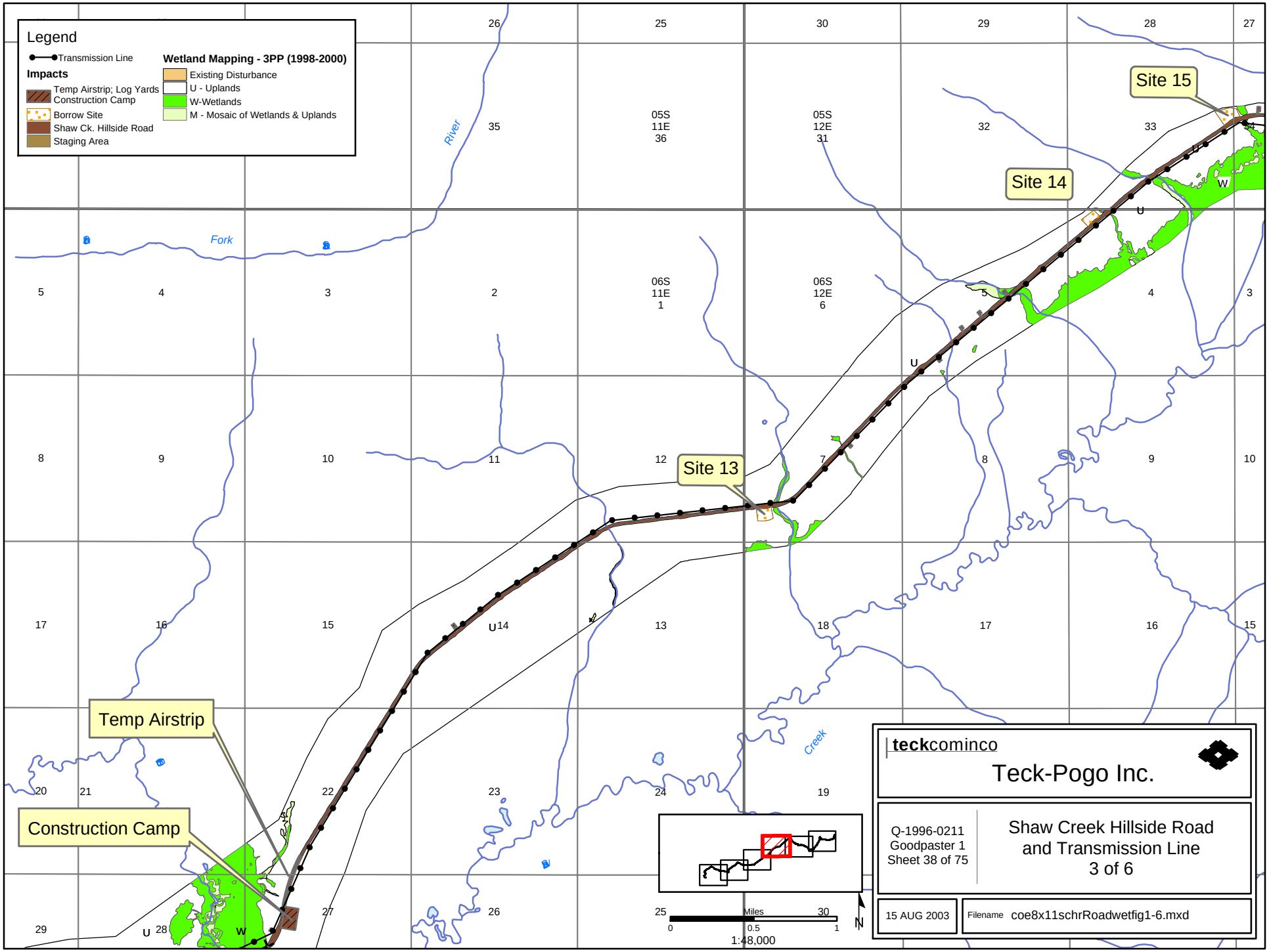
Goodpaster 1
Sheet 37 of 75
Shaw Creek Hillside Road
and Transmission Line
2 of 6
15 AUG 2003
Filename coe8x11schrRoadwetfig1-6.mxd


Legend
Transmission Line
Impacts
Temp Airstrip; Log Yards Construction Camp
Borrow Site
Shaw Ck. Hillside Road
Staging Area
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
Site 15
Site 14
Site 13
Temp Airstrip
Construction Camp
05S 11E 36
05S 12E 31
06S 11E 1
06S 12E 6
River
Fork
Creek
Miles
0
0.5
1
1:48,000
N
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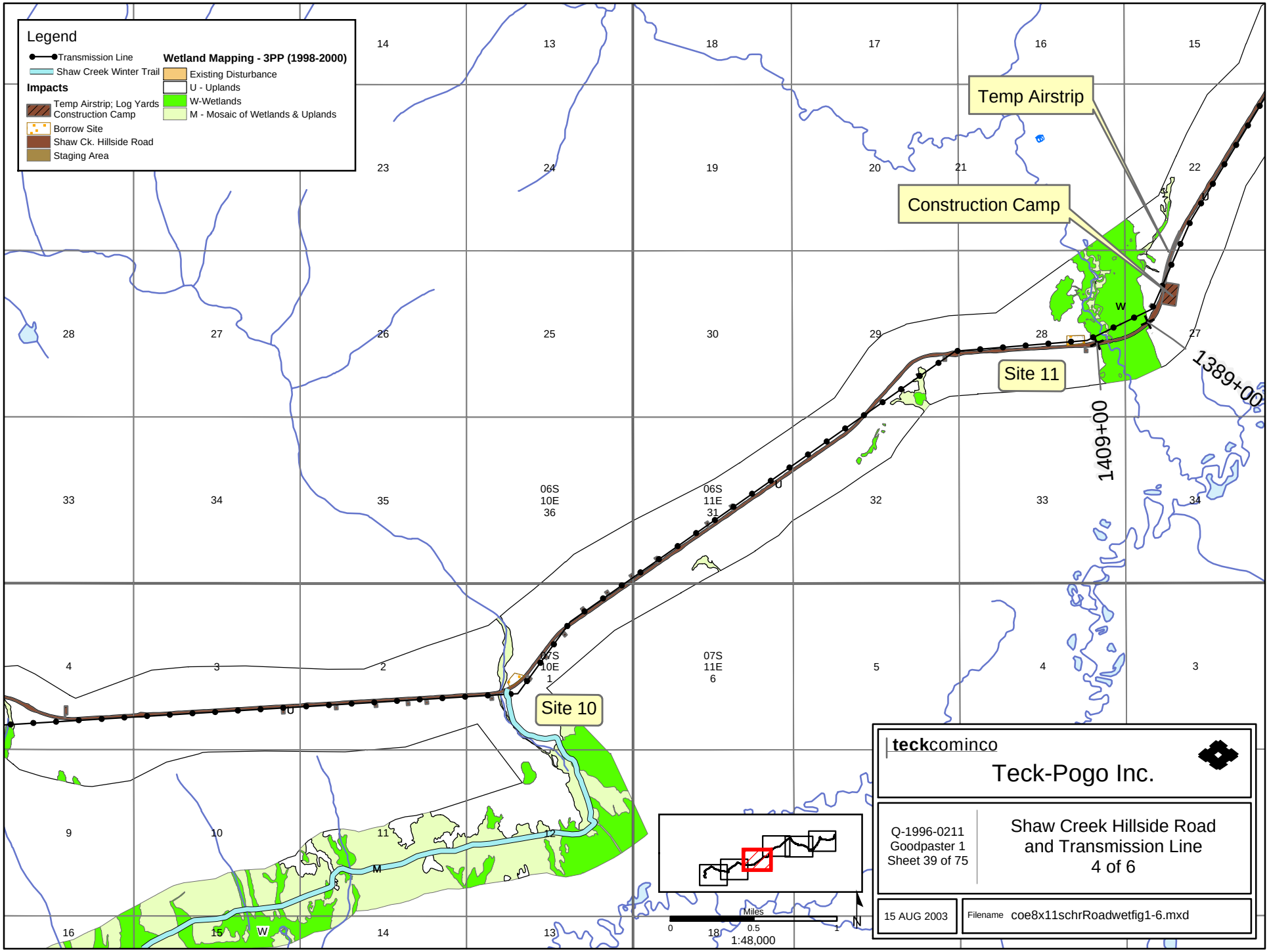
Q-1996-0211
Goodpaster 1
Sheet 38 of 75
Shaw Creek Hillside Road
and Transmission Line
3 of 6
15 AUG 2003
Filename coe8x11schrRoadwetfig1-6.mxd


Legend
Transmission Line
Shaw Creek Winter Trail
Impacts
Temp Airstrip; Log Yards Construction Camp
Borrow Site
Shaw Ck. Hillside Road
Staging Area
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
Temp Airstrip
Construction Camp
Site 11
Site 10
1389+00
1409+00
06S 10E 36
06S 11E 31
07S 10E 1
07S 11E 6
Miles
0
0.5
1
1:48,000
N
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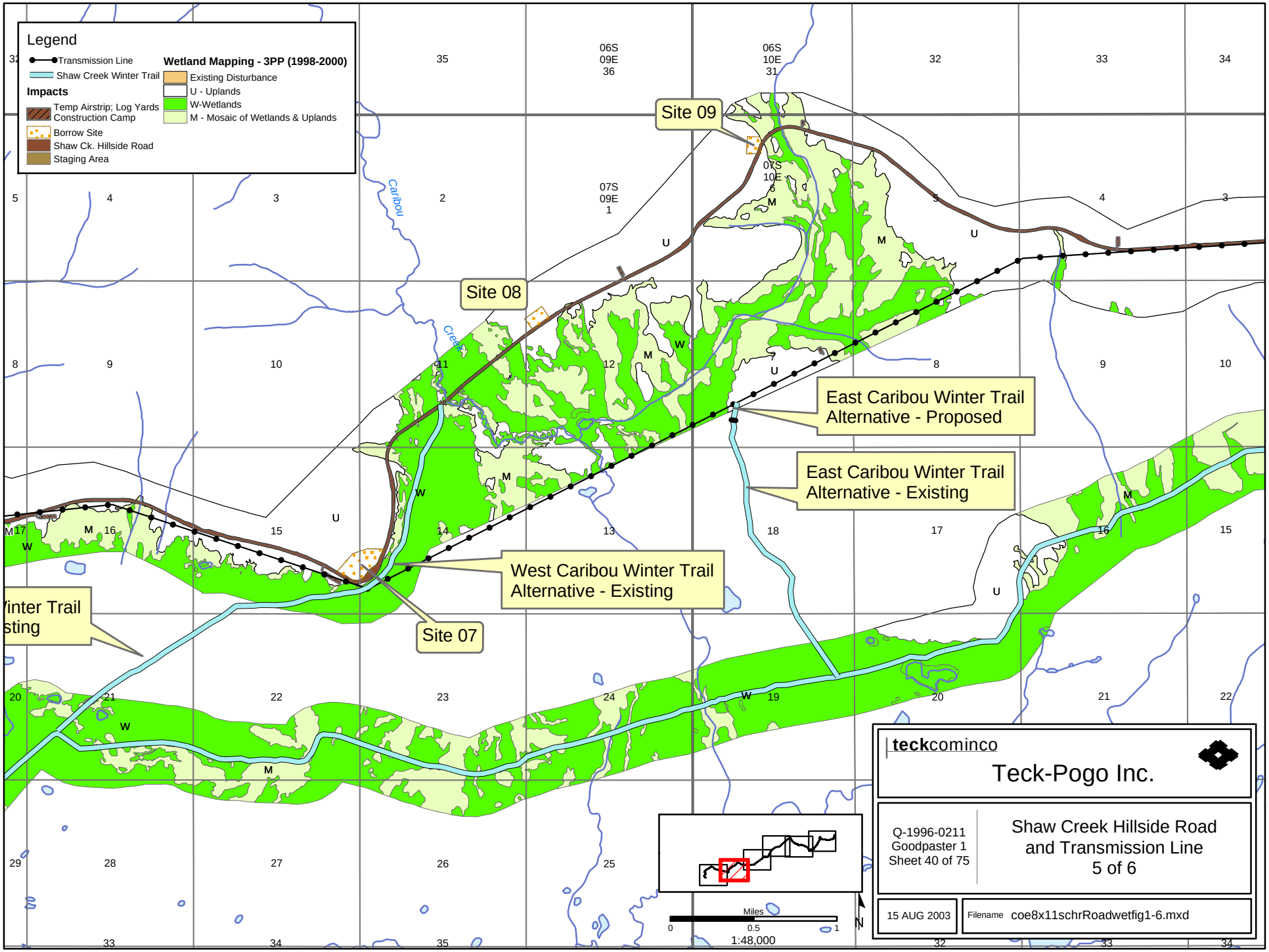
Goodpaster 1
Sheet 39 of 75
Shaw Creek Hillside Road and Transmission Line
4 of 6
15 AUG 2003
Filename coe8x11schrRoadwetfig1-6.mxd


Legend
Transmission Line
Shaw Creek Winter Trail
Impacts
Temp Airstrip; Log Yards Construction Camp
Borrow Site
Shaw Ck. Hillside Road
Staging Area
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
Site 09
Site 08
Site 07
East Caribou Winter Trail Alternative - Proposed
East Caribou Winter Trail Alternative - Existing
West Caribou Winter Trail Alternative - Existing
Caribou
Creek
06S 09E 36
06S 10E 31
07S 09E 1
07S 10E 6
Miles
0
0.5
1
1:48,000
N
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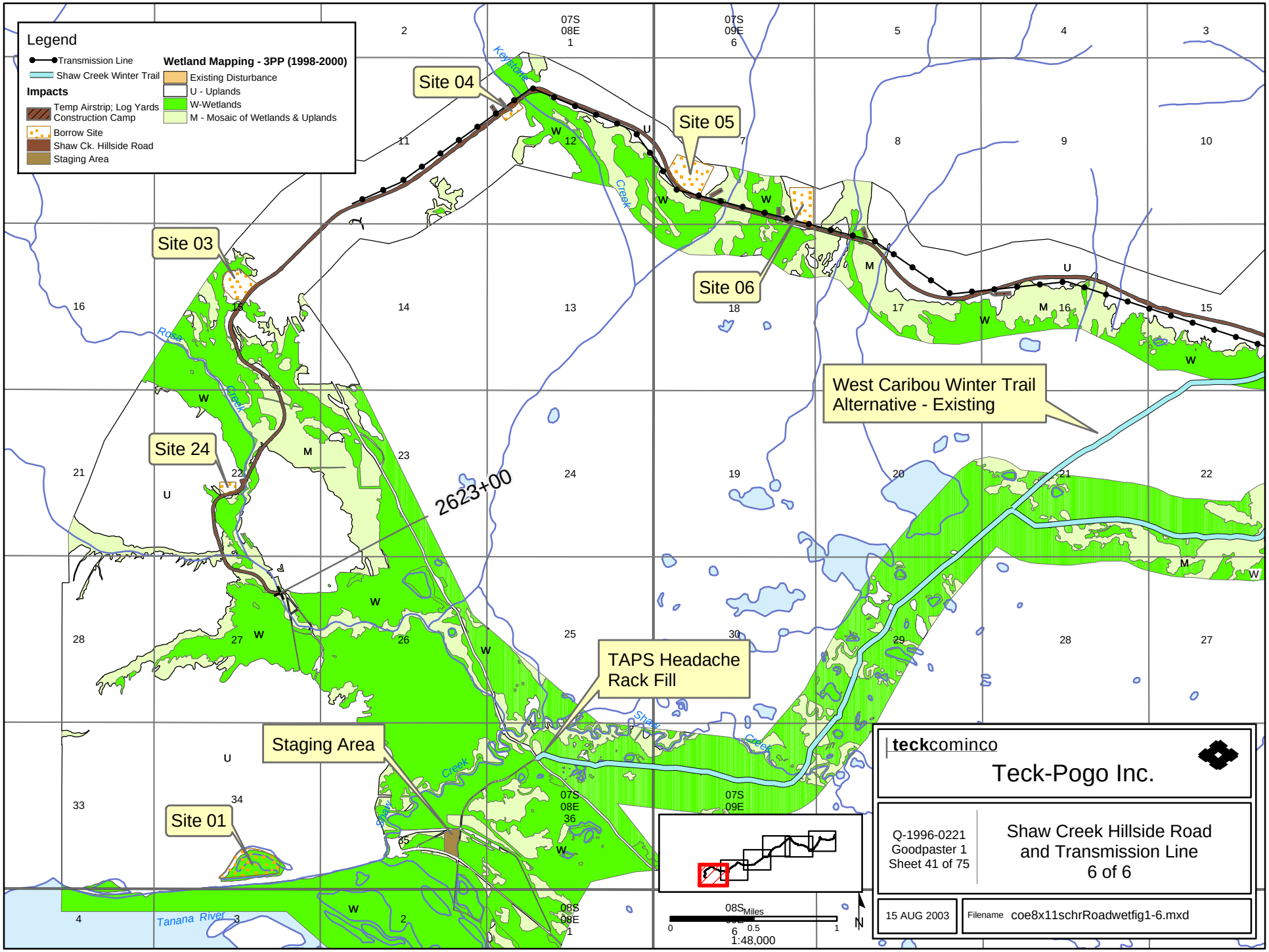
Sheet 40 of 75
Shaw Creek Hillside Road and Transmission Line
5 of 6
15 AUG 2003
Filename coe8x11schrRoadwetfig1-6.mxd


Legend
Transmission Line
Shaw Creek Winter Trail
Impacts
Temp Airstrip; Log Yards Construction Camp
Borrow Site
Shaw Ck. Hillside Road
Staging Area
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
Site 04
Site 05
Site 06
Site 03
Site 24
Site 01
2623+00
West Caribou Winter Trail Alternative - Existing
TAPS Headache Rack Fill
Staging Area
Tanana River
Shaw Creek
Keystone Creek
Road Creek
07S 08E
07S 09E
08S 08E
1:48,000
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Sheet 41 of 75
Shaw Creek Hillside Road and Transmission Line
6 of 6
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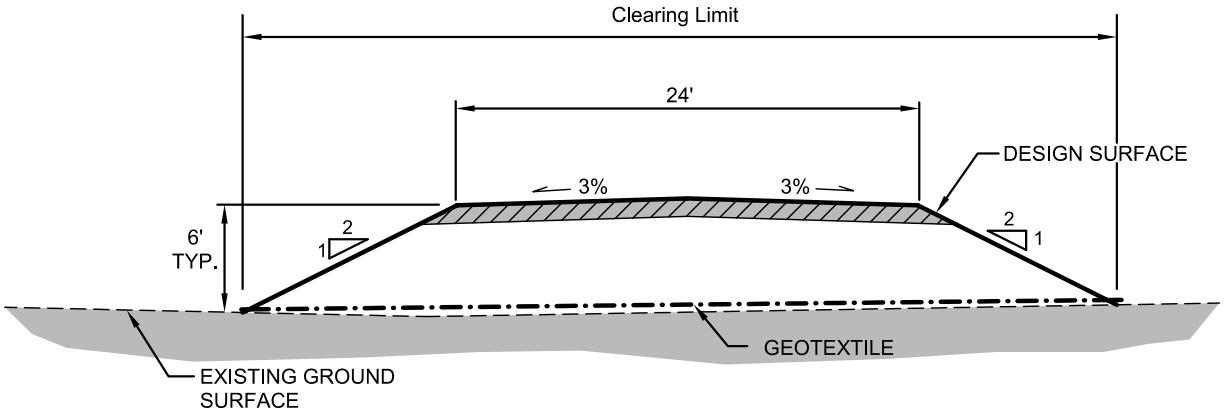
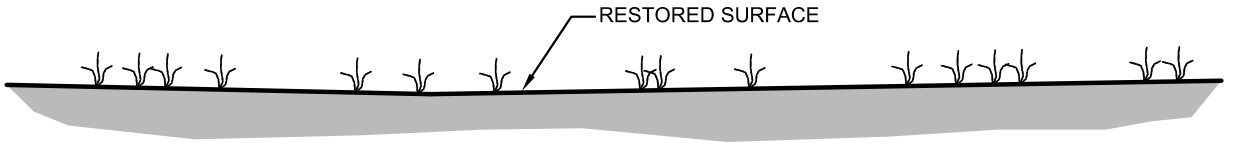
Filename coe8x11schrRoadwetfig1-6.mxd



ROAD TYPICAL SECTION FOR WETLAND FILL AREAS - PROPOSED



ROAD TYPICAL SECTION FOR WETLAND FILL AREAS - RESTORED

Construction Notes

1. Overburden and bedrock are native materials.
2. Base material is 6" of 1" minus crushed & blended gravel.
3. Subbase material is 30" of 6" minus random fill (native).
4. Geotextile is a 16-oz, non-woven material or equivalent (as required).
5. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Culverts and fill will be removed and drainage paths re-established.
2. Geotextile to be removed.

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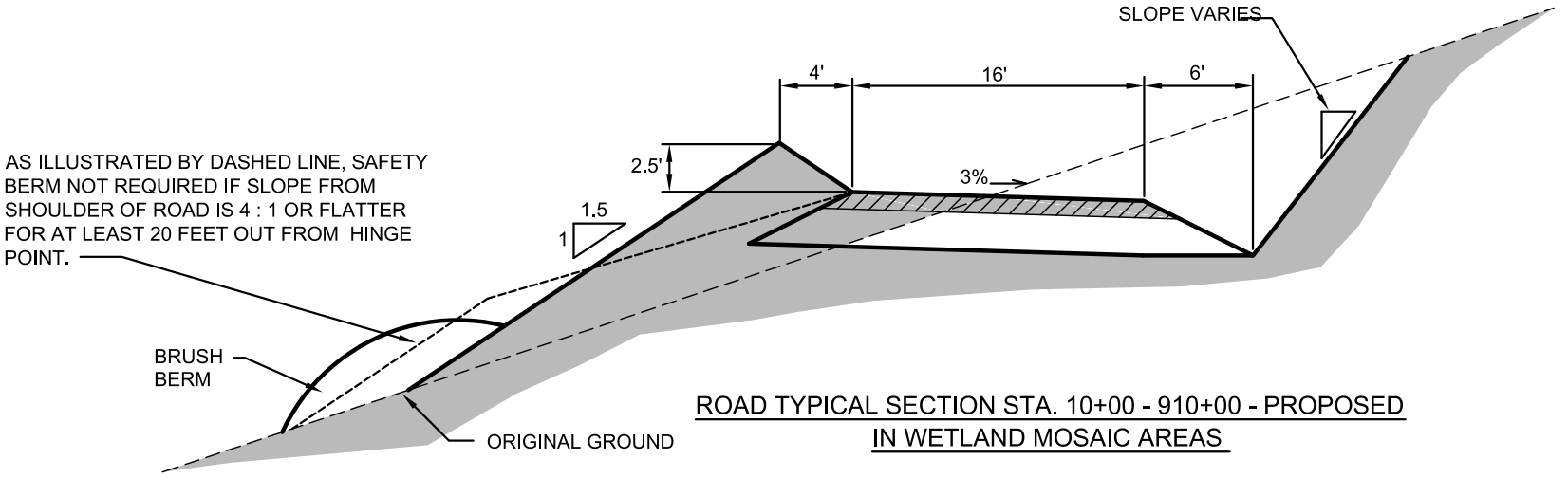
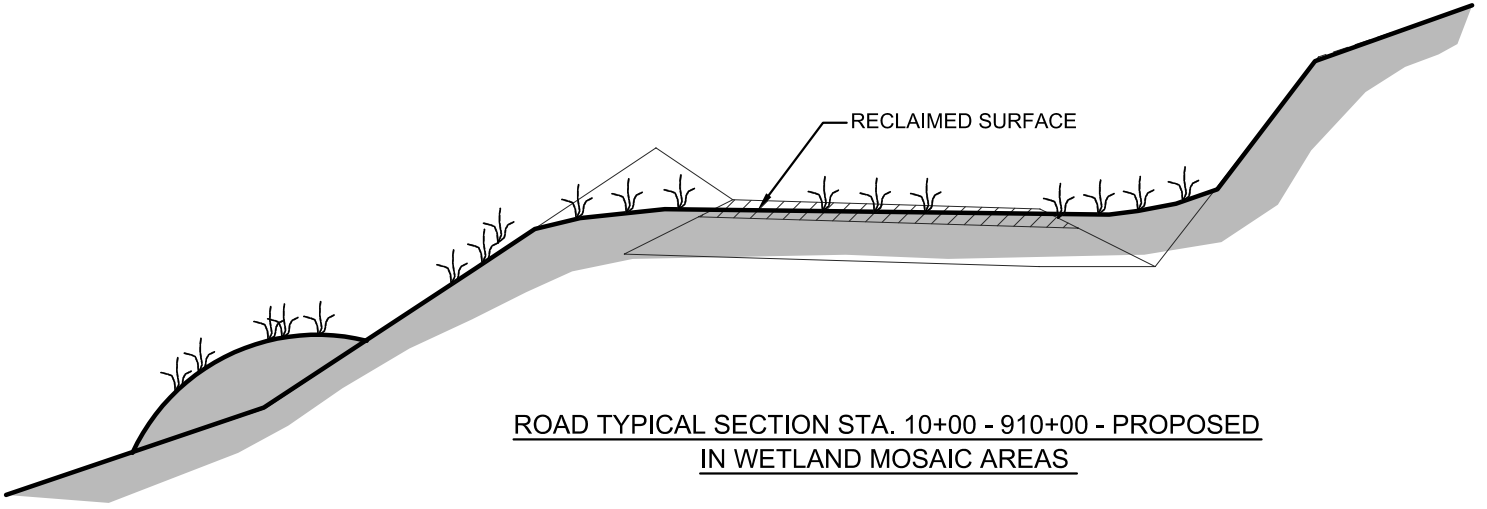
SHAW CREEK HILLSIDE ROAD
TYPICAL ROADWAY SECTIONS
RESTORED WETLAND AREAS

15 AUG 2003

Reclaim access roads. dwg



ROAD TYPICAL SECTION STA. 10+00 - 910+00 - PROPOSED
IN WETLAND MOSAIC AREAS



ROAD TYPICAL SECTION STA. 10+00 - 910+00 - PROPOSED
IN WETLAND MOSAIC AREAS

Construction Notes

1. Base material is 6" of 1" minus crushed & blended gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Access and service roads will be ripped or scarified, spread with growth media. Culverts will be removed and drainage paths re-established.

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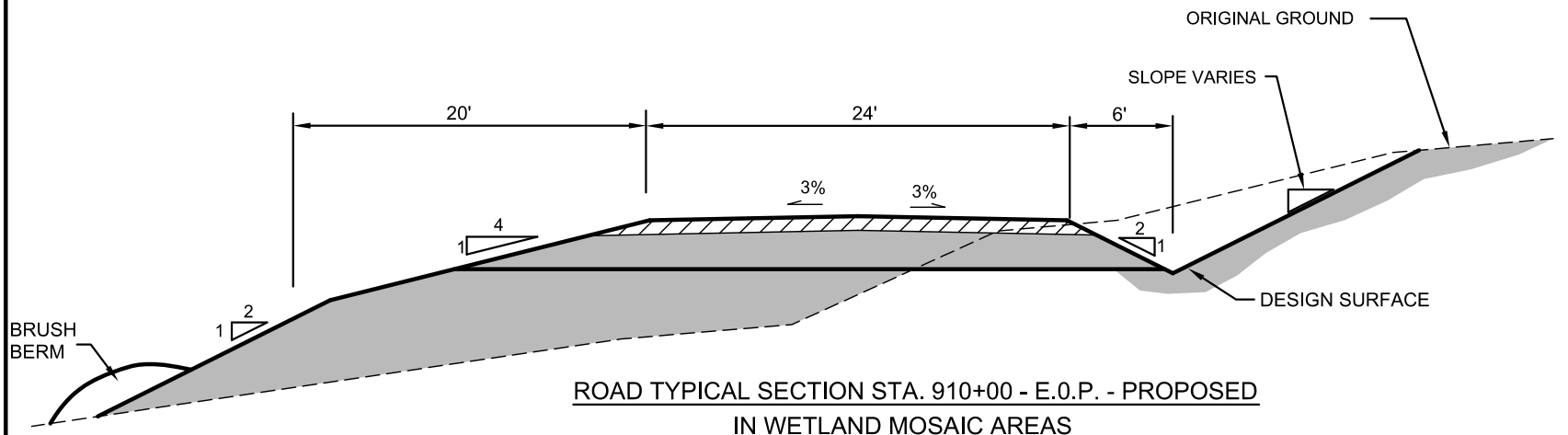
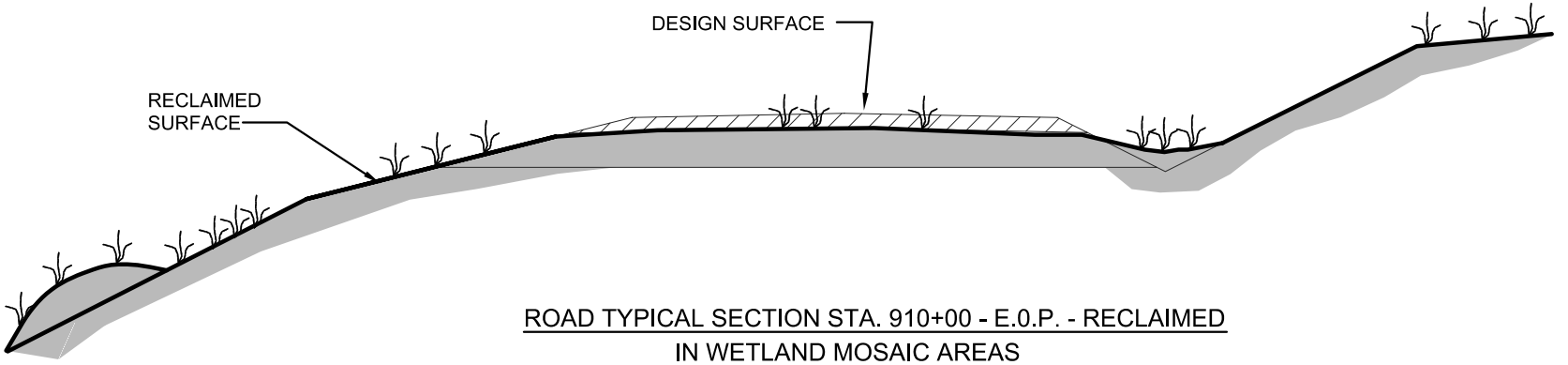
SHAW CREEK HILLSIDE ROAD
TYPICAL ROADWAY SECTIONS
WETLAND MOSAIC AREAS

15 AUG 2003

Reclaim access roads. dwg



ROAD TYPICAL SECTION STA. 910+00 - E.0.P. - PROPOSED
IN WETLAND MOSAIC AREAS



ROAD TYPICAL SECTION STA. 910+00 - E.0.P. - RECLAIMED
IN WETLAND MOSAIC AREAS

Construction Notes

1. Base material is 6" of 1" minus crushed & blended gravel.
2. Subbase material is 30" of 6" minus random fill (native).
3. Fill slopes with general structural fill will be 1.5H:1V.

Reclamation Notes

1. Access and service roads will be ripped or scarified, spread with growth media. Culverts will be removed and drainage paths re-established.

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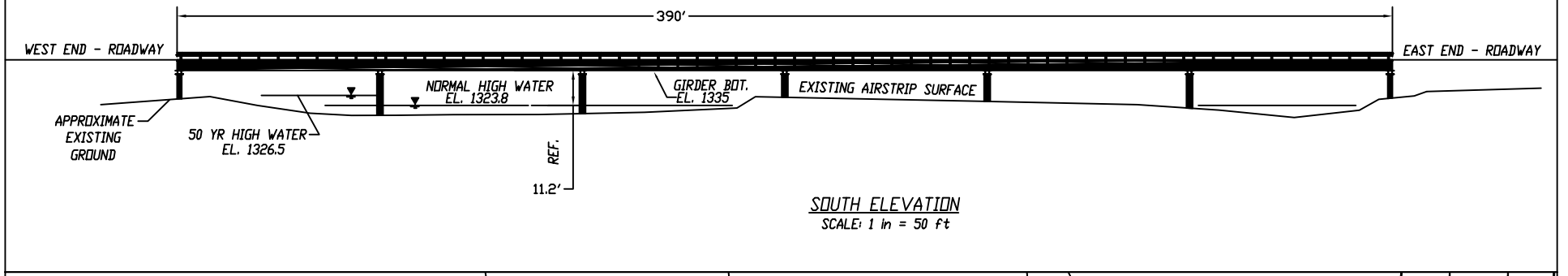
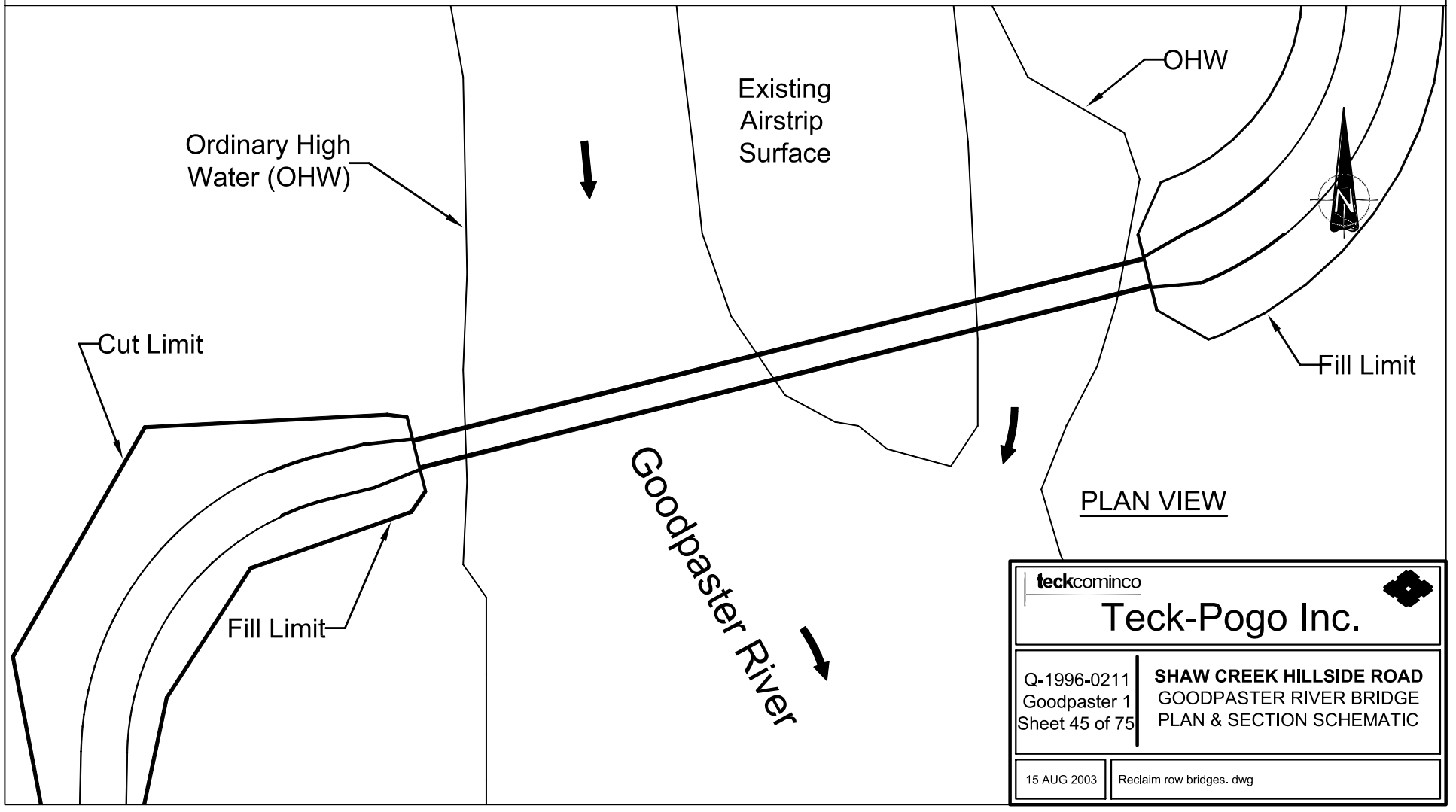
Q-1996-0211 Goodpaster 1 Sheet 44 of 75	**SHAW CREEK HILLSIDE ROAD** TYPICAL ROADWAY SECTIONS STA. 910+00 - E.O.P.
15 AUG 2003	Reclaim access roads. dwg



SOUTH ELEVATION
SCALE: 1 in = 50 ft



PLAN VIEW

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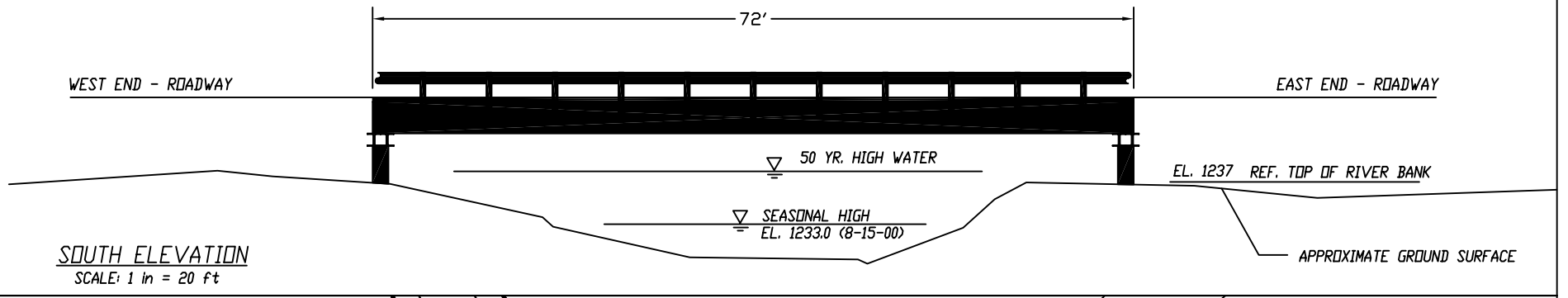
Goodpaster 1
Sheet 45 of 75

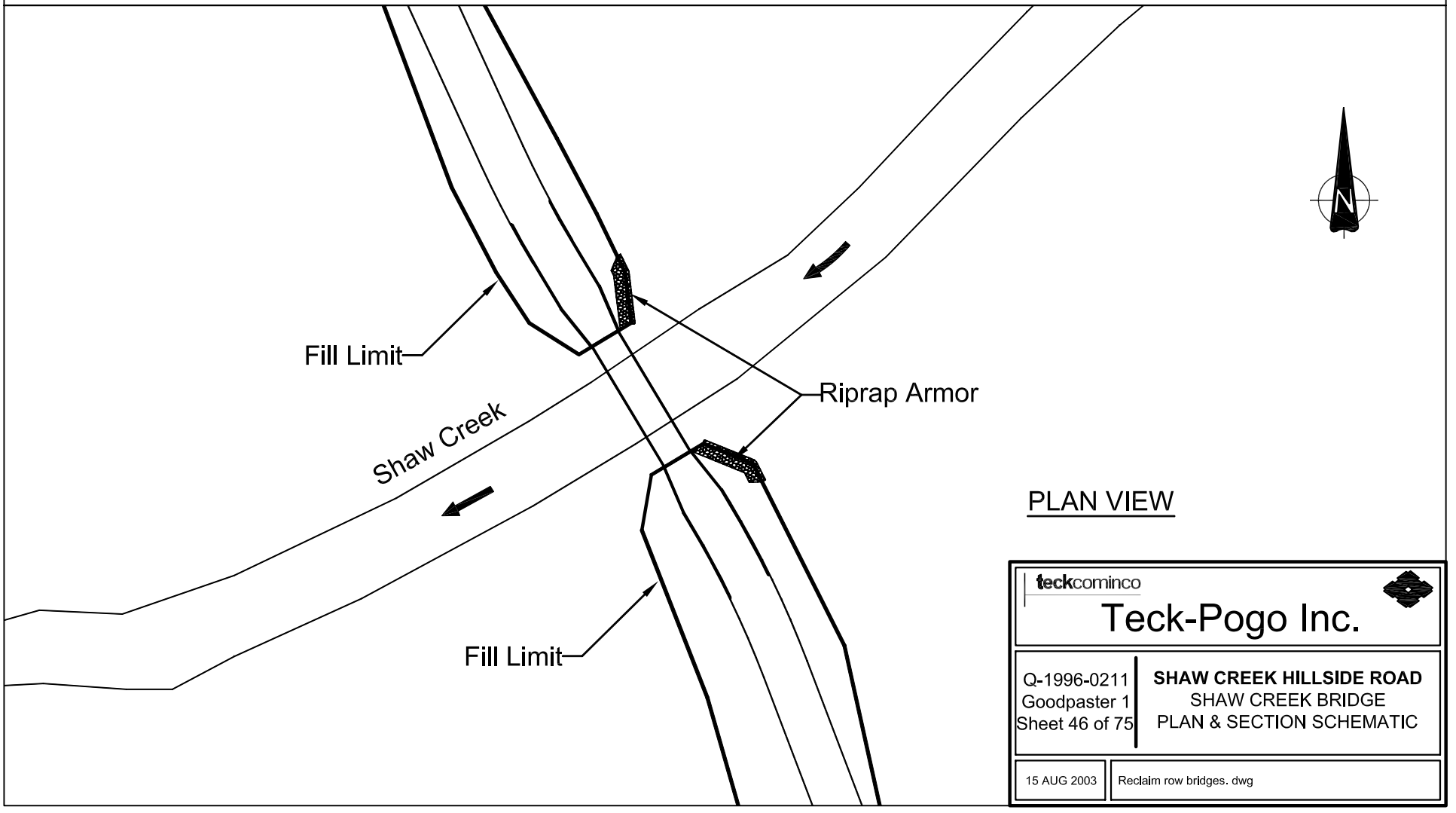
SHAW CREEK HILLSIDE ROAD
GOODPASTER RIVER BRIDGE
PLAN & SECTION SCHEMATIC

15 AUG 2003

Reclaim row bridges. dwg



SOUTH ELEVATION
SCALE: 1 in = 20 ft



PLAN VIEW

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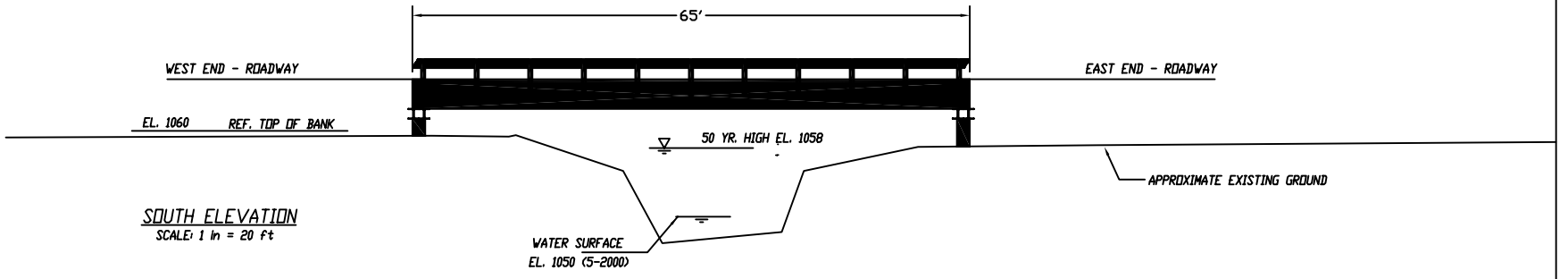
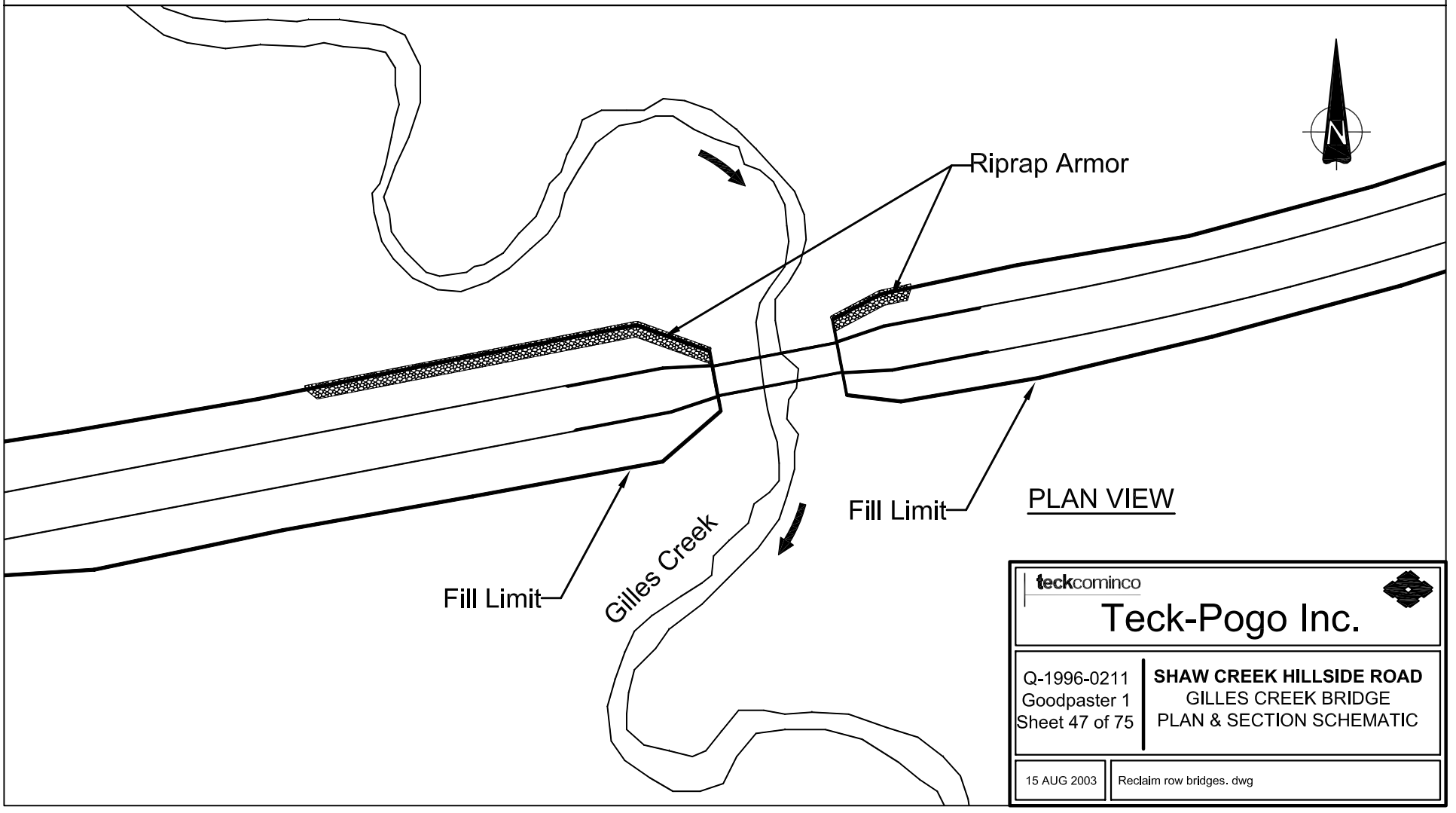
Q-1996-0211 Goodpaster 1 Sheet 46 of 75	**SHAW CREEK HILLSIDE ROAD** SHAW CREEK BRIDGE PLAN & SECTION SCHEMATIC
15 AUG 2003	Reclaim row bridges. dwg



SOUTH ELEVATION
SCALE: 1 in = 20 ft



PLAN VIEW

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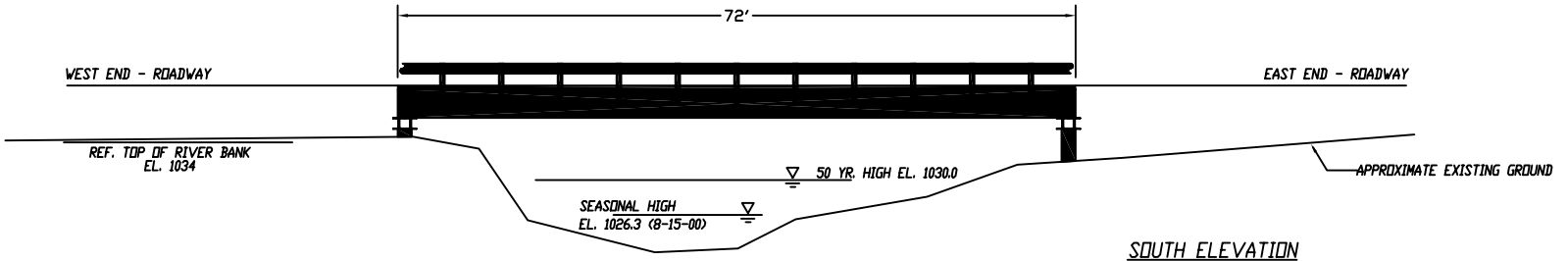
Goodpaster 1
Sheet 47 of 75

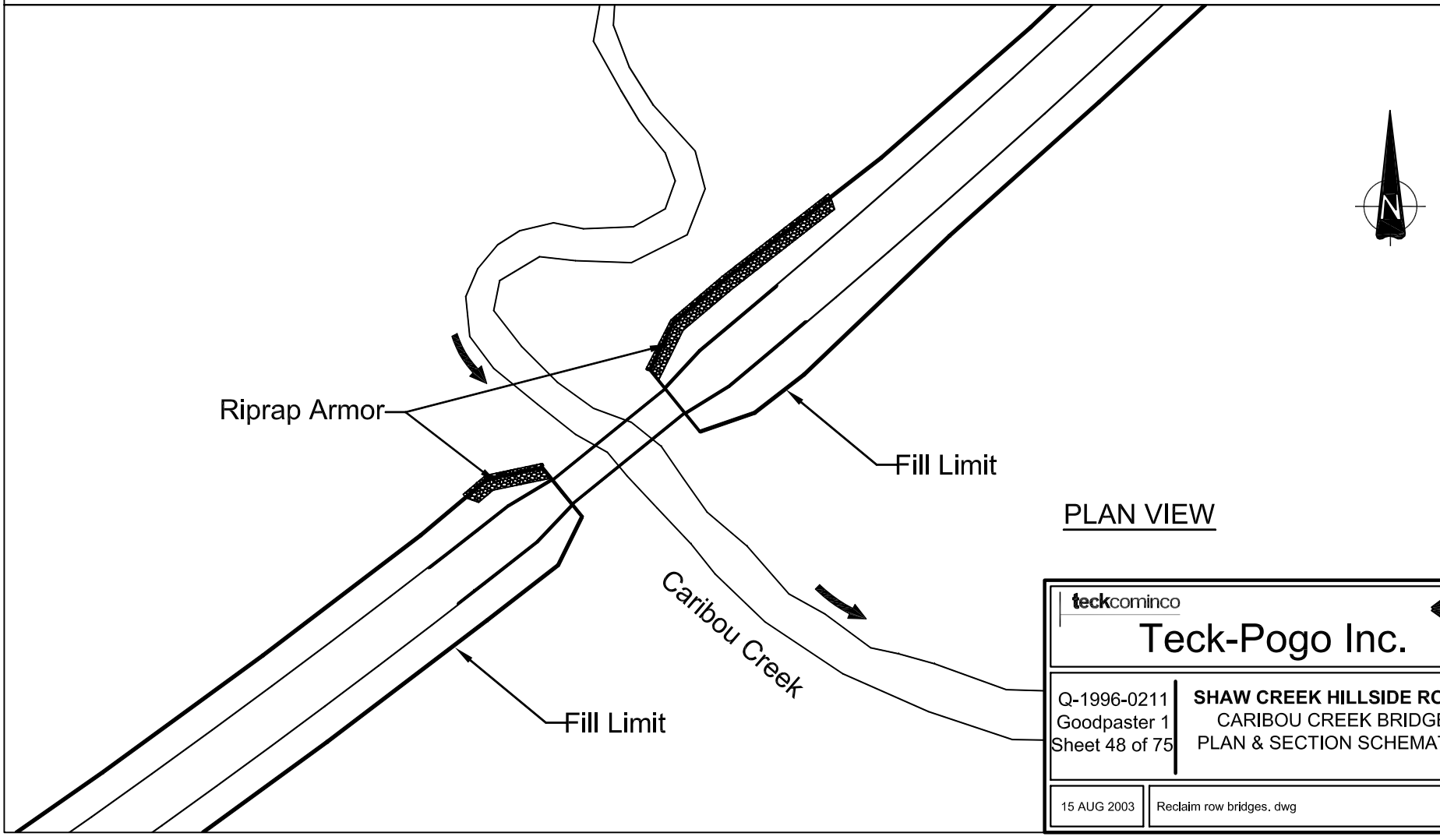
SHAW CREEK HILLSIDE ROAD
GILLES CREEK BRIDGE
PLAN & SECTION SCHEMATIC

15 AUG 2003

Reclaim row bridges. dwg



SOUTH ELEVATION
SCALE: 1 in = 20 ft



PLAN VIEW

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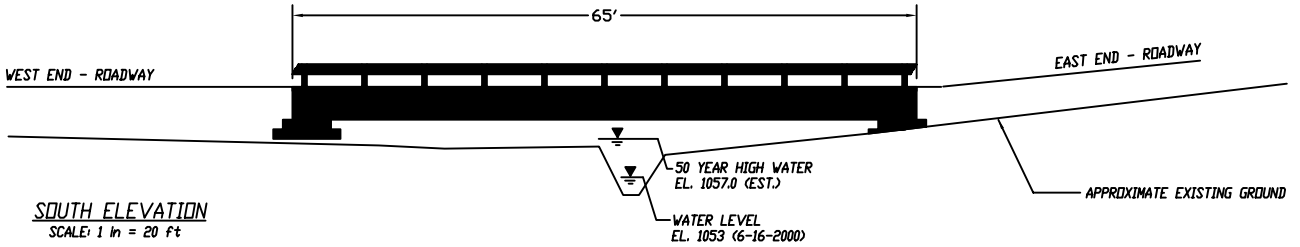
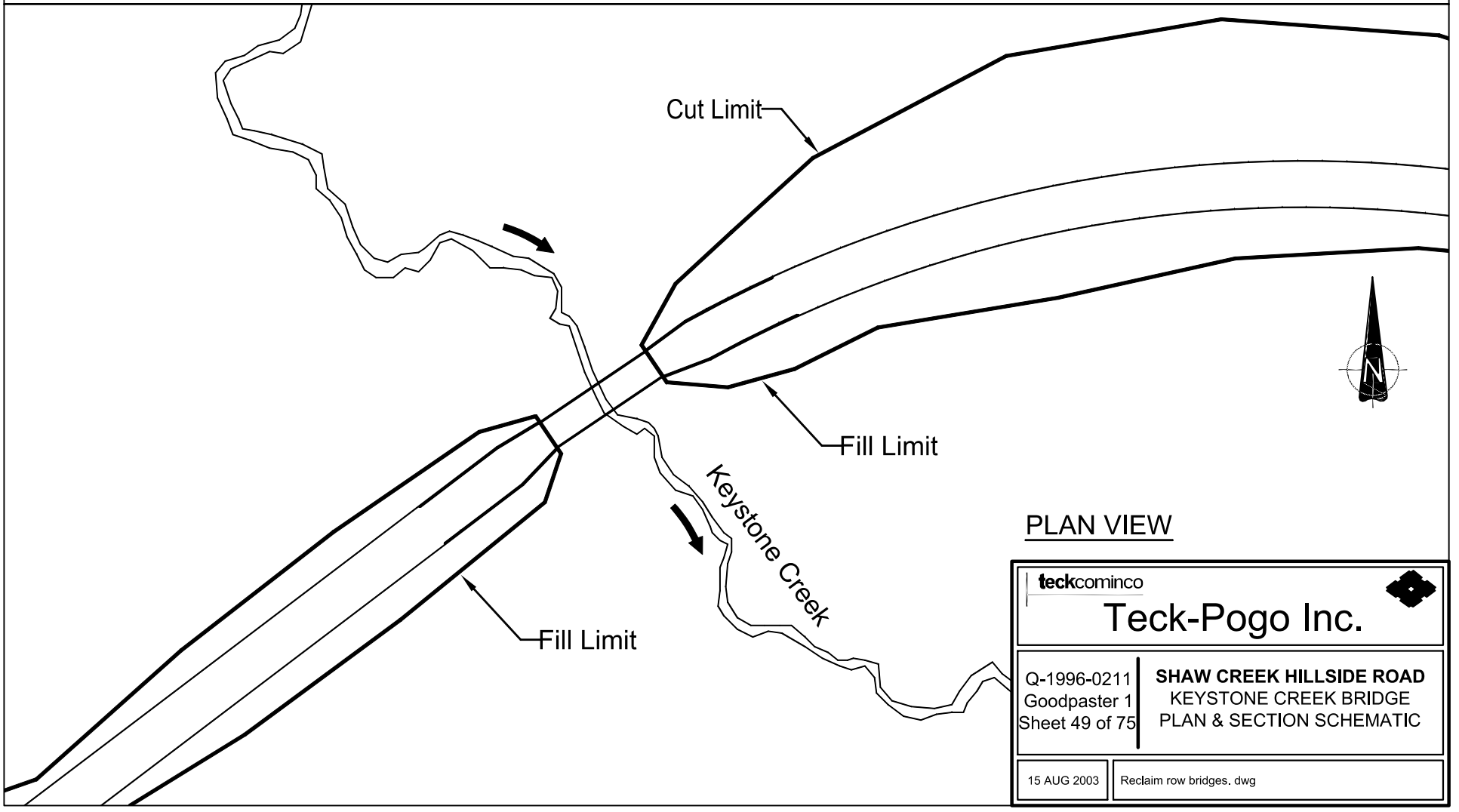
Goodpaster 1
Sheet 48 of 75

SHAW CREEK HILLSIDE ROAD
CARIBOU CREEK BRIDGE
PLAN & SECTION SCHEMATIC

15 AUG 2003 | Reclaim row bridges. dwg



SOUTH ELEVATION
SCALE: 1 in = 20 ft



PLAN VIEW

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Goodpaster 1
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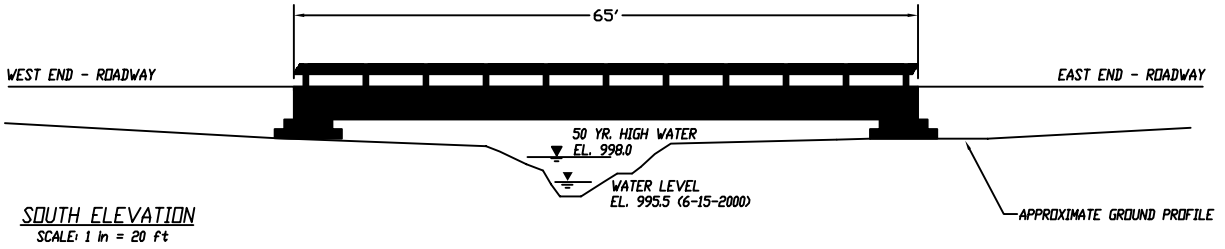
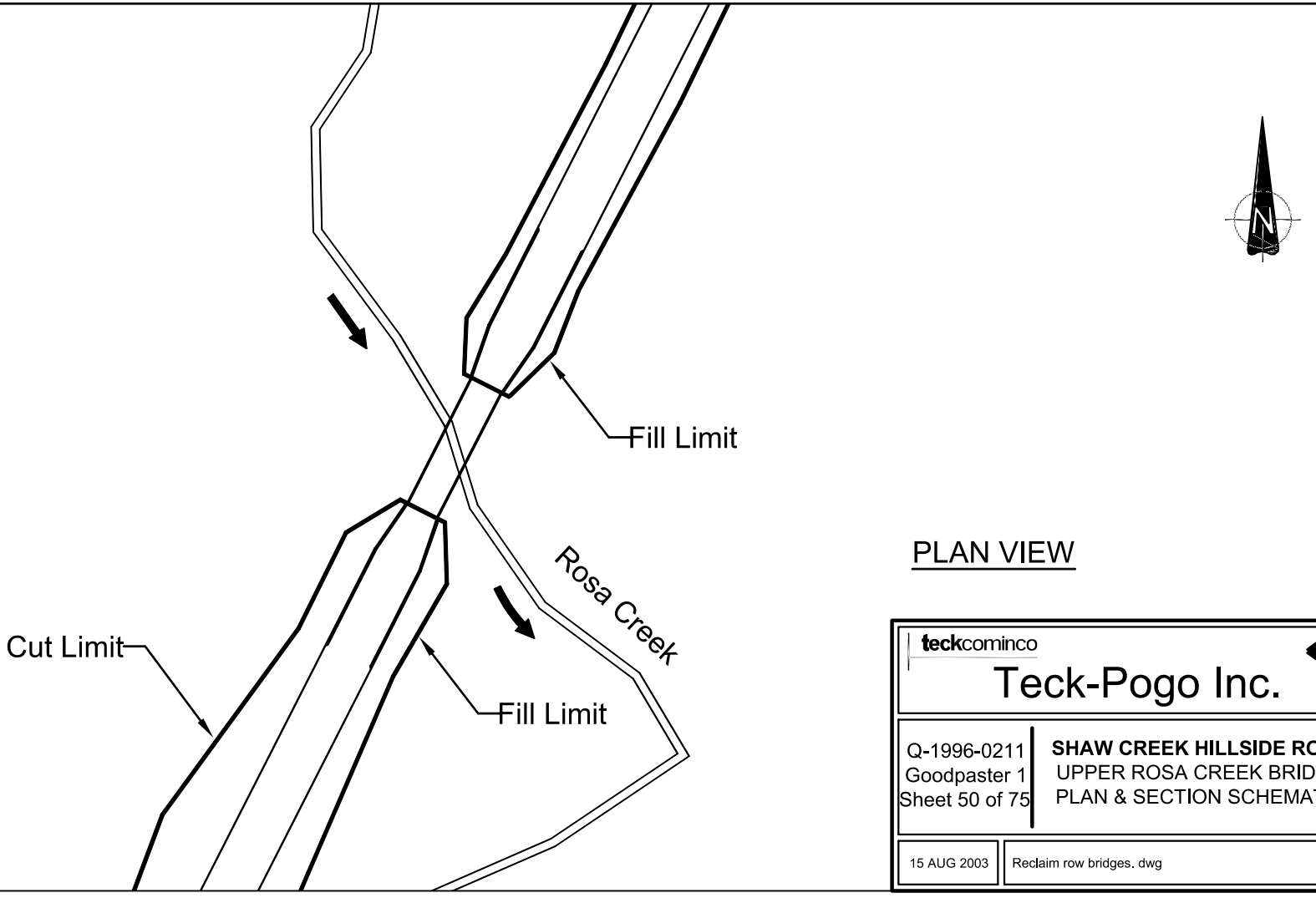
SHAW CREEK HILLSIDE ROAD
KEYSTONE CREEK BRIDGE
PLAN & SECTION SCHEMATIC

15 AUG 2003 | Reclaim row bridges. dwg



SOUTH ELEVATION
SCALE: 1 in = 20 ft



PLAN VIEW

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Goodpaster 1
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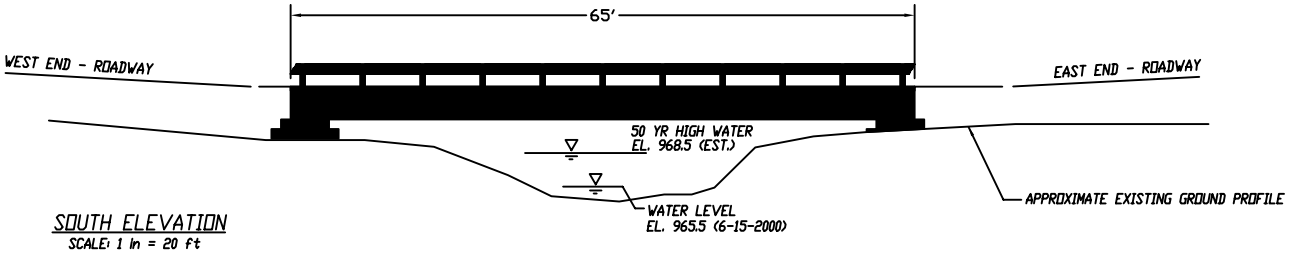
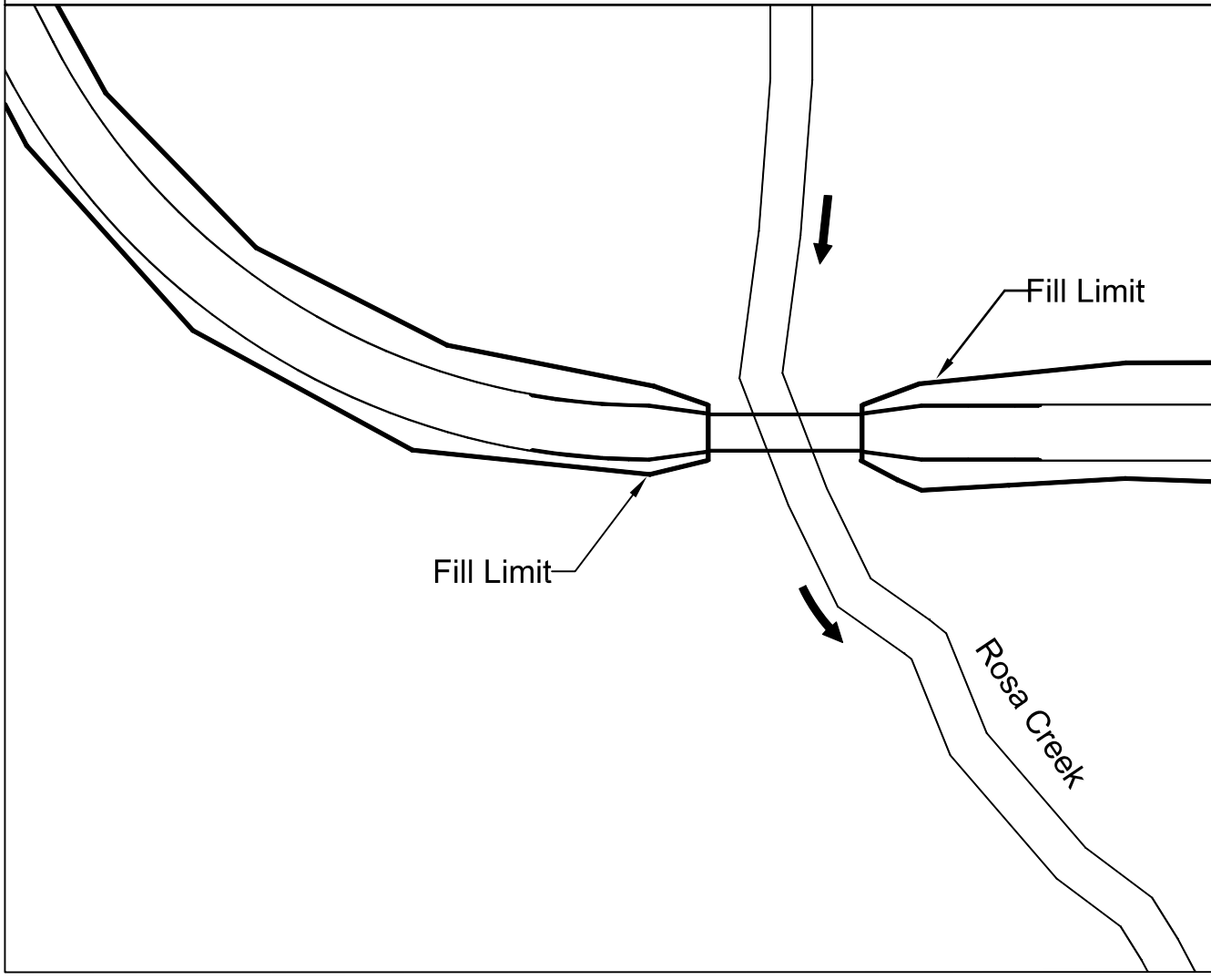
SHAW CREEK HILLSIDE ROAD
UPPER ROSA CREEK BRIDGE
PLAN & SECTION SCHEMATIC

15 AUG 2003

Reclaim row bridges. dwg



SOUTH ELEVATION
SCALE: 1 in = 20 ft



PLAN VIEW

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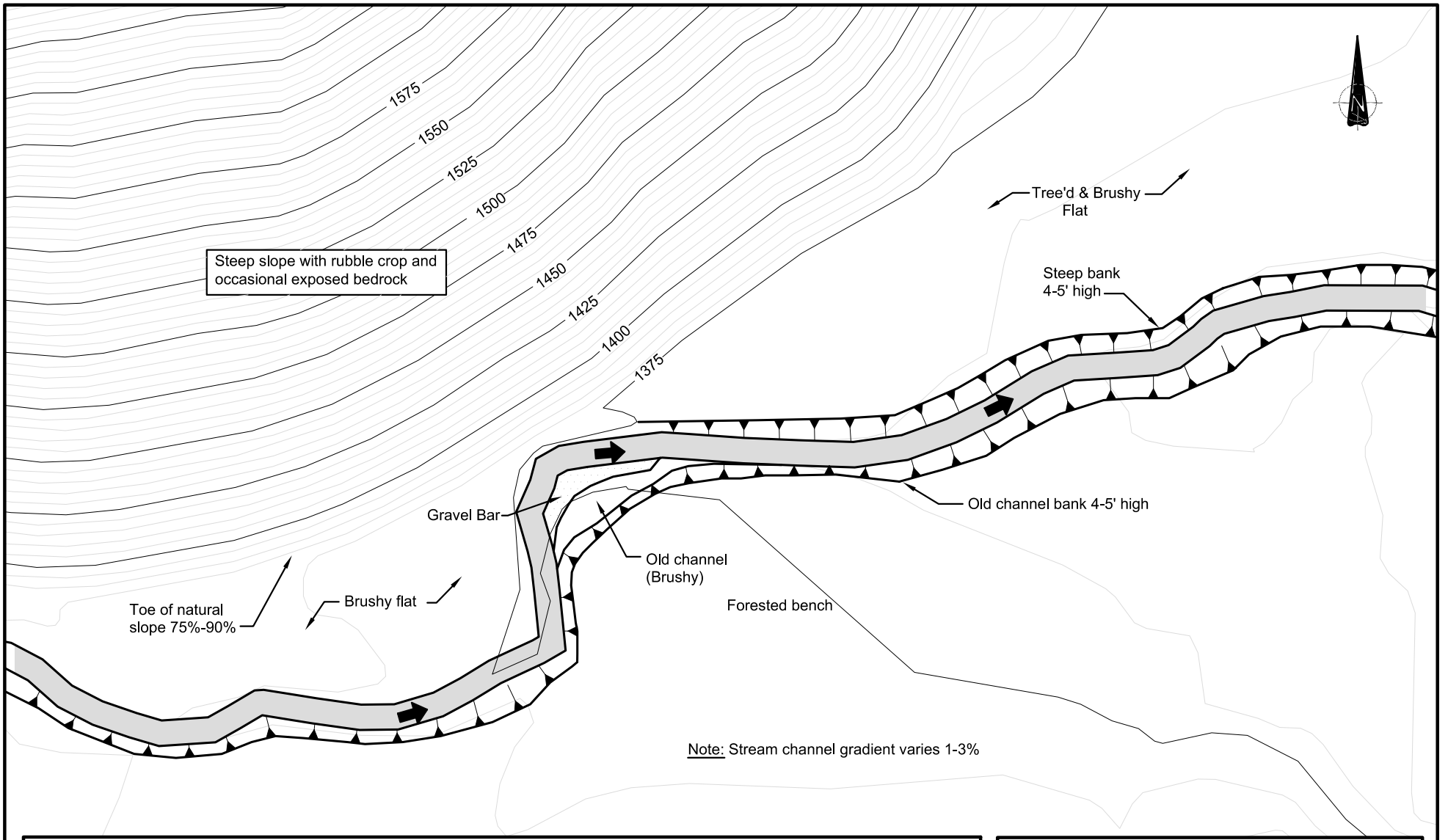
Goodpaster 1
Sheet 51 of 75

SHAW CREEK HILLSIDE ROAD
LOWER ROSA CREEK BRIDGE
PLAN & SECTION SCHEMATIC

15 AUG 2003 | Reclaim row bridges. dwg



Construction Notes

Reclamation Notes

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Q-1996-0211
Goodpaster 1
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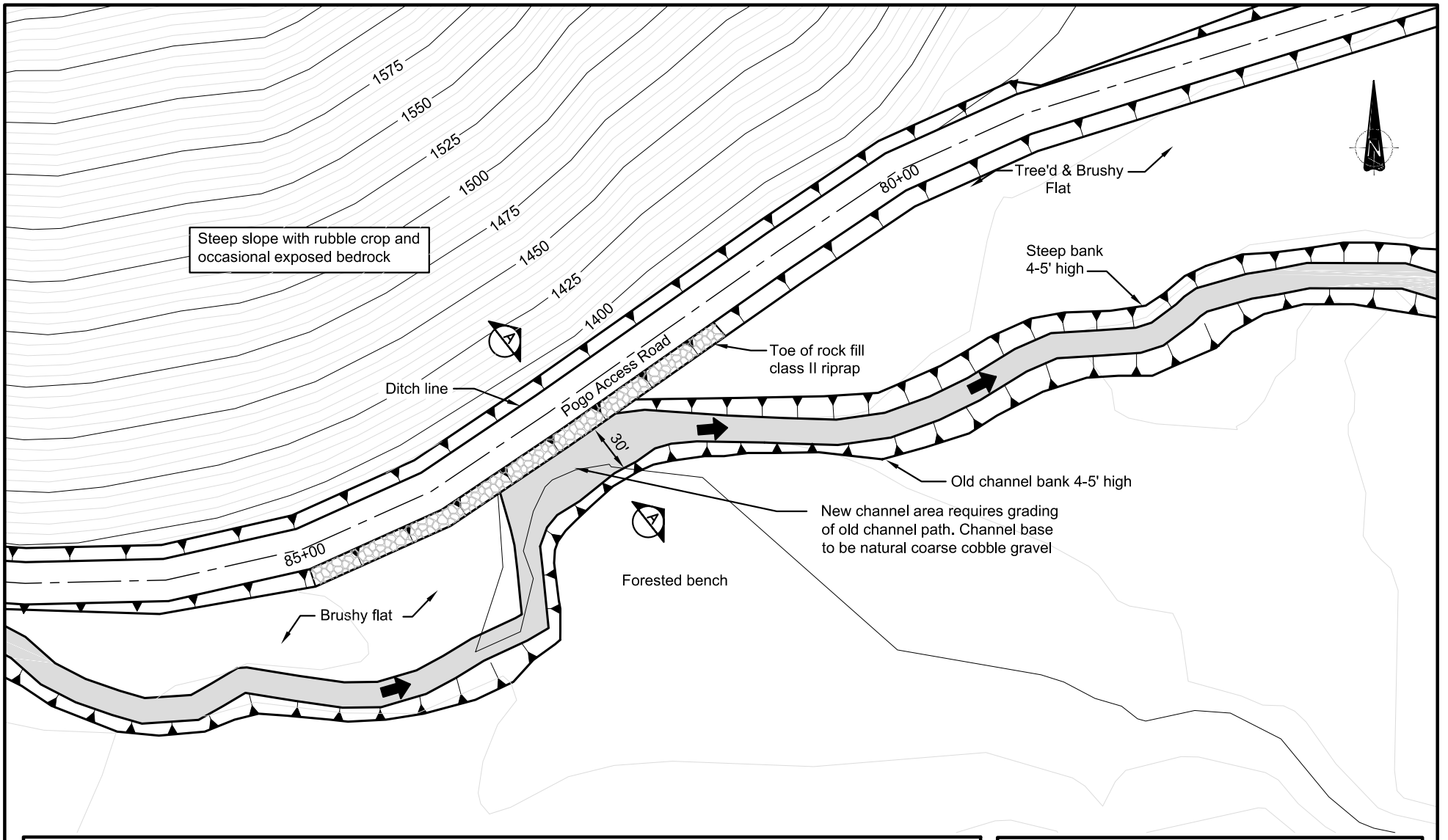
SHAW CREEK HILLSIDE ROAD
WOLVERINE CREEK DIVERSION
PLAN - EXISTING
(STA. 82+00 - 85+00)

15 Aug 2003

Wolverine Crk Realignment.dwg



Construction Notes

Reclamation Notes

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Goodpaster 1
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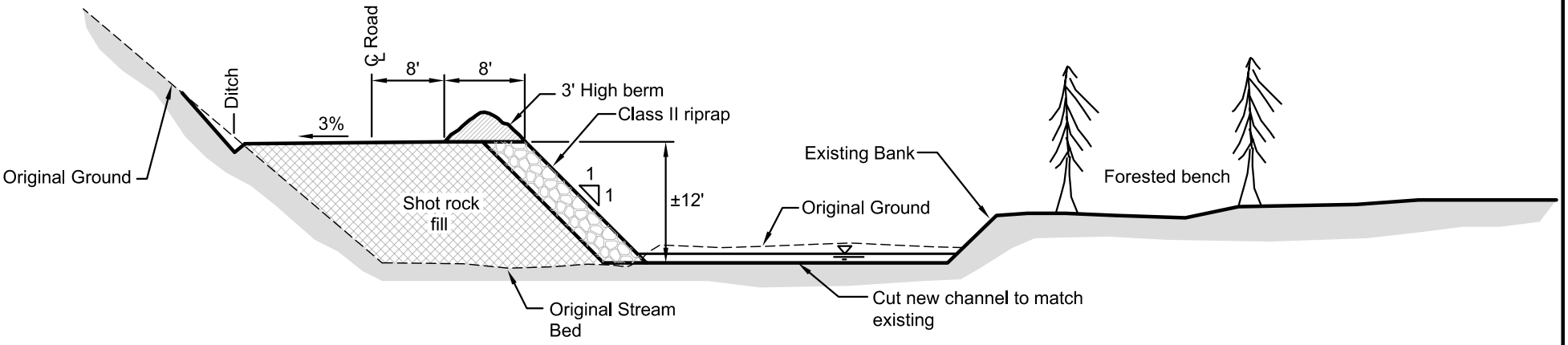
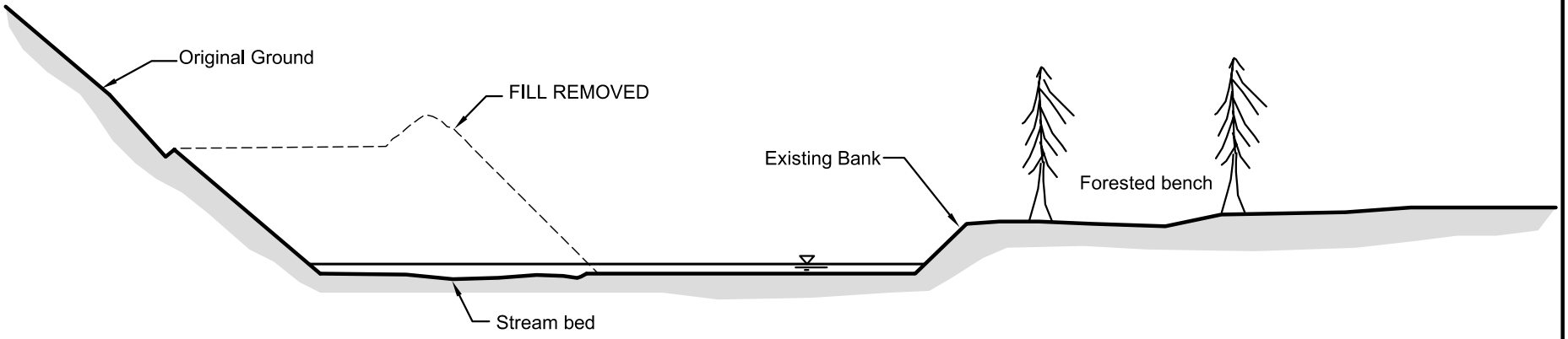
SHAW CREEK HILLSIDE ROAD
WOLVERINE CREEK DIVERSION
PLAN - PROPOSED
(STA. 82+00 - 85+00)

15 Aug 2003

Wolverine Crk Realignment.dwg



SECTION A-A - PROPOSED



SECTION A-A - RESTORED

Construction Notes

Reclamation Notes

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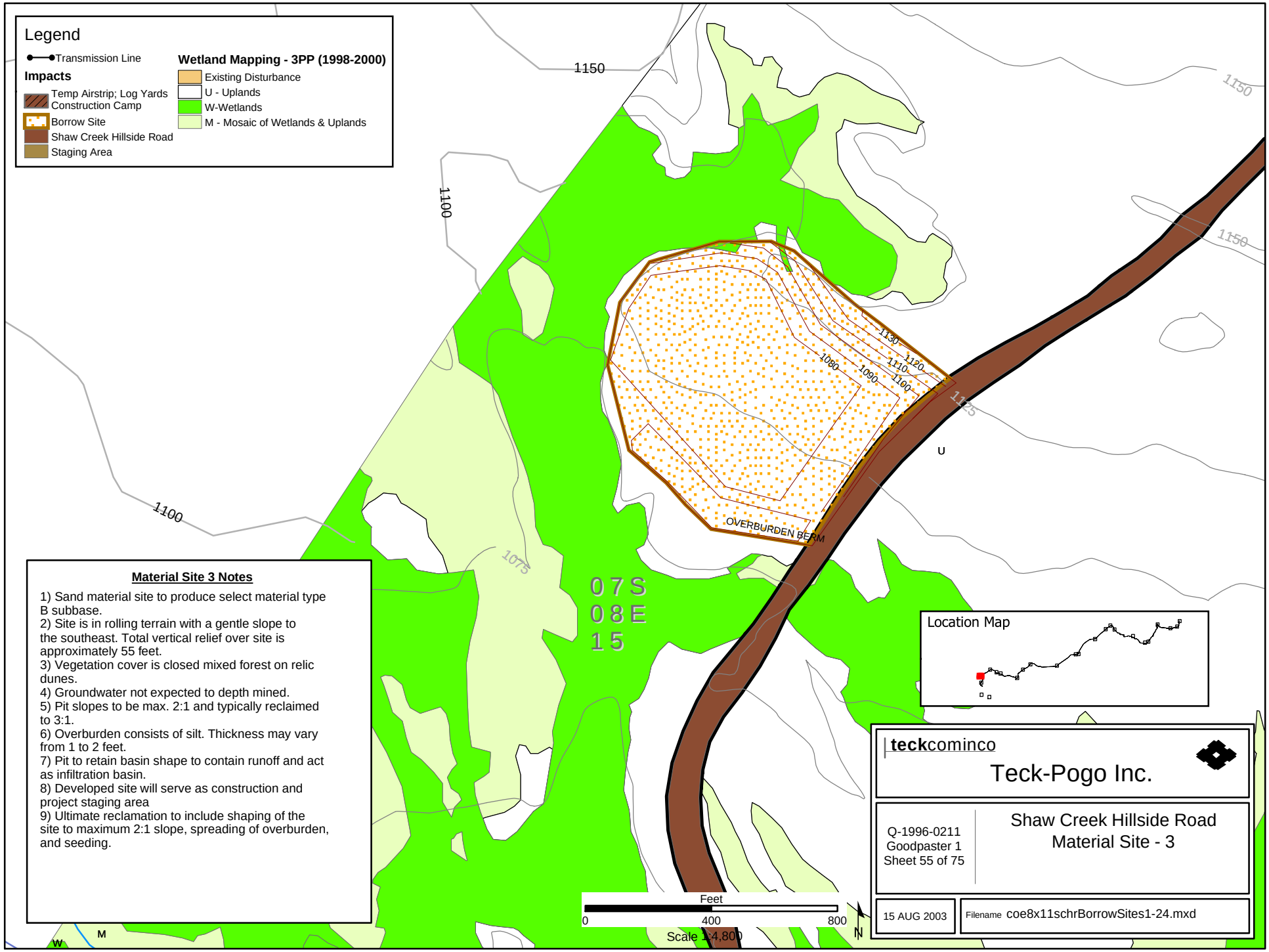
SHAW CREEK HILLSIDE ROAD
WOLVERINE CREEK DIVERSION
SECTION - PROPOSED
(STA. 82+00 - 85+00)

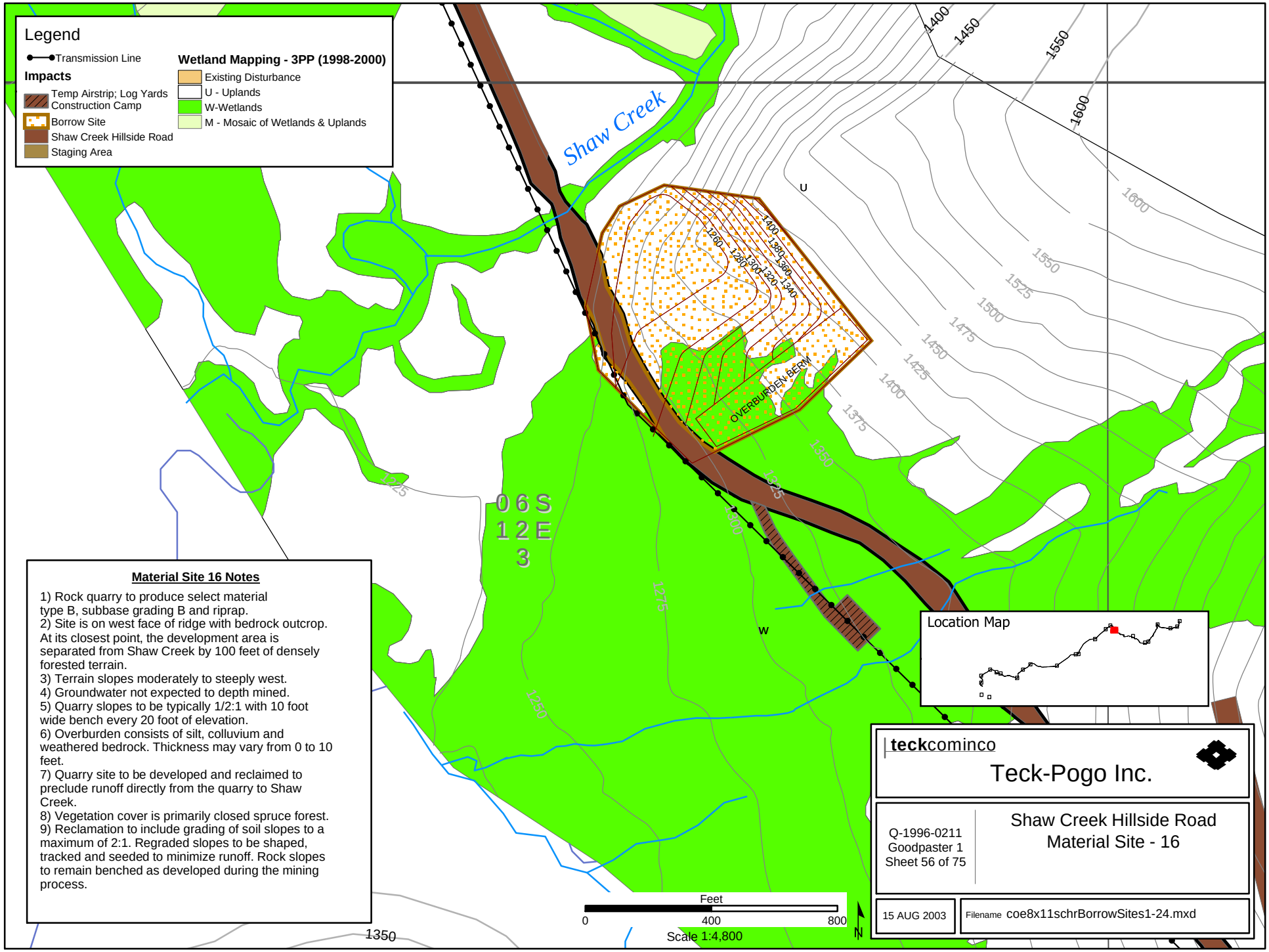
15 Aug 2003

Wolverine Crk Realignment.dwg



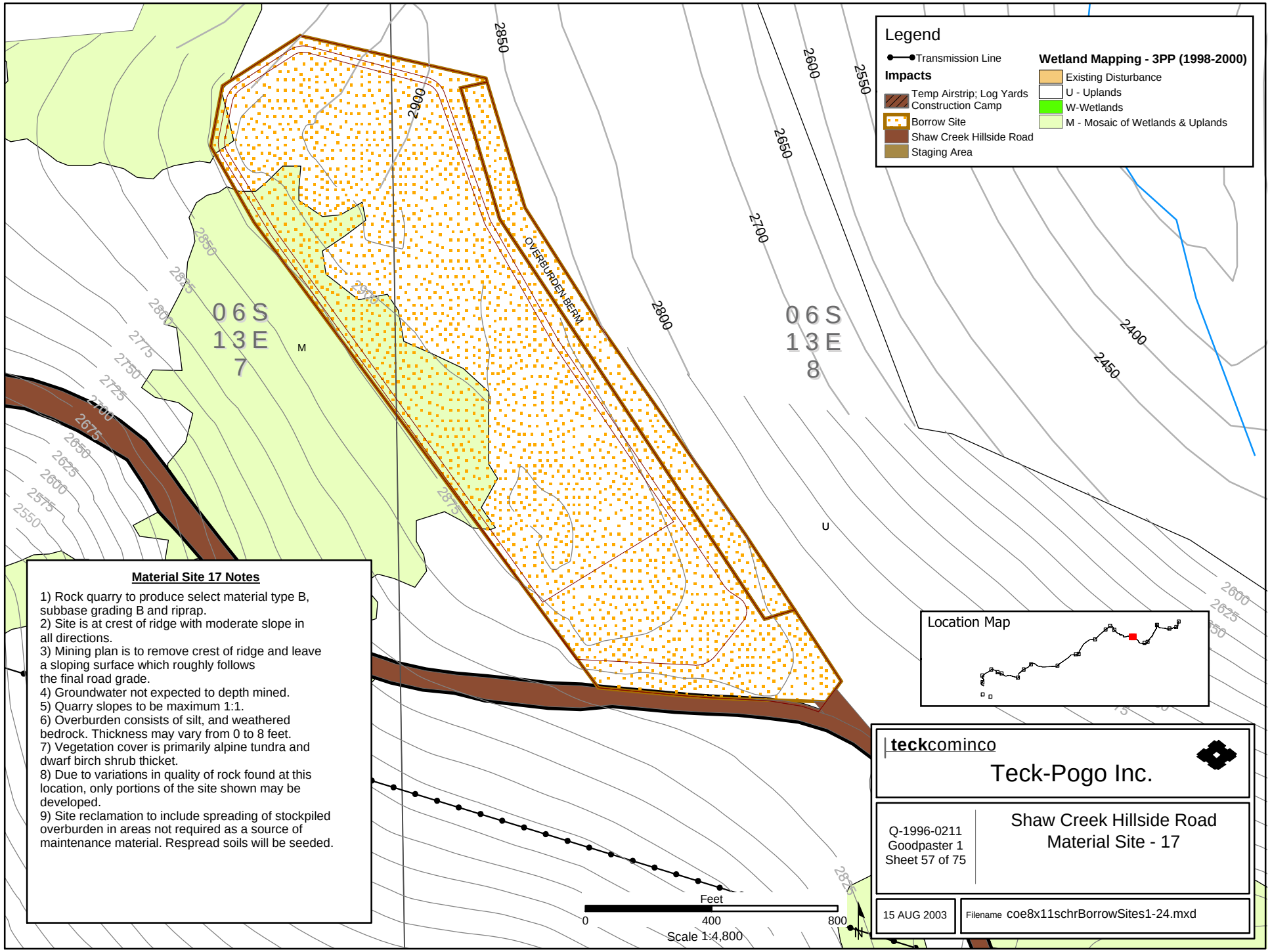
Material Site 3 Notes

1) Sand material site to produce select material type B subbase.
2) Site is in rolling terrain with a gentle slope to the southeast. Total vertical relief over site is approximately 55 feet.
3) Vegetation cover is closed mixed forest on relic dunes.
4) Groundwater not expected to depth mined.
5) Pit slopes to be max. 2:1 and typically reclaimed to 3:1.
6) Overburden consists of silt. Thickness may vary from 1 to 2 feet.
7) Pit to retain basin shape to contain runoff and act as infiltration basin.
8) Developed site will serve as construction and project staging area
9) Ultimate reclamation to include shaping of the site to maximum 2:1 slope, spreading of overburden, and seeding.



Material Site 16 Notes

1) Rock quarry to produce select material type B, subbase grading B and riprap.
2) Site is on west face of ridge with bedrock outcrop. At its closest point, the development area is separated from Shaw Creek by 100 feet of densely forested terrain.
3) Terrain slopes moderately to steeply west.
4) Groundwater not expected to depth mined.
5) Quarry slopes to be typically 1/2:1 with 10 foot wide bench every 20 foot of elevation.
6) Overburden consists of silt, colluvium and weathered bedrock. Thickness may vary from 0 to 10 feet.
7) Quarry site to be developed and reclaimed to preclude runoff directly from the quarry to Shaw Creek.
8) Vegetation cover is primarily closed spruce forest.
9) Reclamation to include grading of soil slopes to a maximum of 2:1. Regraded slopes to be shaped, tracked and seeded to minimize runoff. Rock slopes to remain benched as developed during the mining process.


Legend
Transmission Line
Impacts
Temp Airstrip; Log Yards Construction Camp
Borrow Site
Shaw Creek Hillside Road
Staging Area
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
06S 13E 7
06S 13E 8
M
U
OVERBURDEN BERM
2900
2850
2800
2750
2700
2650
2600
2550
2500
2450
2400
Location Map
Material Site 17 Notes
1) Rock quarry to produce select material type B, subbase grading B and riprap.
2) Site is at crest of ridge with moderate slope in all directions.
3) Mining plan is to remove crest of ridge and leave a sloping surface which roughly follows the final road grade.
4) Groundwater not expected to depth mined.
5) Quarry slopes to be maximum 1:1.
6) Overburden consists of silt, and weathered bedrock. Thickness may vary from 0 to 8 feet.
7) Vegetation cover is primarily alpine tundra and dwarf birch shrub thicket.
8) Due to variations in quality of rock found at this location, only portions of the site shown may be developed.
9) Site reclamation to include spreading of stockpiled overburden in areas not required as a source of maintenance material. Respread soils will be seeded.
Feet
0
400
800
Scale 1:4,800
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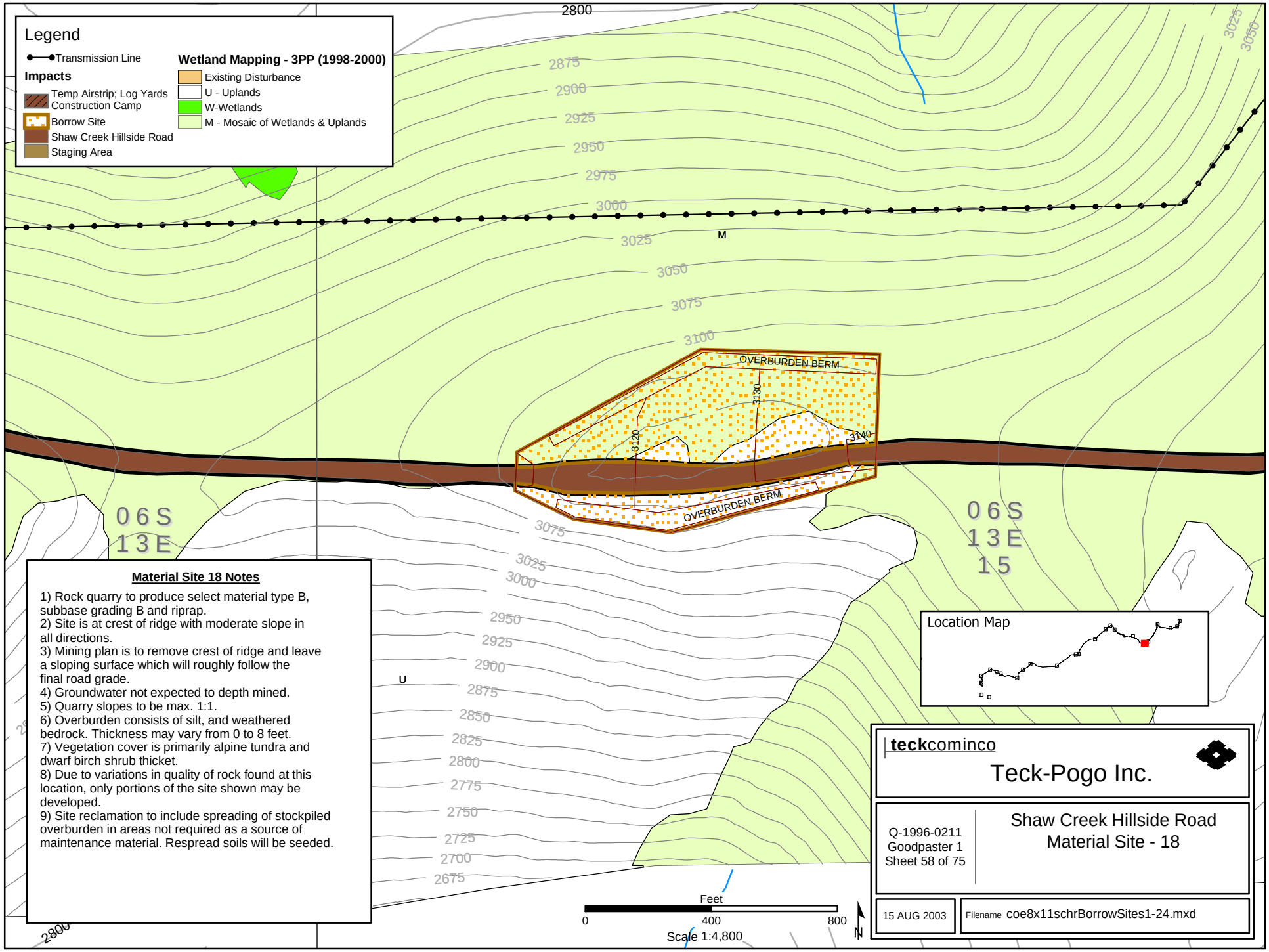
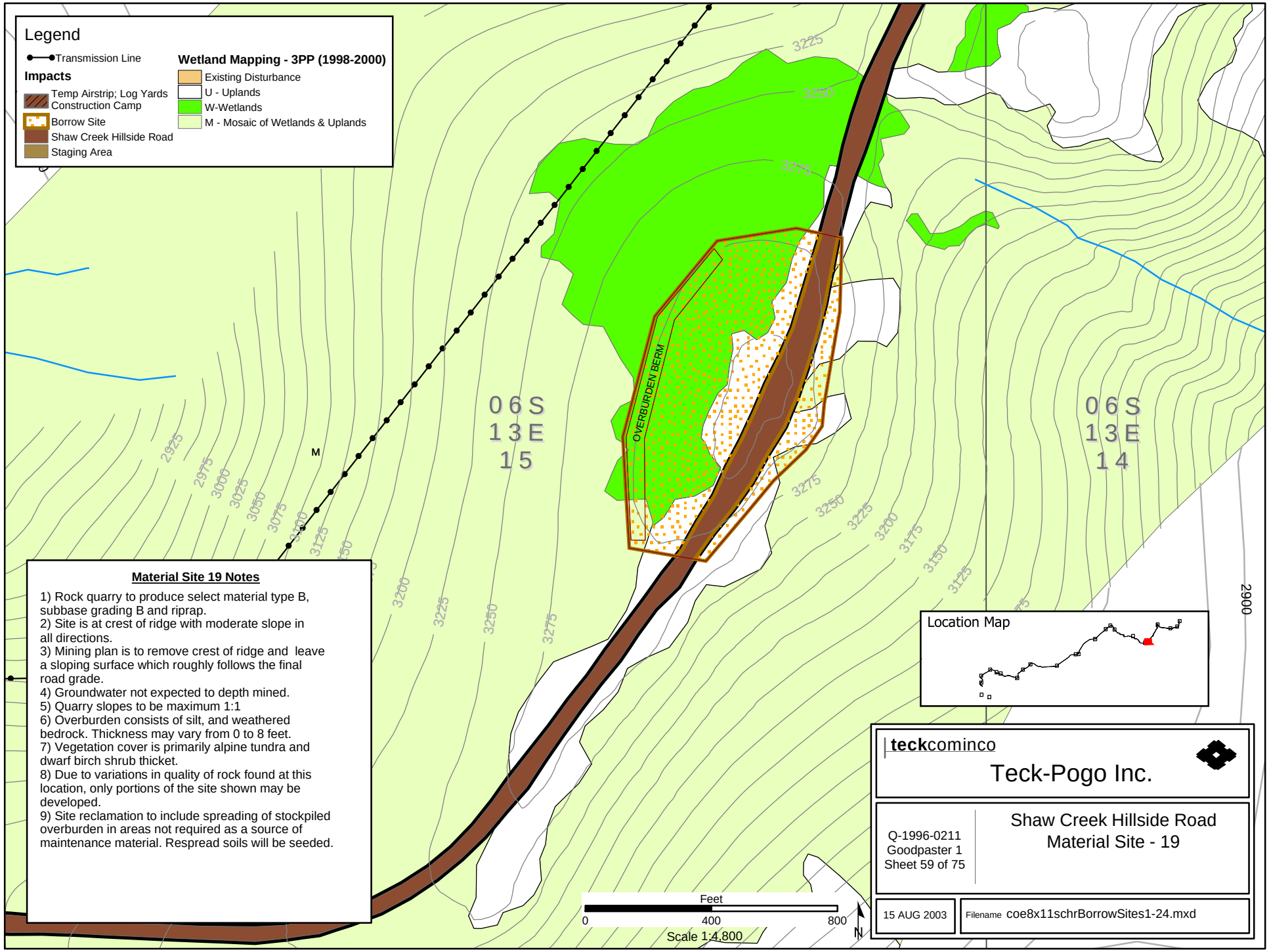
Q-1996-0211
Goodpaster 1
Sheet 57 of 75
Shaw Creek Hillside Road
Material Site - 17
15 AUG 2003
Filename coe8x11schrBorrowSites1-24.mxd



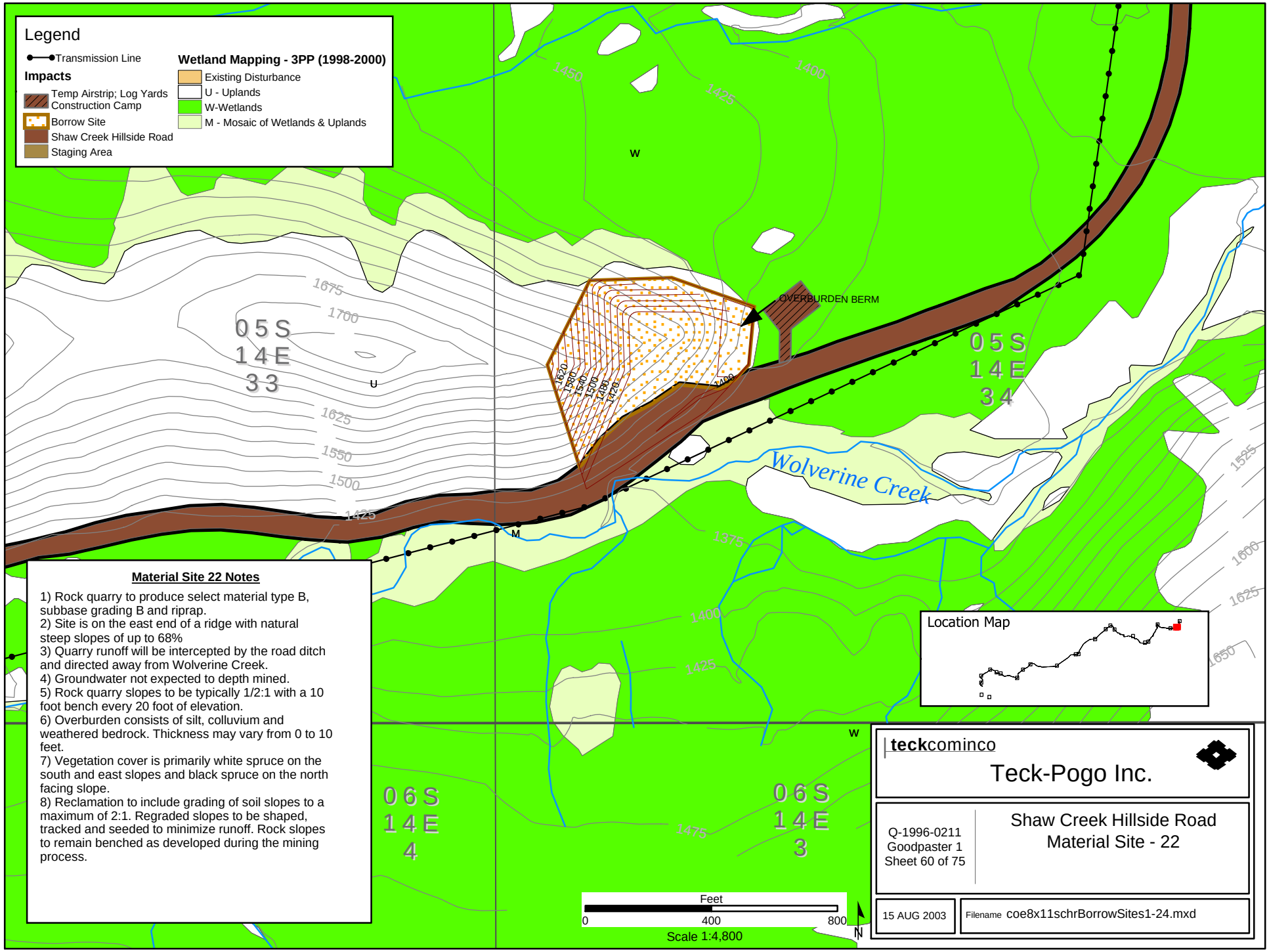
Material Site 18 Notes

1) Rock quarry to produce select material type B, subbase grading B and riprap.
2) Site is at crest of ridge with moderate slope in all directions.
3) Mining plan is to remove crest of ridge and leave a sloping surface which will roughly follow the final road grade.
4) Groundwater not expected to depth mined.
5) Quarry slopes to be max. 1:1.
6) Overburden consists of silt, and weathered bedrock. Thickness may vary from 0 to 8 feet.
7) Vegetation cover is primarily alpine tundra and dwarf birch shrub thicket.
8) Due to variations in quality of rock found at this location, only portions of the site shown may be developed.
9) Site reclamation to include spreading of stockpiled overburden in areas not required as a source of maintenance material. Respread soils will be seeded.



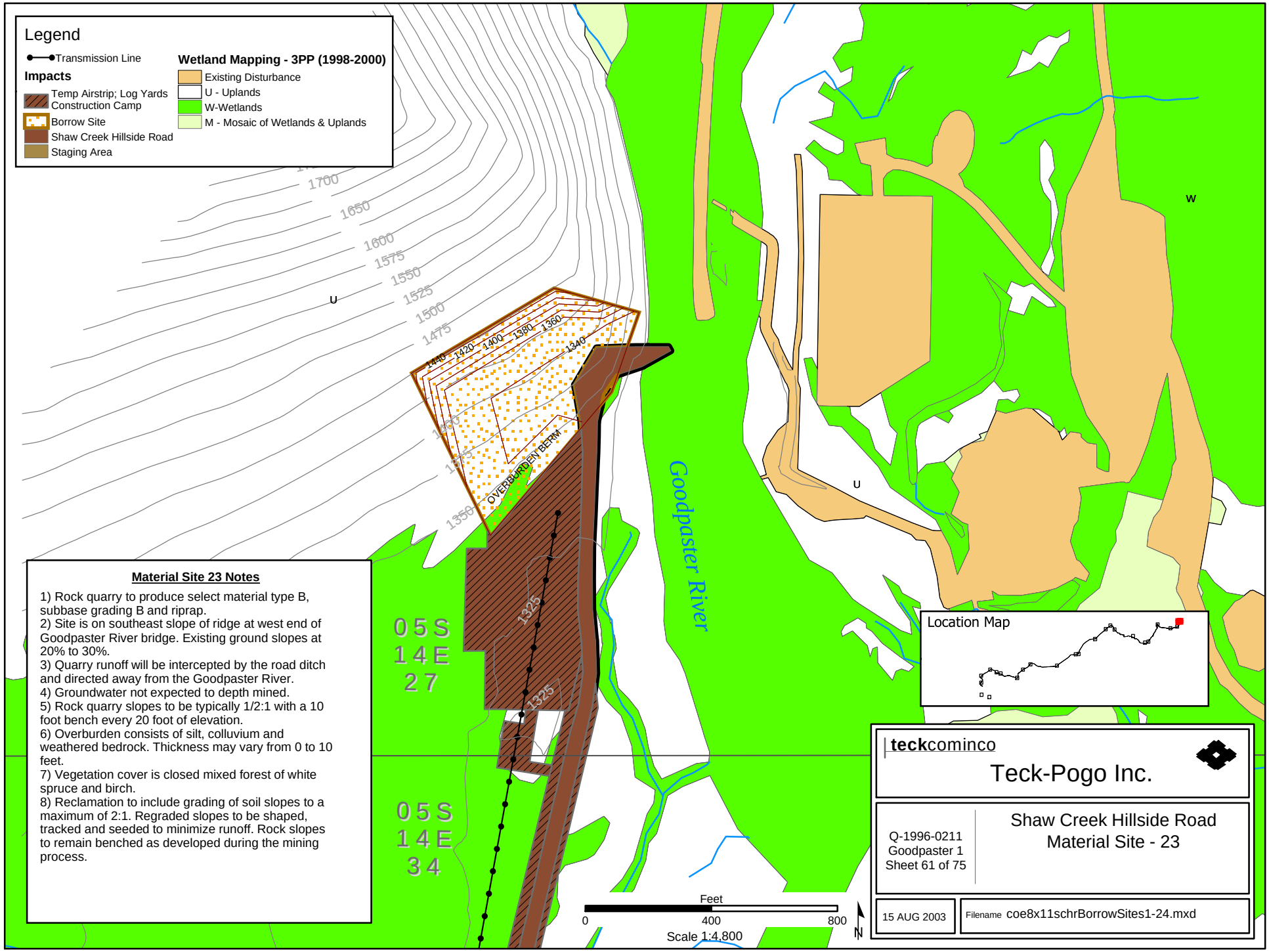
Material Site 19 Notes

1) Rock quarry to produce select material type B, subbase grading B and riprap.
2) Site is at crest of ridge with moderate slope in all directions.
3) Mining plan is to remove crest of ridge and leave a sloping surface which roughly follows the final road grade.
4) Groundwater not expected to depth mined.
5) Quarry slopes to be maximum 1:1
6) Overburden consists of silt, and weathered bedrock. Thickness may vary from 0 to 8 feet.
7) Vegetation cover is primarily alpine tundra and dwarf birch shrub thicket.
8) Due to variations in quality of rock found at this location, only portions of the site shown may be developed.
9) Site reclamation to include spreading of stockpiled overburden in areas not required as a source of maintenance material. Respread soils will be seeded.



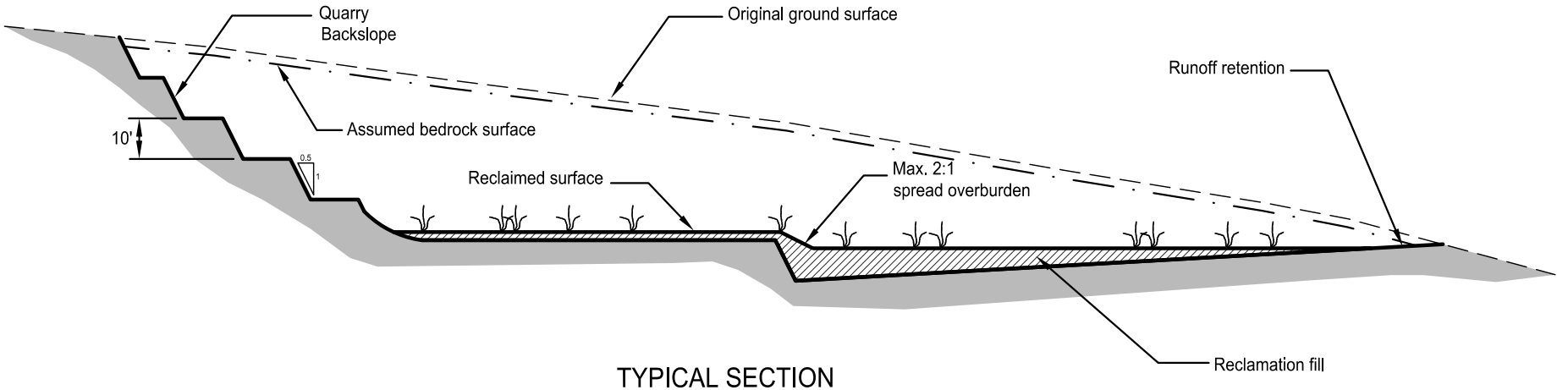
Material Site 22 Notes

1) Rock quarry to produce select material type B, subbase grading B and riprap.
2) Site is on the east end of a ridge with natural steep slopes of up to 68%
3) Quarry runoff will be intercepted by the road ditch and directed away from Wolverine Creek.
4) Groundwater not expected to depth mined.
5) Rock quarry slopes to be typically 1/2:1 with a 10 foot bench every 20 foot of elevation.
6) Overburden consists of silt, colluvium and weathered bedrock. Thickness may vary from 0 to 10 feet.
7) Vegetation cover is primarily white spruce on the south and east slopes and black spruce on the north facing slope.
8) Reclamation to include grading of soil slopes to a maximum of 2:1. Regraded slopes to be shaped, tracked and seeded to minimize runoff. Rock slopes to remain benched as developed during the mining process.



Material Site 23 Notes

1) Rock quarry to produce select material type B, subbase grading B and riprap.
2) Site is on southeast slope of ridge at west end of Goodpaster River bridge. Existing ground slopes at 20% to 30%.
3) Quarry runoff will be intercepted by the road ditch and directed away from the Goodpaster River.
4) Groundwater not expected to depth mined.
5) Rock quarry slopes to be typically 1/2:1 with a 10 foot bench every 20 foot of elevation.
6) Overburden consists of silt, colluvium and weathered bedrock. Thickness may vary from 0 to 10 feet.
7) Vegetation cover is closed mixed forest of white spruce and birch.
8) Reclamation to include grading of soil slopes to a maximum of 2:1. Regraded slopes to be shaped, tracked and seeded to minimize runoff. Rock slopes to remain benched as developed during the mining process.



TYPICAL SECTION

Material Site Notes

1. See material site plan views.

Reclamation Notes

1. See material site plan views.

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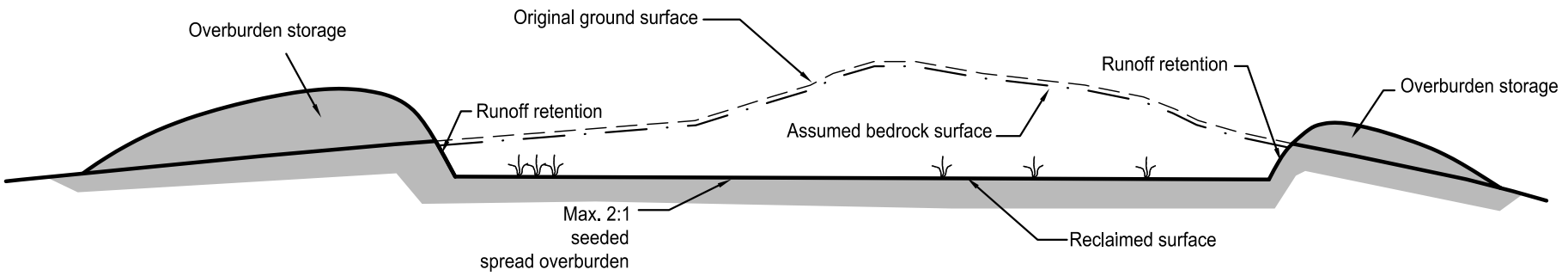
Goodpaster 1
Sheet 62 of 75

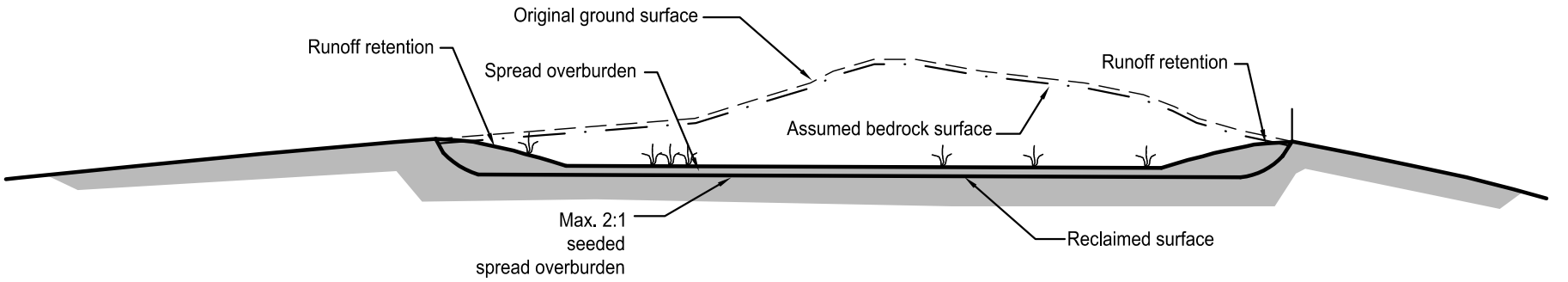
SHAW CREEK HILLSIDE ROAD
HILLSIDE ROCK QUARRY
TYPICAL SECTION

15 AUG 2003

Reclaim borrow pits. dwg



TYPICAL SECTION PROPOSED



TYPICAL SECTION RECLAIMED

Material Site Notes

1. See material site plan views.

Reclamation Notes

1. See material site plan views.

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Q-1996-0211
Goodpaster 1
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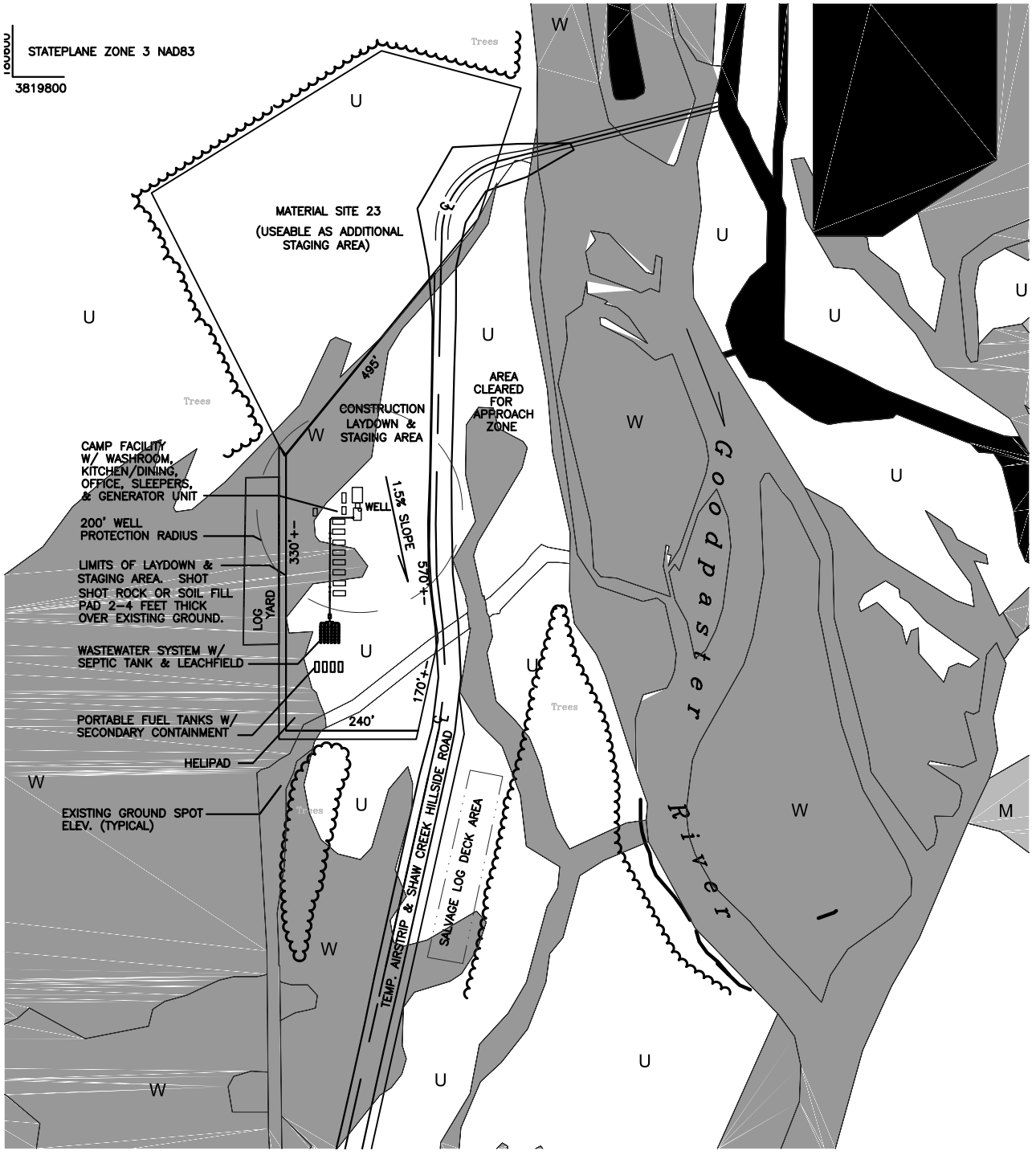
SHAW CREEK HILLSIDE ROAD
RIDGE TOP ROCK QUARRY
TYPICAL SECTION

15 AUG 2003

Reclaim borrow pits. dwg



Legend

- U - Uplands
- M - Mosaic of Wetlands & Uplands
- W - Wetlands
- Existing Disturbance

N

0 100 300
50 200
SCALE IN FEET

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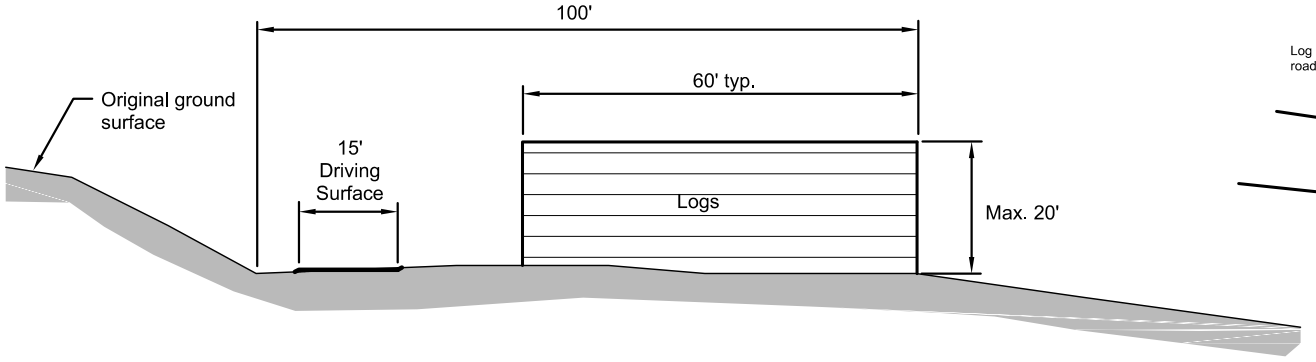
Q-1996-0211
Goodpaster 1
Sheet 64 of 75

SHAW CREEK HILLSIDE ROAD
GOODPASTER CAMP

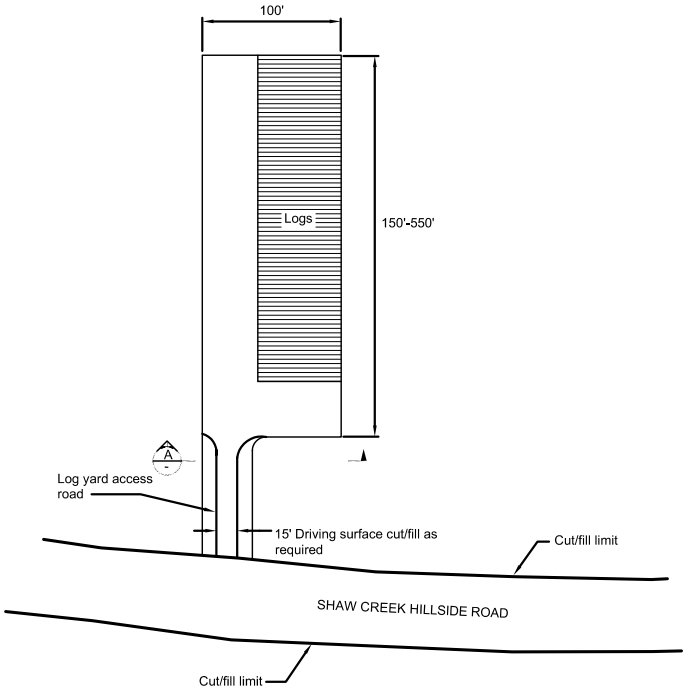
15 AUG 2003

reclaim Goodpaster Camp.dwg

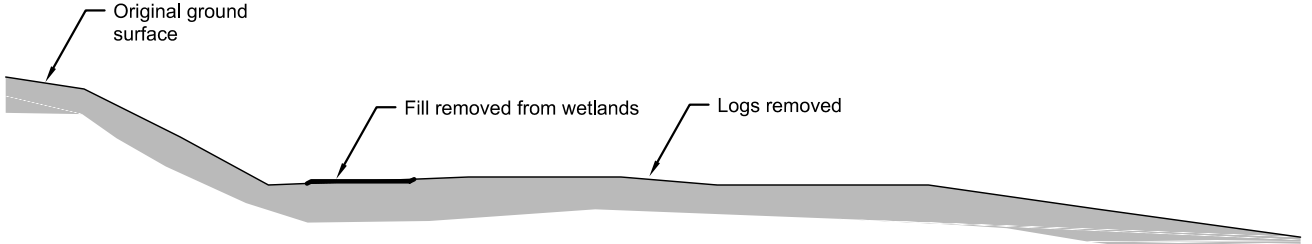
SECTION A



TYPICAL SECTION - PROPOSED



TYPICAL PLAN



TYPICAL SECTION - RESTORED

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Q-1996-0211
Goodpaster 1
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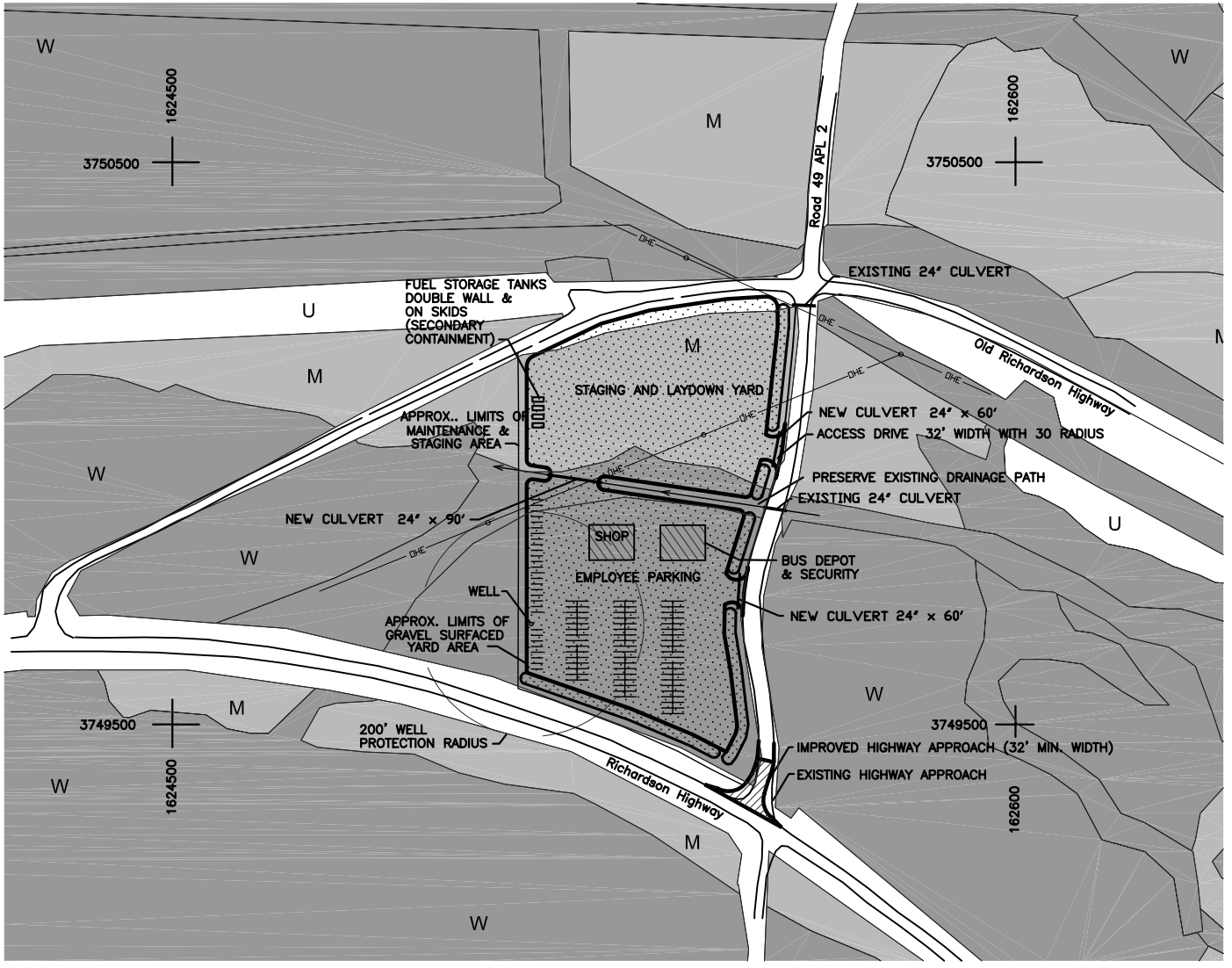
SHAW CREEK HILLSIDE ROAD
LOG YARD
TYPICAL PLAN & SECTION

15 Aug 2003

Reclaim log yards.dwg



Legend

- U - Uplands
- M - Mosaic of Wetlands & Uplands
- W - Wetlands
- Staging Area

N
W E
S
(FEET)

0 200
100 300

Construction Notes

1. The Richardson Hwy intersection shall be improved to meet ADOT standards for public road intersection as shown in ADOT standard detail I-40.0.

2. Foundation pads will be excavated so all silty soils shall be removed to expose the native gravel strata. Backfill to foundation elevation with NFS sandy gravel.

3. Domestic wastewater will be collected in an appropriately sized holding tank and disposed at an ADEC approved septage disposal facility.

Reclamation Notes

1. The facilities will be removed.

2. Fill will be removed from wetlands. Uplands will be recontoured for drainage, scarified, and spread with growth media.

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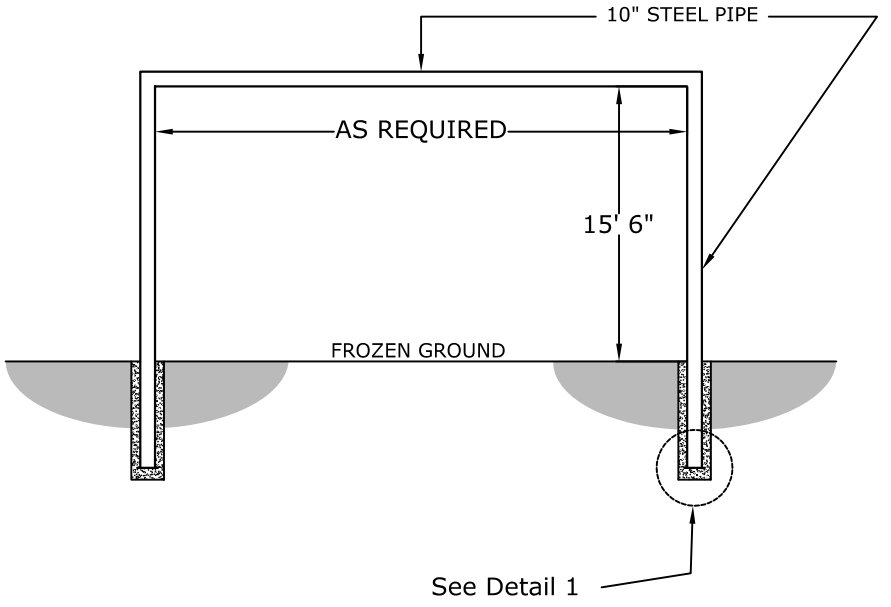
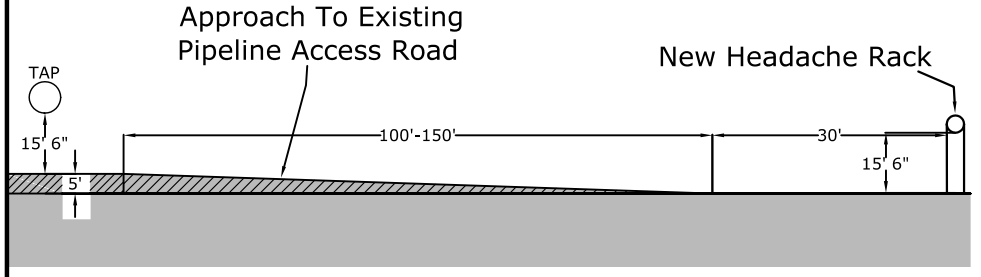
Q-1996-0211
Goodpaster 1
Sheet 66 of 75

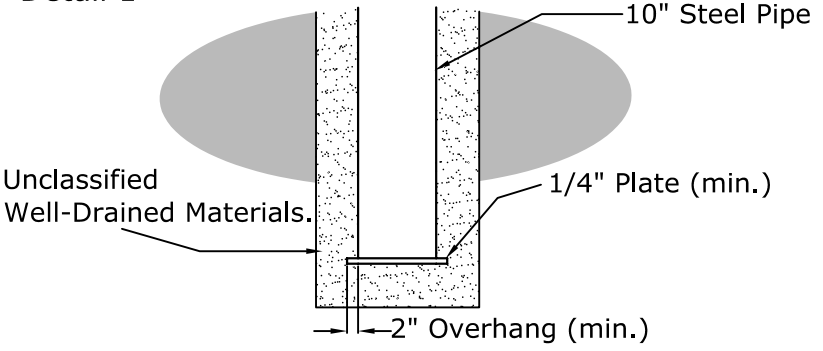
RICHARDSON HIGHWAY
STAGING AREA

15 AUG 2003 | reclaim Staging Area.dwg





Detail 1



Construction Notes

Reclamation Notes

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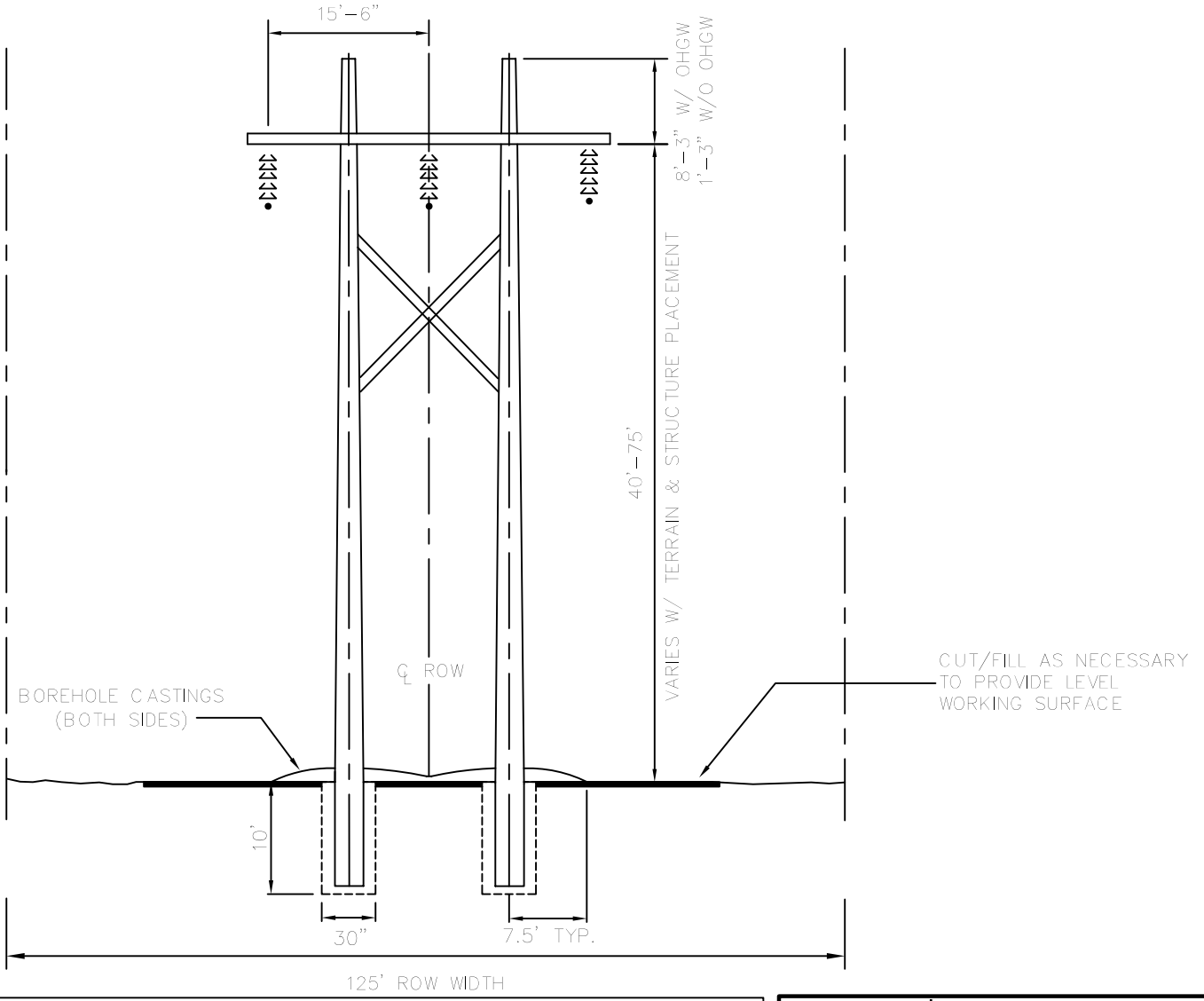
Q-1996-0211 GoodPaster 1 Sheet 67 of 75	**SHAW CREEK WINTER ROAD** TAPS Crossing Headache Rack Plan & Sections
15 AUG 2003	TAPS Headache Bar. dwg



Construction Notes

Reclamation Notes

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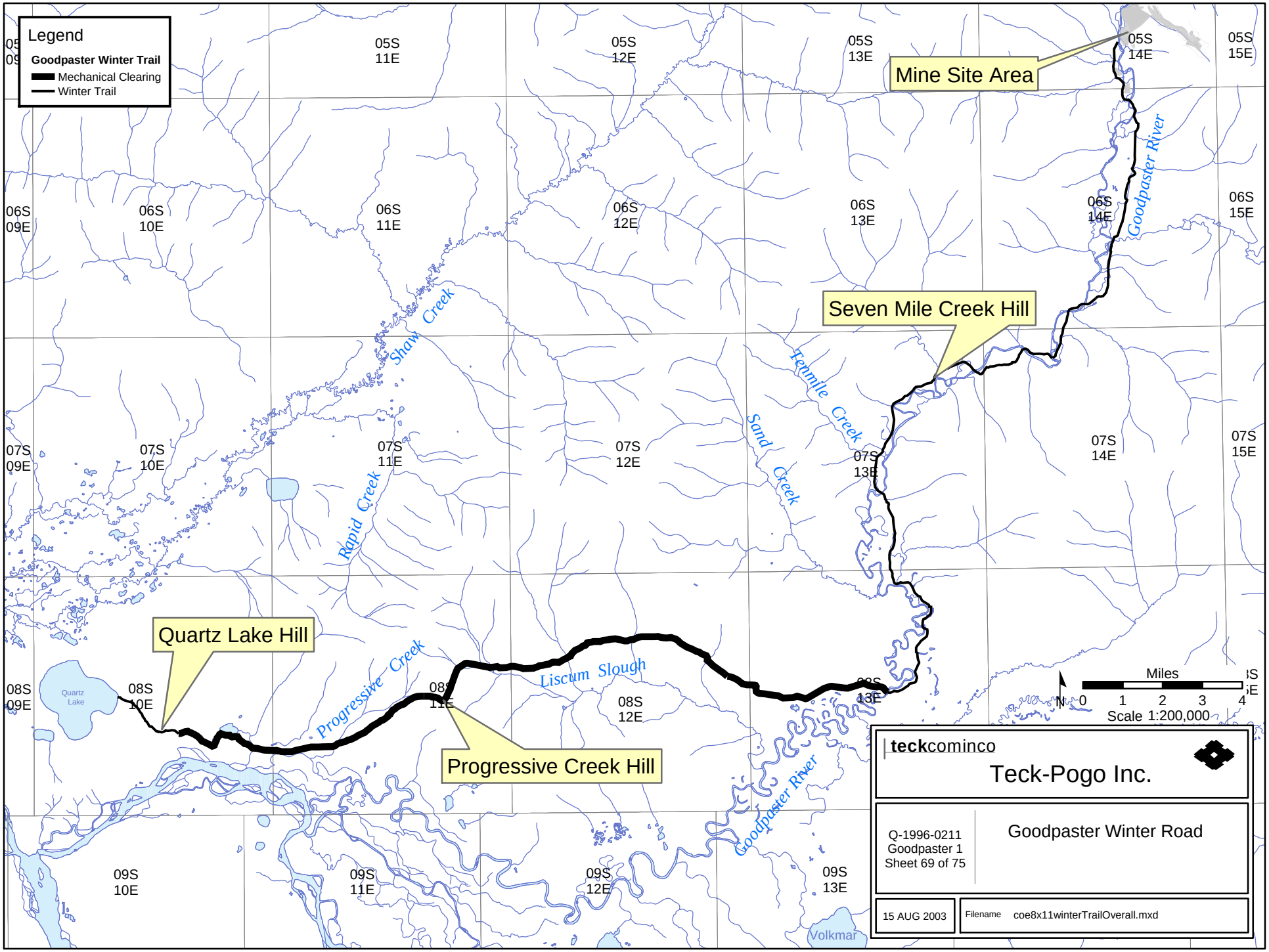
Sheet 68 of 75

Shaw Creek Hillside Road
Transmission Line
Pole Structure
Typical Design

15 AUG 2003

Trans Line Pole Structure.dwg


Legend
Goodpaster Winter Trail
Mechanical Clearing
Winter Trail
Mine Site Area
Seven Mile Creek Hill
Quartz Lake Hill
Progressive Creek Hill
Goodpaster River
Shaw Creek
Rapid Creek
Sand Creek
Fennile Creek
Liscum Slough
Progressive Creek
Quartz Lake
Volkmar
05S 11E
05S 12E
05S 13E
05S 14E
05S 15E
06S 09E
06S 10E
06S 11E
06S 12E
06S 13E
06S 14E
06S 15E
07S 09E
07S 10E
07S 11E
07S 12E
07S 13E
07S 14E
07S 15E
08S 09E
08S 10E
08S 11E
08S 12E
08S 13E
09S 10E
09S 11E
09S 12E
09S 13E
Miles
0 1 2 3 4
Scale 1:200,000
N
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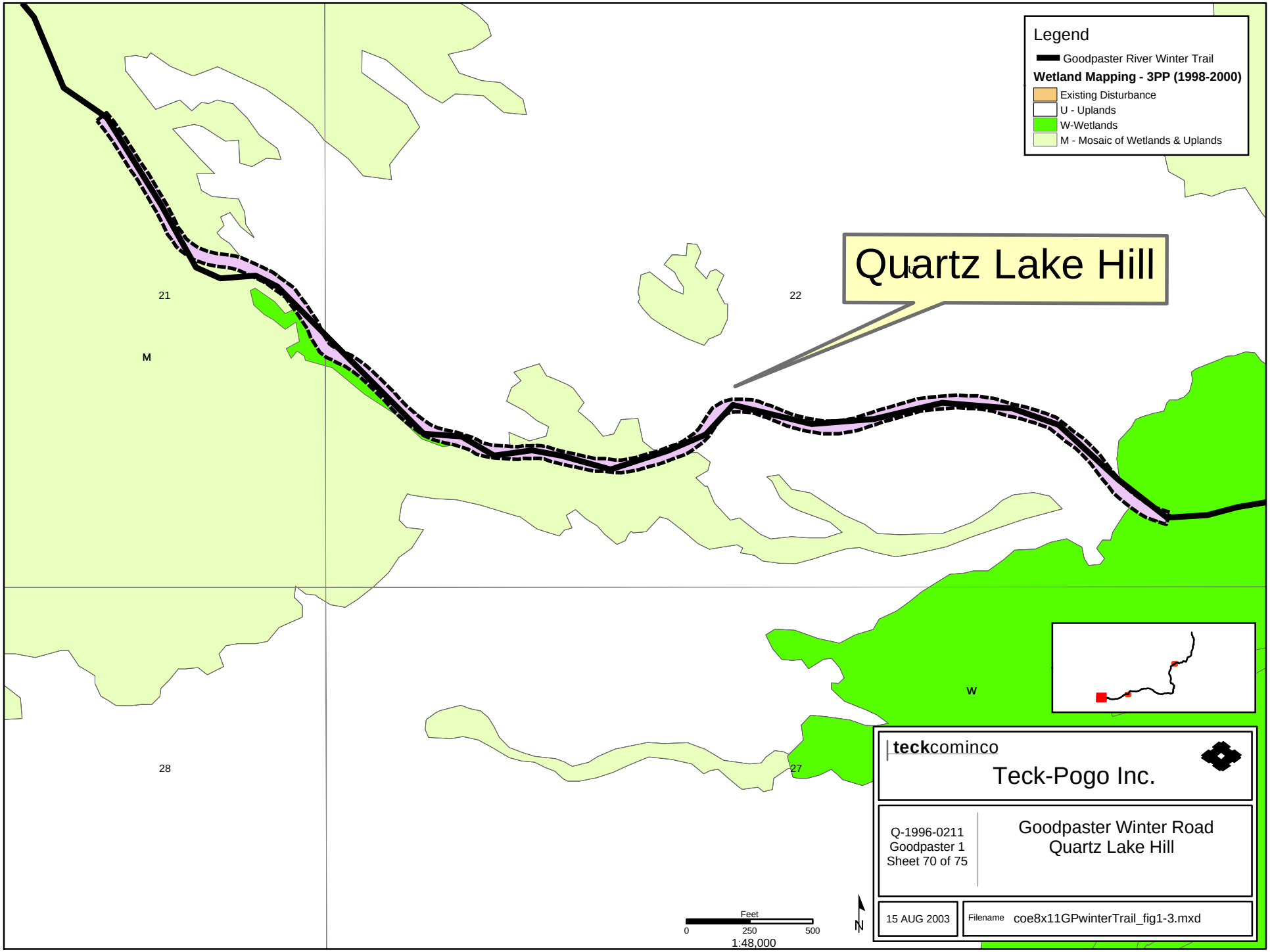
Teck-Pogo Inc.
Q-1996-0211
Goodpaster 1
Sheet 69 of 75
Goodpaster Winter Road
15 AUG 2003
Filename coe8x11winterTrailOverall.mxd


Legend
Goodpaster River Winter Trail
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
Quartz Lake Hill
21
22
M
U
W
28
27
Feet
0
250
500
1:48,000
N
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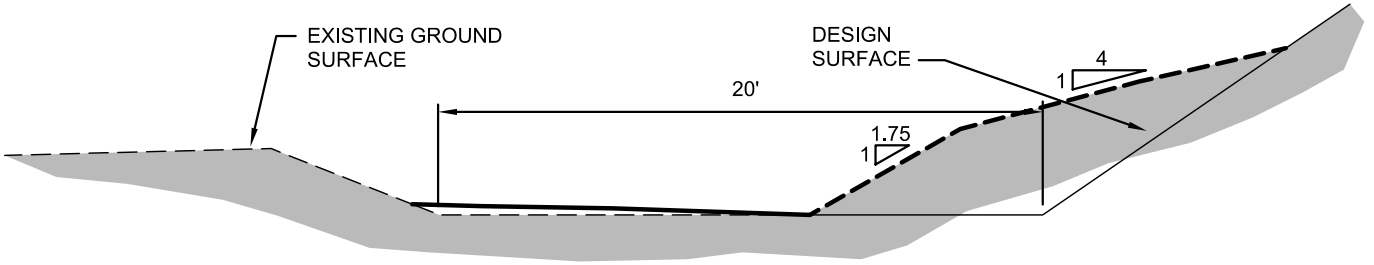
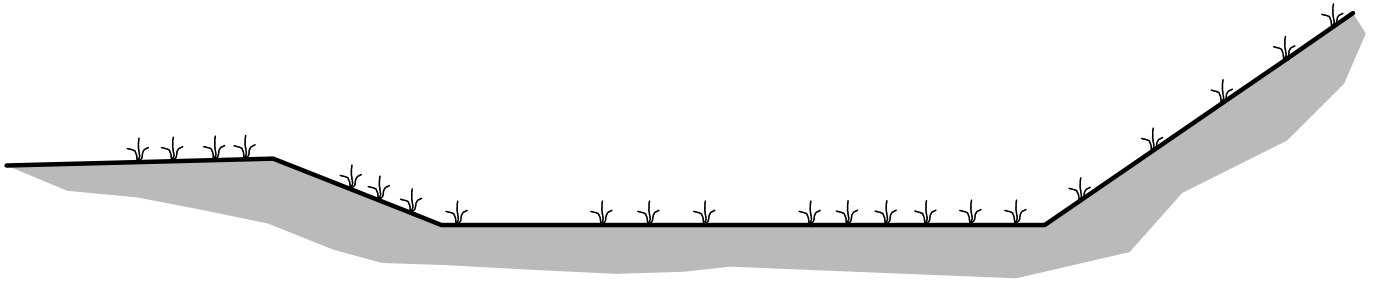
Teck-Pogo Inc.
Q-1996-0211
Goodpaster 1
Sheet 70 of 75
Goodpaster Winter Road
Quartz Lake Hill
15 AUG 2003
Filename
coe8x11GPwinterTrail_fig1-3.mxd



TYPICAL ROAD SECTION - QUARTZ LAKE HILL - PROPOSED



TYPICAL ROAD SECTION - QUARTZ LAKE HILL - RECLAIMED

Construction Notes

1. Widen and repair road as needed to provide a level driving surface, straighten curves, and provide passing room for snowmobiles.

Reclamation Notes

1. To remain as trail.

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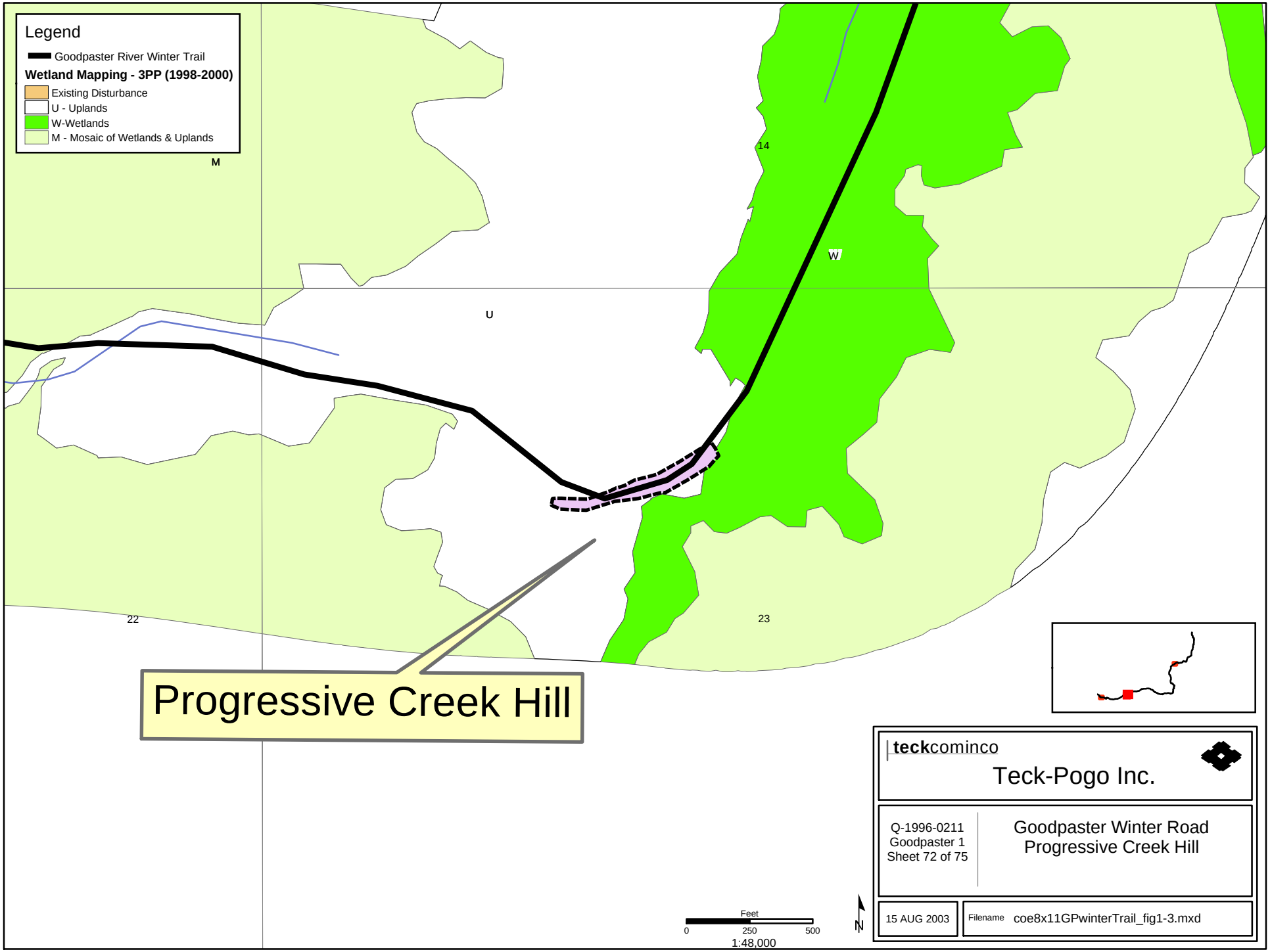
GOODPASTER WINTER ROAD
QUARTZ LAKE HILL
TYPICAL SECTION

15 AUG 2003

Reclaim GP Winter Road.dwg


Legend
Goodpaster River Winter Trail
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
M
14
W
U
22
23
Progressive Creek Hill
Feet
0
250
500
1:48,000
N
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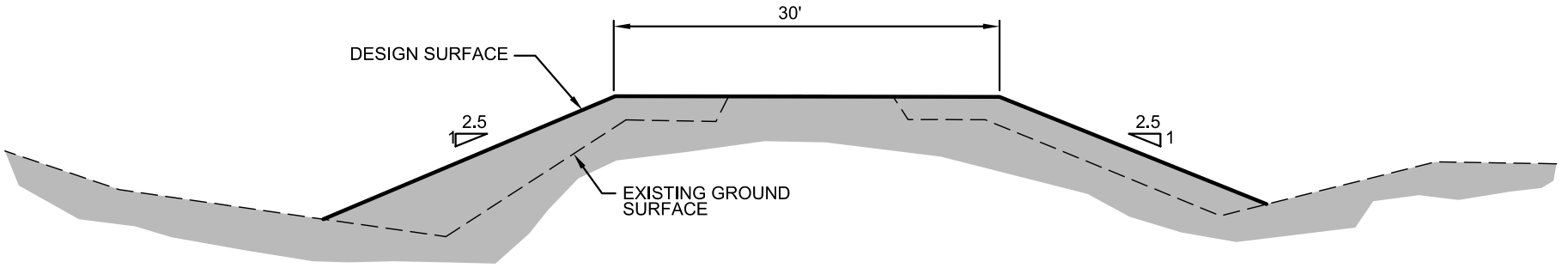
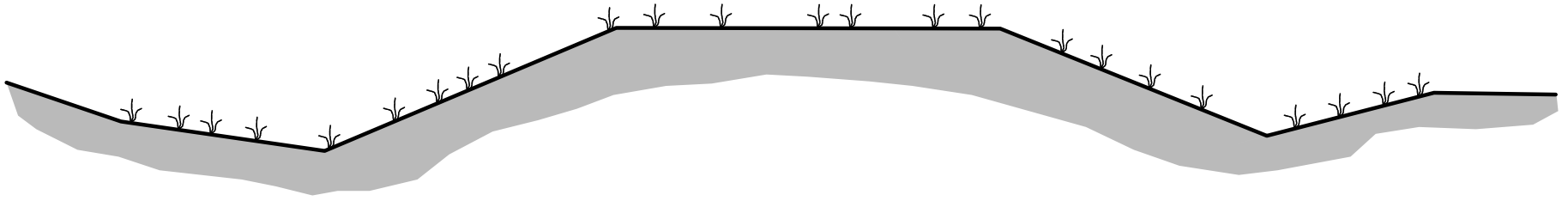
Teck-Pogo Inc.
Q-1996-0211
Goodpaster 1
Sheet 72 of 75
Goodpaster Winter Road
Progressive Creek Hill
15 AUG 2003
Filename
coe8x11GPwinterTrail_fig1-3.mxd



TYPICAL ROAD SECTION - PROGRESSIVE CREEK HILL - PROPOSED



TYPICAL ROAD SECTION - PROGRESSIVE CREEK HILL - RECLAIMED

Construction Notes

1. Cut at crest of hill and fill as needed to widen the trail over a 700 ft length.

Reclamation Notes

1. To remain as trail.

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Goodpaster 1
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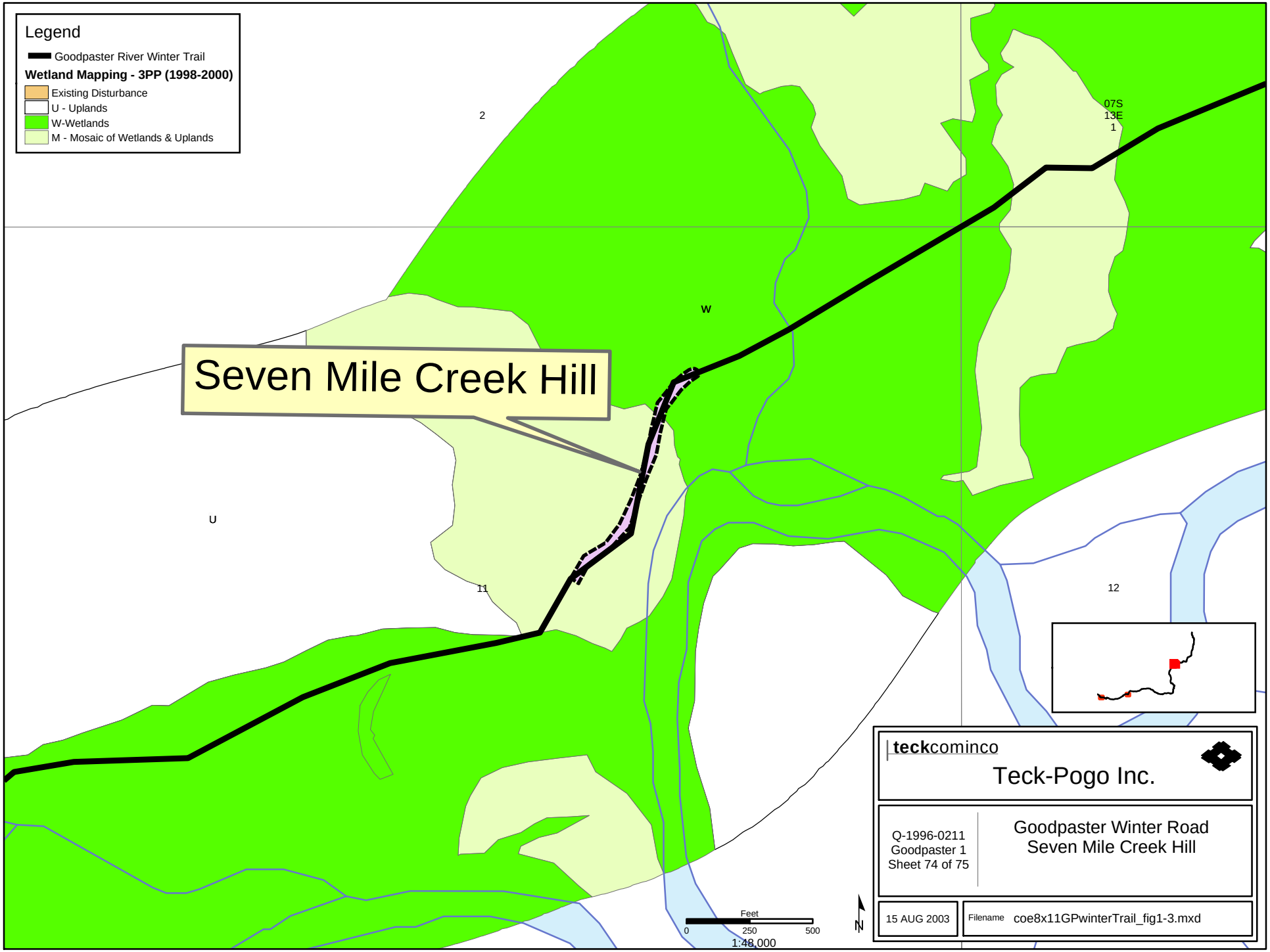
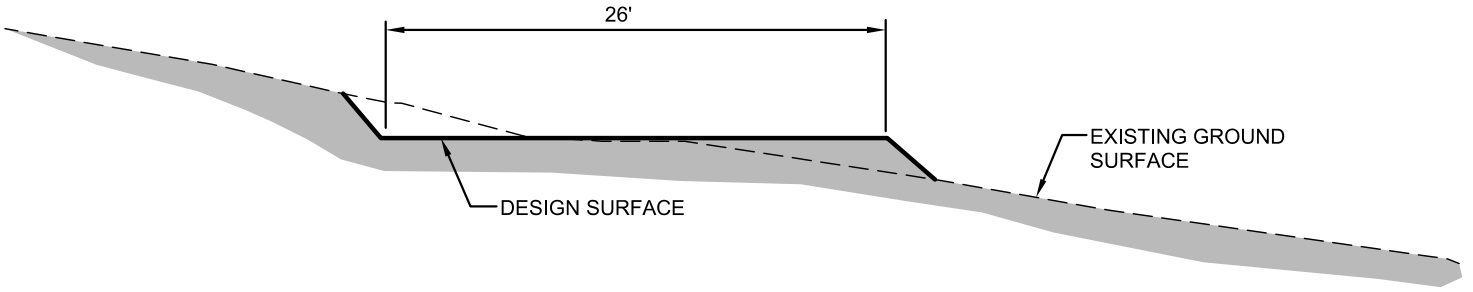
GOODPASTER WINTER ROAD
PROGRESSIVE CREEK HILL
TYPICAL SECTION

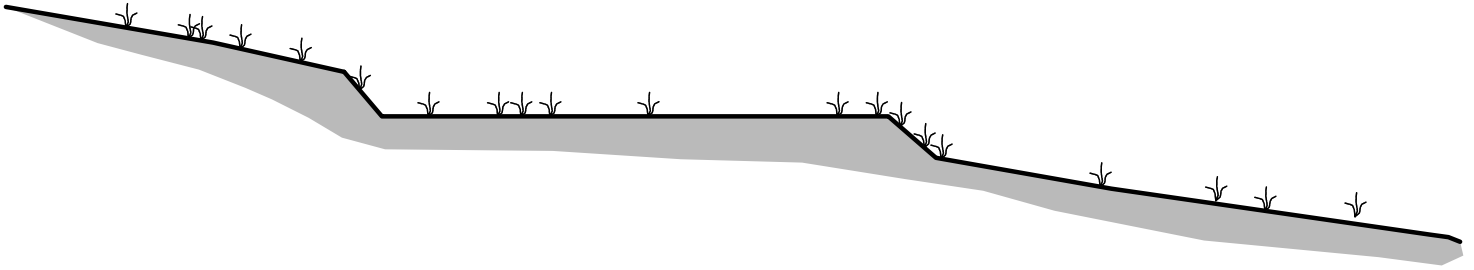
15 AUG 2003

Reclaim GP Winter Road.dwg


Legend
Goodpaster River Winter Trail
Wetland Mapping - 3PP (1998-2000)
Existing Disturbance
U - Uplands
W-Wetlands
M - Mosaic of Wetlands & Uplands
Seven Mile Creek Hill
2
W
U
11
12
07S
13E
1
Feet
0
250
500
1:48,000
N
teckcominco
Teck-Pogo Inc.
Q-1996-0211
Goodpaster 1
Sheet 74 of 75
Goodpaster Winter Road
Seven Mile Creek Hill
15 AUG 2003
Filename
coe8x11GPwinterTrail_fig1-3.mxd



TYPICAL ROAD SECTION - SEVEN MILE CREEK HILL - PROPOSED



TYPICAL ROAD SECTION - SEVEN MILE CREEK HILL - RECLAIMED

Construction Notes

1. Cut and fill as needed to provide a level driving surface over a 1,000 ft length.

Reclamation Notes

1. To remain as trail.

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GOODPASTER WINTER ROAD
SEVEN MILE CREEK HILL
TYPICAL SECTION

15 AUG 2003

Reclaim GP Winter Road.dwg

Appendix C

Statutory and Executive Order Compliance Documentation

C.1 National Historic Preservation Act
1. Final Programmatic Agreement
C.2 Endangered Species Act
1. U.S. Fish and Wildlife Serivce
A. EPA letter to USFWS (August 14, 2000)
B. USFWS letter to EPA (September 7, 2000)
C. USFWS letter to EPA (September 25, 2002)
D. USFWS letter to EPA (May 9, 2003)
2. National Marine Fisheries Service
A. EPA letter to NMFS (August 14, 2000)
B. EPA letter to NMFS (December 2, 2002)
C. NMFS letter to EPA (December 23, 2002)
C.3 Essential Fish Habitat Assessment
1. EPA letter to NMFS (December 2, 2002)
2. EFH Assessment
3. NMFS letter to EPA (May 19, 2003)

Appendix C.1

National Historic Preservation Act Final Programmatic Agreement

PROGRAMMATIC AGREEMENT
BY AND AMONG
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE U.S. ENVIRONMENTAL PROTECTION AGENCY,
THE U.S. ARMY CORPS OF ENGINEERS,
THE STATE OF ALASKA, AND THE ALASKA STATE HISTORIC
PRESERVATION OFFICER,
REGARDING
THE POGO GOLD MINE PROJECT

WHEREAS, Teck-Pogo, Inc. (Teck) proposes to develop, operate, and maintain the Pogo Mine Project (Project) over a period of 12 years; construction and development activities are proposed to take place within the next three years; operation and maintenance activities are expected to take place over the next twelve (12) years; and,

WHEREAS, the Environmental Protection Agency (EPA) and the Corps of Engineers (COE) propose to issue permits pursuant to the Clean Water Act to Teck and/or to otherwise consider the environmental effects of these proposed activities pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.); and,

WHEREAS, EPA and the COE have determined that these proposed activities potentially may affect historic properties eligible for inclusion to the National Register of Historic Places (NRHP) during the life span of this project; and have consulted with the Advisory Council on Historic Preservation (Council) and the State Historic Preservation Officer (SHPO) pursuant to 36 CFR 800.14(b) of the regulations implementing Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C.470f)(NHPA); and

WHEREAS, EPA is the lead federal agency responsible for preparing an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 et seq.), as implemented by the Council on Environmental Quality Regulations 40 CFR Parts 1500-1508; EO 13175 on Consultation and Cooperation with Tribal Governments, EO 12898 on Environmental Justice (February 1994); and

WHEREAS, the Council has been invited to participate in this Programmatic Agreement (PA), and has agreed to do so; and

WHEREAS, the State of Alaska (State), as landowner, proposes to issue permits to Teck pursuant to its State statutory authorities in a timely and consistent manner in consultation with EPA and the COE, and wishes to be considered a signatory party, and has been invited to participate in this PA; and

WHEREAS, EPA, the COE, and the State of Alaska have consulted with and continues to consult with the twelve (12) Federally recognized Indian tribes who attach religious and/or cultural significance to properties that may be affected by the project, and these tribes have been invited to concur in this programmatic agreement. These tribes include: Circle Native Community, Dot Lake Village Council, Native Village of Eagle, Native Village of Healy Lake, Minto Native Village, Tanacross Village Council, Tetlin Village Council, Mentasta Traditional Council, Nenana Native Village, Native Village of Tanana, Manley Village Tribal Council, and

Northway Traditional Council.

WHEREAS, the terms of this Agreement shall apply to all lands affected by the Pogo mine project. As the lead federal agency, EPA has overall responsibility for NHPA compliance. The COE recognizes and accepts lead responsibility for compliance with the NHPA for cultural resources that may be discovered in the COE permit area during construction activities. The term "permit area" as used in COE regulations (33 CFR Part 325, Appendix C) means those areas comprising the waters of the United States that will be directly affected by the proposed work (discharge of dredged or fill material) and uplands directly affected as a result of authorizing the work. The following three tests must all be satisfied for an activity undertaken outside the waters of the United States to be included within the "permit area":

i. Such activity would not occur but for the authorization of the work (discharge of dredged or fill material) within the waters of the United States;

ii. Such activity must be integrally related to the work to be authorized within waters of the United States. Or, conversely, the work to be authorized must be essential to the completeness of the overall project or program; and

iii. Such activity must be directly associated (first order impact) with the work to be authorized.

Proposed activities subject to the COE permit jurisdiction includes the following (dependent upon final project description): mechanized land clearing of the mill site; mill site fill; impoundment structure(s) (structures for the purpose of this document means a dam); road construction (both within the mill site and access route to some degree dependent upon route selection and construction requirements); airstrip runway construction; and material source sites land clearing and overburden stockpiles.

EPA shall be considered the lead federal agency with respect to any potential cultural resource effects outside the COE permit area as well as potential effects related to operation of the proposed Pogo mine project. The State, in order to comply with authorities under AS 41.35 and 11 AAC 16, shall insure that Teck complies with the terms of the PA as a condition of State permits.

NOW THEREFORE, EPA, the COE, the State, the Council, and the SHPO agree that the Project shall be administered in accordance with the following stipulations to satisfy EPA's and the COE's Section 106 responsibilities and the State's statutory responsibilities.

STIPULATIONS

The EPA, COE, and State shall ensure that the following measures are carried out:

I. Administrative Considerations:

A. The COE, EPA, and the State may attach this PA or the stipulations listed in this PA to the Record of Decision(s) (ROD) for this project, to permits, and to other conditions issued so that this PA and its requirements become legally enforceable and binding on the permittee. The permittee shall comply with this PA on these measures and failure to do so could result in suspension, modification, or revocation of the applicable agency's permit.

B. This PA and all of its requirements shall be binding on Teck as permittee, its successors, and assigns.

C. Because of both singular and overlapping legal authorities and purviews among the EPA, COE, and the State regarding individual Project components or activities, one or more of these agencies may be responsible for carrying out the terms of this PA for a given Project component or activity. For certain larger Project components and activities, all involved agencies may carry out the terms of this PA jointly.

D. The EPA, COE, and the State shall enforce the terms of this PA as is appropriate within each agency's scope with regard to permits, and other conditions that incorporate this PA and its terms. Each shall notify the others if any of them becomes aware of an instance of possible non-compliance with the terms and conditions of this PA or permit or conditions as they relate to this PA. In such case, the "responsible agency(ies)" shall ensure compliance consistent with its/their legal authorities and consult with the other agencies, as needed.

E. Teck shall not initiate or support any actions that may jeopardize a historic property or the completion of PA tasks without the prior written approval of the "responsible agency(ies)."

II. Historic Properties, Areas of Potential Effect, and the Applicability of this PA:

A. This PA shall apply to the Project and all components of it, including those not known at this time or not specified in the permits, permit applications, or other project documents so long as they are within the jurisdiction of EPA, the COE, and/or the State.

B. The EPA, COE, and State shall determine the Areas of Potential Effect of the Project and its components, using the concepts and definitions for Area of Potential Effect (APE), Historic Property, Effect, Adverse Effect, etc. as outlined in 36 CFR Section 800.16. For the purpose of this PA, a historic property is defined as: a district, site, building, structure or object, including landscape, that meets eligibility requirements for the NRHP under 36 CFR 60.4 including properties to which a tribal government

or other party attaches religious and/or cultural significance in accordance with National Register Bulletin #38.

III. Tribal Consultation:

The EPA, COE, and the State shall consult with those tribal governments outlined in Attachment 1 of this PA in carrying out the terms of this PA throughout the life of the mine project and the agency(ies) permit duration. Consultation shall be an on-going process, and EPA, COE, SHPO, Indian tribes, other consulting parties, and Council may consult at any time in person, writing, including e-mail, or over the phone.

IV. Identification and Evaluation of Historic Properties and Assessment of Adverse Effects:

A. Teck shall make a reasonable and good faith effort to identify historic properties within each Project activity or component's APE, and shall make recommendations to the EPA, COE, State, and SHPO regarding NRHP eligibility. Prior to the initiation of identification and evaluation efforts, Teck shall implement guidance received from the agency(ies) regarding the level and scope of efforts. If Teck and the agency(ies) disagree as to what constitutes adequate identification and evaluation efforts, the EPA, COE, State, and SHPO shall consult to arrive at a determination. If a dispute or objection remains on this issue, these parties shall resolve it in accordance with stipulation XII, Dispute Resolution, below.

B. Identification efforts may include background research, consultation, ethnographic research, oral history interviews, field surveys, probabilistic sampling, subsurface testing, and other types of tasks. In determining the level of identification and evaluation efforts necessary for a Project activity or component and its APE, Teck and the responsible agency(ies) should consider such factors as past planning, research and studies, the magnitude and nature of the proposed activities, the extent of potential effects on historic properties, and the nature and location of historic properties. Decisions about the level of identification and evaluation efforts shall also reflect documented, prior consultation with tribal governments outlined in Attachment 1. Where construction alternatives consist of corridors or large land areas, Teck may use a phased process, as per 36 CFR 800.4(b)(2) to conduct identification and evaluation efforts for selection of alternative. This will facilitate the selection of alternatives, and may eliminate the need to prepare complex determinations of eligibility for sites that will be avoided. Such identification efforts shall be conducted in accordance with the principles, standards, and guidelines contained in Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (Standards and Guidelines) (48 FR 44716-44742) and follow the procedures set forth in 36 CFR 800.4. Teck shall provide the COE, EPA, State, and SHPO with documentation of these identification and evaluation efforts that meets the Standards and Guidelines and is sufficient to enable them to determine the eligibility of properties to the NRHP.

C. All archaeological and historical investigations shall be conducted by anthropologists, archaeologists, historians, architectural historians, and/or historical architects meeting the qualifications of the Secretary of the Interior's Standards and Guidelines (48 FR 44738-44739). The technical expertise of the professional shall be appropriate to the nature of the investigation and expected type and significance of historic properties.

D. EPA and the COE shall apply the NRHP criteria (36 CFR 60.4) to identified properties, in consultation with the SHPO and any tribal government that may attach religious and/or cultural significance to the identified property. For purposes of carrying out the terms of this PA in a uniform manner, the State agrees to also follow the procedures in 36 CFR 60.4 and 36 CFR 800 where applicable to its area(s) of responsibility and where not in conflict with State statutory authorities. The EPA, COE, and State shall resolve disagreements among these parties regarding NRHP eligibility by requesting a determination of eligibility from the Keeper of the National Register, National Park Service in accordance with 36 CFR Part 63, whose determination shall be final.

E. The EPA, COE, or State, in consultation with the SHPO and in accordance with 36 CFR 800.5, shall make an assessment of whether a Project component or activity may have an adverse effect on historic properties and the necessary treatment of the historic property as outlined in stipulation V, Treatment of Historic Properties, below.

V. Treatment of Historic Properties:

A. Teck shall ensure to the extent possible the avoidance of all known historic properties, including archaeological and historical sites, historic buildings, structures, and landscapes.

B. If any historic property on or eligible for the NRHP may be adversely affected because it cannot be avoided, Teck shall develop a mitigation or treatment plan in consultation with the EPA, COE, State, SHPO, tribal governments that may attach religious and/or cultural significance to the identified property, and other affected parties. During the preparation of the treatment or mitigation plan, Teck shall consider the views of these parties. The mitigation or treatment plan shall not be implemented until approved by the EPA, COE, State, and SHPO. The EPA, COE, State, and SHPO shall also determine if additional public involvement is warranted during the preparation of the treatment or mitigation plan. Disputes or objections to the mitigation or treatment plan shall be resolved in accordance with stipulation XII, Dispute Resolution, below.

1. If the property is archaeological in nature, the mitigation or treatment plan shall include a research design with provisions for data recovery and recordation, analysis, reporting, and curation of resulting collection and records in an institution as outlined in stipulation VIII, Collection and Curation, below. Archaeological recovery, analysis, and reporting shall be in conformance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation (Archaeological Documentation Guidelines) (FR 48:44734-44737).

2. If the property is a building, structure, landscape, or not otherwise significant for the data that it contains, the plan shall specify approaches for the mitigation or treatment of the property in accordance with the principles, standards, and guidelines contained in Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (Standards and Guidelines) (48 FR 44716-44742). This may include but not be limited to use of such approaches as relocating a historic property, re-landscaping to reduce effects, public interpretation, ethnographic recordation, prescribing use of a Project component or activity is such as way as to minimize effects to historic properties or to those concerned about the effects of that component or activity. Methods of recordation and documentation described in the mitigation plan shall be in conformance with the Secretary of the Interior's Standards for Architectural and Engineering Documentation (FR 48:44730-44734) or other standards specified by SHPO.

VI. Treatment of Human Remains:

It is the intent of this project to totally avoid the disturbance or removal of any human remains. No activity will knowingly disturb human graves or human remains. If human remains or funerary objects are inadvertently discovered during the course of activities, all activities in the immediate vicinity shall immediately cease and the attached Plan of Action (POA) (Attachment 2) for the treatment of human remains shall be implemented. The POA shall be approved by the signatory parties in consultation with the Tribes.

VII. Monitoring:

A. Teck shall ensure that an archaeologist meeting the qualifications of the Secretary of the Interior's Standards and Guidelines (48 FR 44738-44739) is present in areas of ground disturbing activity when the probability to uncover unidentified archaeological or historical materials is determined likely by the EPA, COE, State, or SHPO. If Teck and the agency(ies) disagree as to what constitutes adequate identification and evaluation of efforts, the EPA, COE, State, and SHPO shall consult to arrive at a determination. If a dispute or objection remains on this issue, these parties shall resolve it in accordance with stipulation XII, Dispute Resolution, below.

B. The results of monitoring shall be included in a report to the EPA, COE, State, and SHPO. This report shall be developed and incorporated into the annual mine report and be acceptable to the EPA, COE, State, and SHPO.

VIII. Collection and Curation:

A. Materials collected in conjunction with recovery actions under this PA are the property of the State, as landowner.

B. Artifacts, faunal materials, and/or samples collected during activities covered by this PA shall be deposited in the University of Alaska Museum at Fairbanks, along with records, field notes, and related materials. At the discretion of the State, an alternate institution may be selected as a repository for collections.

C. Teck shall incur any and all reasonable costs charged by the approved institution for curation of materials collected in conjunction with recovery actions under this PA.

D. Teck, in consultation with the receiving institution, the State, the SHPO, and conservation specialist(s), shall insure that collected materials are conserved and packaged in a manner acceptable to the State and receiving institution.

IX. Annual Review and Reports:

A. Meetings

1. Annual Meeting: A meeting of the EPA, COE, SHPO, State, Teck, and other interested parties, including Indian tribes and governments if they so wish, shall be held each year to discuss the previous year's activities, and activities scheduled for the upcoming year. The parties may be linked by telephone if they so desire.

2. Additional Meetings: If any party deems a meeting necessary in addition to the annual meeting described above, that party shall inform the other parties, who shall consider the request in consultation with the other parties.

3. Meeting Minutes: Teck shall provide all signatories and concurring parties to this PA the minutes of the meetings described above within 15 calendar days of the date of the meeting(s).

B. Reports

1. Annual Report . Each year, prior to the Annual Meeting, Teck will provide the EPA, COE, State, Council, SHPO, and other signatory or concurring parties to this PA a written draft report of previous and upcoming activities as they relate to compliance with the stipulations of this agreement. The report will include the following:

   (a) A description of the past year's activities;
   (b) A projection of the upcoming year's activities, including information about anticipated Project components and activities and possible Project changes;
   (c) A summary of past year's and anticipated upcoming efforts to identification, evaluation, and protection of historic properties;
   (d) Descriptions of any historic properties affected, as well as any testing, remediation, or mitigation efforts;
   (e) Descriptions of artifacts or other archaeological or historic materials encountered, including representative photographs or drawings, a description of analyses, and other recordation documents as appropriate;
   (f) Clear illustrations of areas surveyed or monitored, cultural resources identified, and alternative routes to be followed to avoid any identified historic properties.
   (g) An evaluation of the effectiveness of the PA and whether any amendments or changes are needed.
   (h) A list of personnel who received training under XI, below.

2. Certain archaeological surveys, special excavations, and/or testing efforts may require

individual reports outside the normal reporting cycle in order to facilitate decision making processes. The scope and time parameters for these reports shall be determined on a case-by-case basis through consultation among Teck, the EPA, the COE, the State, and the SHPO.

X. Procedures for Inadvertent Discoveries:

A. Upon the inadvertent discovery of a potential historic property in any activity's APE, work in the immediate vicinity that could harm the historic property shall cease and Teck shall protect the discovery site against further disturbance.

B. Within 24 hours of the discovery Teck shall notify the EPA, COE, and SHPO of the discovery. If none of these agencies can be reached on the weekend, Teck shall contact them on the next business day.

C. The EPA, COE, SHPO, Teck, local Tribal governments if the site has the potential to be of Alaska Native origin, and other affected parties as deemed necessary by the agencies, shall confer in person or by telephone. If the consulting parties agree that the discovery is not significant, verbal authorization to proceed may be given by the SHPO or EPA.

D. If the consulting parties agree that the discovery may be significant, Teck shall proceed in accordance with stipulation V, Treatment of Historic Properties, or VI, Treatment of Human Remains, of this PA, as appropriate.

XI. Training:

A. On an annual basis, or more frequently as circumstances require, Teck shall insure that its contractors and employees are:

1. Advised against the illegal collection and disturbance of historic and prehistoric materials, including human remains, and are familiarized with the scope of applicable laws and regulations;
2. Trained in identifying and reporting historic properties, archaeological materials, human remains, and historic buildings or structures that may potentially be discovered during the course of their work.

B. The advice and training in A.1 and A.2 above shall be provided by an archaeologist meeting the qualifications of the Secretary of the Interior's Standards and Guidelines (48 FR 44738-44739).

XII. Dispute Resolution:

Should the EPA, COE, State, or SHPO object within 30 days of any action pursuant to this agreement, the parties shall consult among themselves and with Teck to resolve the objection.

A. If the EPA, COE, State, or SHPO determines that the objection cannot be resolved,

the EPA shall forward all documentation relevant to the dispute to the Council within 5 days. Within 30 days after receipt of all pertinent documentation, the Council will either:

1. Provide the EPA and the COE with recommendations, which they will take into account in reaching a final decision regarding the dispute; or

2. Notify the EPA and the COE that it will comment pursuant to 36 CFR 800.6(b), and proceed to comment. Any Council comment provided in response to such a request shall be taken into account by the EPA and the COE with reference to the subject of the dispute.

3. Any recommendation or comment provided by the Council shall be understood to pertain to the subject of the dispute; the EPA's the COE's responsibility to carry out all actions under this agreement that are not the subjects of the dispute shall remain the same.

B. At any time during implementation of the measures stipulated in this agreement, should an objection to any such measure or its manner of implementation be raised by a Tribe or a member of the public, the EPA and the COE shall take the objection into account and consult with the objecting party, the State, SHPO, the applicant, or the Council to resolve the objection.

XIII. Amendments:

Any signatory party to this Agreement may request that the other signatories consider amending it, whereupon the parties shall consult to consider the amendment(s). Amendments will be executed in the same manner as the original PA. Concurring parties may suggest proposed amendments to the signatory parties, who shall consult to consider them.

XIV. Termination:

Any signatory party to this agreement may terminate it by providing thirty (30) days notice to the other parties explaining the reasons for the termination. The signatory parties will consult during this period to seek agreement on amendments or other actions that will avoid termination. In the event of termination, the EPA and COE will comply with 36 CFR 800.1 through 800.7 and the State will comply with AS 41.35 on remaining Project undertakings, components, activities, or outstanding issues.

XV. Failure to Carry Out Agreement:

If the EPA, COE, and State do not insure that the terms of this PA are carried out, or if the Council determines that the terms of this PA are not carried out, the EPA and COE shall comply with 36 CFR Part 800.1 through 800.7 and the State will comply with AS 41.35 with regard to individual undertakings covered by this PA.

XVI. Duration:

This PA shall become effective upon execution by the EPA, COE, State, SHPO, and Council and shall remain in effect throughout the duration of the Federal and State permits issued to Teck or its subcontractors in conjunction with the project.

XVII. Execution and Implementation:

Execution and implementation of this PA evidences that the EPA and COE have satisfied responsibilities under Section 106 of the National Historic Preservation Act pursuant to 36 CFR 800, and that the State has satisfied responsibilities under the Alaska Historic Preservation Act pursuant to AS 41.35.

A. Executor (Signatory) Parties

Advisory Council On Historic Preservation

By: _____ Date: 8/12/03

John M. Fowler
Executive Director

U. S. Environmental Protection Agency

By: _____ Date: 10 June 2003

L. John Iani
Regional Administrator, Region 10

U. S. Army Corps of Engineers

By: _____ Date: 8 July 2003

for ~~Timothy J. Gallagher~~
~~Colonel, Corps of Engineers~~
~~Alaska District Engineer~~
Larry L. Reeder
Chief, Regulatory Branch

Alaska State Historic Preservation Officer

By: _____ Date: June 27, 2003

Judith E. Bittner
State Historic Preservation Officer

State of Alaska, Department of Natural Resources

By: _____ Date: 6/18/03

Bob Loeffler, Director
Division of Mining, Land, and Water

B. Tribal Concurrence

Circle Native Community
By:_____ Date:_____
Name:
Title:

Dot Lake Village Council
By:_____ Date: 6-24-2003
Name: WILLIAM S. MILLER
Title: PRESIDENT

Native Village of Eagle
By:_____ Date:_____
Name:
Title:

Native Village of Healy Lake
By:_____ Date: 7/10/03
Name: 1st chief
Title:

Minto Native Village
By:_____ Date:_____
Name:
Title:

Tanacross Village Council
By:_____ Date:_____
Name:
Title:

B. Tribal Concurrence (continued)

Tetlin Village Council
By: [illegible] Date: 7-1-03
Name:
Title:

Mentasta Traditional Council
By: Lisa Wolf Date: 7/21/03
Name: Lisa Mullott
Title: Firstchief

Nenana Native Village
By: Date:
Name:
Title:

Native Village of Tanana
By: Date:
Name:
Title:

Manley Village Tribal Council
By: Manley Village Tribal Council Date: 7 15 03
Name: [illegible]
Title: Chief

Northway Traditional Council
By: Date:
Name:
Title:

C. Applicant Concurrence

Teck-Pogo, Inc.

By: Karl Hanneman Date: 9/2/03
Name: Karl Hanneman
Title: Alaska Regional Manager

By signing the concurrence page, the applicant is bound by the Programmatic Agreement to implement any mitigation measures stipulated in this agreement. The applicant shall provide in writing a response to EPA that the applicant understands its obligations and agreement to carry forward with mitigation measures stipulated or deemed warranted by Section 106, which is integrally tied to EPA's decision to issue a ROD and NPDES permit.

Attachment 1

Tribal Governments

Circle Native Community
Paul Nathaniel, First Chief
(907) 773-2884

Dot Lake Village Council
William Miller, President
(907) 882-2695

Native Village of Eagle
Joanne Beck, President
(907) 547-2281

Native Village of Healy Lake
Ben Saylor, First Chief
(907) 876-5018

Minto Native Village
Andy Jimmie, Chief
(907) 798-7112

Tanacross Village Council
Jerry Isaac, President
(907) 883-5024

Tetlin Village Council
Donald "Danny" Adams, President
(907) 883-2021

Mentasta Traditional Council
Lisa Wolf, President
(907) 291-2328

Nenana Native Village
Charlie Stevens, President
(907) 832-5662

Native Village of Tanana
Faith Peters, Chairwoman
(907) 366-7160

Manley Village Tribal Council
John Woods, Chief
(907) 672-3331

Northway Traditional Council
Lorraine Titus, President
(907) 778-2211

Attachment 2: Teck-Pogo Programmatic Agreement
Plan of Action for the Treatment of Human Remains and Graves

Purpose:

The purpose of this document is to establish procedures for the treatment of human remains and graves in the event of inadvertent discoveries in conjunction with the Pogo Project.

Preface:

The treatment of human remains following inadvertent discovery is governed by state and federal laws, land status, postmortem interval (time since death), and biological/cultural affiliation. On all lands in Alaska, the intentional and unauthorized destruction or removal of <u>any</u> human remains or intentional disturbance of a grave or associated objects is a violation of AS 11.46.482(a)(6), a class C felony. The disturbance of "historic, prehistoric and archeological resources," including graves, on State lands is a violation of AS 41.35.200, a class A misdemeanor.

On federal lands and federal trust lands, the unauthorized destruction or removal of <u>archaeological</u> human remains (i.e., more than 100 years old) is a violation of 16 USC 470ee (Archeological Resources Protection Act)(ARPA). ARPA also applies to interstate transport of artifacts acquired illegally from <u>any</u> lands. If human remains on federal or federal trust lands are determined to be Native American, their treatment and disposition are also governed by the Native American Graves and Repatriation Act (NAGPRA) of 1990 (PL 101-601; 25 USC 3001-30013; 104 Stat. 3048-3058; 43 CFR 10), which also applies to Native American human remains and sacred objects from <u>any</u> lands <u>if</u> the remains or objects are curated in a federally funded institution.

In Alaska, the State Medical Examiner (SME) has jurisdiction over all human remains (with rare exceptions, such as deaths resulting from military aircraft incidents or certain shared Federal/State jurisdictions), regardless of age (AS 12.65.005 to 100). The Alaska State Troopers (AST) require notification when any human remains, including ancient remains, are discovered. Because the Pogo Project is situated entirely on State lands, ARPA and NAGPRA <u>do not</u> apply except with regard to the exceptions cited above.

A. Discovery, initial treatment, and notification:

1. No project personnel or project related activity shall knowingly disturb human graves or remains.

2. If human graves or remains are discovered during any activity associated with the Pogo Project, Teck-Pogo, Inc. (Teck) shall insure that work stops in the vicinity of the discovery and shall make efforts to protect the grave, remains, and/or associated materials from further disturbance.

3. All human remains shall be treated with care, dignity, and respect.

4. Following the inadvertent discovery of human remains, Teck shall immediately notify the Alaska State Troopers (including Lt. Nils Monsen or Investigator Bill Hughes and the SHPO). If the human remains are determined or believed to be Native American, Teck shall notify the tribes(s) with the nearest geographic, cultural, or ethnic affinity. Additionally, Teck

shall notify the State Medical Examiner's Office if the remains are believed to be less than 100 years old. Specific contact information may be found at the end of this document in Contact Information for Agency Officials Referenced in the Human Remains POA.

5. Following Teck's completion of the requirements of the POA, the SHPO shall determine if Teck has complied with the POA and will provide Teck with a notice to proceed with actions in the Treatment Plan (described below). However, if the AST or SME choose to investigate, any actions will be at their discretion.

B. Investigation and Reporting:

1. If any human remains or graves are discovered and avoided during Teck-Pogo activities without disturbance, Teck's project archaeologist shall document the nature and location of those discoveries by non-intrusive investigation. The information shall be recorded in a ***Report of Findings***, which shall include photos and maps as appropriate. Copies of this report shall be supplied to the EPA, COE, State, SHPO, AST, and SME within 10 work days from the time of discovery. Copies of the report may also be distributed to affected Native American governments and local governments, as well as other parties who may have an interest in the remains through lineal or cultural ties. Due to the confidential and sensitive nature of this information, distribution of the report to any organization other than EPA, COE, State, SHPO, AST, and SME shall be done in consultation with the SHPO. To insure that the remains will not be inadvertently disturbed at a later date, Teck field personnel shall be notified on a "need to know" basis.

2. If the AST and/or SME choose to investigate, Teck shall continue to preserve the integrity of the scene and shall only conduct further documentation at the direction of the AST and/or SME.

3. If the AST and SME decline involvement in the investigation, and it is not possible to leave the remains or grave in undisturbed condition, Teck's project archaeologist shall develop a ***Treatment Plan*** in consultation with the EPA, COE, State, SHPO, applicable Native American governments and/or local governments and other affected parties. If information in the ***Report of Findings*** is insufficient to characterize the grave or remains with regard to cultural or lineal affinity, the SHPO may require that Teck conduct or sponsor a respectful non-destructive investigation of the remains and associated funerary objects by a qualified professional to ascertain estimations of postmortem interval, race, sex, biological age, trauma, disease, cause of death, and cultural practices. The primary purpose of this investigation is to facilitate the identification of lineal and cultural descendents of the deceased. The findings of this investigation shall be documented in a ***Report of Osteological Examination*** that includes the above information, along with basic measurements[1] and photographs. The Report of Osteological Examination shall be attached or appended to the Treatment Plan prior to distribution. Copies of the ***Treatment Plan*** shall be supplied to the EPA, COE, State, and SHPO, along with applicable Native American governments, local governments, and other interested parties within 30 days of discovery, or within 45 days of

[1] Osteometric measurements shall minimally include those reported in "Data Collection Procedures for Forensic Skeletal Material," by Peer M. Moore-Jansen, Stephen D. Ousley, and Richard L. Jantz, the University of Tennessee, Department of Anthropology, Report of Investigations No. 48, 1994. These are standard measurements used in forensic osteological investigations conducted by/for the Alaska State Medical Examiner's office, and will provide consistency in reporting.

the discovery if a ***Report of Osteological Examination*** is required. In either case, the receiving parties shall have ten business days to review the treatment plan and provide comments to Teck, who shall incorporate the comments into the final ***Treatment Plan***.

C. Final Treatment and Disposition:

1. Upon concurrence and approval of the treatment plan by the EPA, COE, State, and SHPO, Teck shall follow the procedures outlined in the treatment plan. No response by the federal agencies, State, or interested parties may be taken as concurrence to the procedures outlined in the treatment plan. However, regardless of the absence of comments by the signatory or interested parties, Teck shall obtain SHPO approval of the treatment plan prior to implementation. The SHPO may provide a copy of the treatment plan to the SME and AST.

2. Any removal or re-interment of human remains shall be done in consultation with the EPA, COE, State, SHPO, and affected parties. The District Magistrate or Registrar of Vital Statistics shall be consulted regarding the need for a disinterment-reinterment permit or a burial transit permit.

Contact Information for Agency Officials Referenced in the Human Remains POA

Alaska State Troopers:

Lt. Nils Monsen, Statewide Criminal Investigations Unit, Criminal Investigation Bureau
Phone: (907) 269-5648)
Fax: (907) 338-7243
e-mail: nils_monsen@dps.state.ak.us

Investigator Bill Hughes, Missing Persons Bureau
Phone (907) 269-5058
Fax: (907) 338-7243
e-mail: william_hughes@dps.state.ak.us

Alaska State Medical Examiner's Office:

Dr. Franc G. Fallico, Acting Chief Medical Examiner
Phone: (907) 334-2200
Fax: (907) 334-2216
e-mail: franc_fallico@health.state.ak.us

Dr. Susan Klingler, Deputy Medical Examiner
Phone: (907) 334-2200
Fax: (907) 334-2216
e-mail: susan_klingler@health.state.ak.us

Alaska Bureau of Vital Statistics:

Alfred G. Zangri, Chief
Phone: (907) 465-3392
Fax: (907) 465-3618
e-mail: al_zangri@health.state.ak.us

Alaska Office of History and Archaeology (State Historic Preservation Office):

Judith E. Bittner, Chief (OHA/SHPO)
Phone: (907) 269-8715
Fax: (907) 269-8908
E-mail: judy_bittner@dnr.state.ak.us

Dave McMahan, Archaeologist (OHA/SHPO)
Phone: (907) 269-8723
Fax: (907) 269-8908
E-mail: dave_mcmahan@dnr.state.ak.us

Joan Dale, Archaeologist (OHA/SHPO)
Phone: (907) 269-8718
Fax: (907) 269-8908

Tribal Governments:

See Attachment 1 for a list of Tribal Government contacts

Appendix C.2

Endangered Species Act

1. U.S. Fish and Wildlife Serivce
   A. EPA letter to USFWS (August 14, 2000)
   B. USFWS letter to EPA (September 7, 2000)
   C. USFWS letter to EPA (September 25, 2002)
   D. USFWS letter to EPA (May 9, 2003)
2. National Marine Fisheries Service
   A. EPA letter to NMFS (August 14, 2000)
   B. EPA letter to NMFS (December 2, 2002)
   C. NMFS letter to EPA (December 23, 2002)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply to
Attn of: OW-130

AUG 1 4 2000

Mr. Patrick Sousa
Field Supervisor
U.S. Fish and Wildlife Service
101 - 12th Avenue, Box 19, Room 110
Fairbanks, Alaska 99701

Re: Endangered Species

Dear Mr. Sousa:

This letter is a request for a current species list from your agency. With the enclosed document, EPA opens the comment period on scoping for the Pogo Mine Project Environmental Impact Statement (EIS).

The Scoping Document contains the project as proposed by the applicant, Teck Resources. The proposed project is an underground gold mine and ancillary facilities with an all season access road and an airstrip. A map showing the proposed footprint of the project is included. The road access alternatives are described in the text of the document.

An application for a National Pollutant Discharge Elimination System (NPDES) permit has also been received for this project. The final location of the discharge point may not be decided until a Record of Decision is issued by EPA on the EIS but the approximate location will be:

Latitude: 64º27' Longitude: 144º54'

If you have any concerns that this project may adversely affect a threatened or endangered species, please contact me so your concerns may be addressed in the EIS.

If you have any questions regarding this project, please feel free to call me at (206) 553-0246.

Sincerely,

John Matthew Harrington
EIS Project Manager

Enclosure

cc: Leroy Phillips, COE/Anchorage

United States Department of the Interior

FISH AND WILDLIFE SERVICE
NORTHERN ALASKA ECOLOGICAL SERVICES
101 12th Ave., Box 19, Room 110
Fairbanks, Alaska 99701

September 7, 2000

RECEIVED
SEP 12
U.S. EPA REGION 10
OFFICE OF WATER

John Matthew Harrington
Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, WA 98101

Re: Endangered Species
Pogo Mine Project EIS

Dear Mr. Harrington:

The U.S. Fish and Wildlife Service has received your request for a species list for Pogo Mine Project site.

There are no threatened or endangered species in the project area. The proposed project site is within the range of the American peregrine falcon (*Falco peregrinus anatum*), which was removed from the list of threatened and endangered species on August 25, 1999. Due to its recent recovery from endangered status, the American peregrine falcon will be monitored on a regular basis for the next decade. If survey data indicates a reversal in recovery, the American peregrine falcon could be emergency listed at any time. The Service recommends applicants and agencies avoid impacts to peregrine falcons to assure a healthy long-term population. The Service believes the proposed project and associated activities are not likely to adversely affect peregrine falcons.

We have searched our raptor database for known nest sites within 15 miles of the Pogo Mine site. For your information, the following is the result of that search:

SPECIES	Miles	Direction	Latitude	Longitude	Remarks
AMERICAN PEREGRINE FALCON	4.4	186	64 23' 12"	144 54' 56"	Nest Site
AMERICAN PEREGRINE FALCON	9.6	217	64 20' 16"	145 5' 34"	Nest Site
AMERICAN PEREGRINE FALCON	9.6	217	64 20' 16"	145 5' 34"	Nest Site
AMERICAN PEREGRINE FALCON	11.6	213	64 18' 31"	145 6' 40"	Nest Site
AMERICAN PEREGRINE FALCON	12.0	72	64 30' 15"	144 31' 0"	Nest Site
GOLDEN EAGLE	13.8	127	64 19' 45"	144 31' 54"	Nest Site

AMERICAN PEREGRINE FALCON	14.6	350	64 39' 30"	144 59' 10"	Nest Site
AMERICAN PEREGRINE FALCON	14.6	350	64 39' 29"	144 59' 10"	Nest Site
BALD EAGLE	14.9	210	64 15' 48"	145 9' 8"	Nest Site

This letter constitutes informal consultation under section 7 of the Endangered Species Act of 1973, as amended. Preparation of a Biological Assessment or further consultation regarding this project is not necessary at this time. If project plans change, additional information on listed or proposed species becomes available, new species are listed that may be affected by the project, or listed species are observed on the project site, consultation should be reinitiated by your agency.

We appreciate this opportunity to comment. Please contact Elaine Gross at 456-0209 should you have any questions concerning these comments.

Sincerely,

Larry Bright

Larry K. Bright
Acting Field Supervisor

ESG/esg

cc: Ted Rockwell, EPA, Anchorage
Leroy Phillips, COE, Anchorage
Steve McGroarty, ADNR, Fairbanks
Jack Winters, ADF&G, Fairbanks
Pete McGee, ADEC, Fairbanks
Dick LaFebvre, ADNR, Anchorage
Karl Hanneman, Alaska Regional Manager, Teck Resources, Inc., 3520 International St, Fairbanks, 99701

United States Department of the Interior
Fish and Wildlife Service
FAIRBANKS FISH AND WILDLIFE OFFICE
101 12th Ave., Box 19, Room 110
Fairbanks, Alaska 99701

September 25, 2002

RECEIVED
OCT - 1 2002
US EPA REGION 10
OFFICE OF WATER

Bill Riley
NEPA Compliance Coordinator
U.S. EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101

Re: Preliminary Draft Environmental Impact Statement for Pogo Gold Mine

Dear Mr. Riley:

The U.S. Fish and Wildlife Service has reviewed EPA's Preliminary Draft Environmental Impact Statement (PDEIS) for the Pogo Gold Mine Project. Teck-Pogo Inc. proposes to develop the underground Pogo Mine on State of Alaska land in the Goodpaster River Valley approximately 38 miles northeast of Delta Junction, Alaska. The mine would process approximately 2,500 tons of ore per day and would produce approximately 375,000 ounces of gold annually at start-up, with a possibility of increasing production and expanding the mill to 3500 tpd and 500,000 oz annually. The project would require 25 to 33 months to construct and have an operating life of approximately 12 years. The project would include a 49.5-mile access road, 50-mile power line, mill and camp complex, dry stack tailings pile and recycle water tailings pond, 3,000-foot airstrip, gravel pits, laydown and fuel storage areas, and a local network of roads. Gold would be recovered by gravity separation, flotation concentration, and cyanide vat leaching. Approximately one-half of the tailings would be returned underground as a paste backfill.

We have the following comments on the PDEIS:

2.3.27 Mine Closure and Reclamation

The PDEIS states that the goal of closure and reclamation plans would be to reestablish wildlife habitat within 5 to 15 years by stimulating the growth of early successional vegetation. The 49.5 mile main access road would be reclaimed and all bridges removed. On-site access and service roads not specifically required for post-closure and reclamation monitoring would be reclaimed.

The Goodpaster River, a major clear water tributary to the Tanana River in the Yukon drainage basin, supports significant fish resources including anadromous chinook and chum salmon, resident Arctic grayling, round whitefish, northern pike, and burbot. The river provides excellent spawning, rearing and overwintering habitat and serves as an important migration corridor for both resident and anadromous fish.

Wetlands in the project area are vital for sustaining a variety of fish, migratory birds, and other wildlife because they provide habitat for nesting, feeding, rearing, and staging. These wetlands support numerous species, including peregrine falcons, bald eagles, pintail, canvasback and other ducks, moose, caribou, gray wolf, brown and black bear, lynx, beaver, muskrat, coyote, red fox, martin, short-tailed weasel, least weasel, mink, wolverine and river otter.

The Pogo project lies in the southwestern portion of the annual range of the Fortymile Caribou Herd and 15 miles southwest of the herd's current calving and summer ranges. The Pogo project may affect the Fortymile Caribou Herd by reducing available range that may be required if the herd continues to grow in size and expands its range.

Due to the value of the fish and wildlife resources in this area, the applicant, with assistance from agencies and local residents, has sought to minimize the potential impacts of this project. Early in the planning process it was recognized that the road and powerline corridor would impact far more acreage and present a different set of environmental risks than the proposed mine and associated facilities. In order to minimize total project impacts, it is therefore essential that erosion, habitat loss, wildlife disturbance, and other impacts of the Pogo road and powerline be kept to a minimum during operation and upon closure of the mine.

The Service commends Teck-Pogo Inc. for their recognition of the importance of this area to fish and wildlife, and we support the proposed reclamation of the access road and powerline.

4.8.2 Cumulative Impacts - Options Common to All Alternatives:

As mentioned in the PDEIS and earlier in these comments, the Goodpaster River is a high-value fish-bearing stream. The proposed location of the new airstrip abuts an outside bend of the Goodpaster River, which is where erosion and bank failure normally occurs during flood events. In the interagency *General Recommendations for Riparian Management Zones in Interior Alaska* (2002), a minimum riparian buffer zone of 200' is recommended when a project is located along a high-value anadromous fish stream, is on public land, and the area has wildlife habitat values of regional significance. In order to protect the airstrip from erosion and the river from sedimentation, and considering the potential for contaminant migration toward the river, the Service recommends maintaining a 300' buffer zone along the Goodpaster River. Once the new airstrip is functioning, the old airstrip should be removed and the site revegetated in order to maintain a larger riparian buffer in the area of development.

As we stated in our September 7, 2000 letter, there are no threatened or endangered species in the project area, and thus impacts to listed species are not anticipated.

We appreciate this opportunity to comment. Please contact Elaine Gross at 456-0209 should you have any questions concerning these comments.

Sincerely,

Larry Bright

Larry K. Bright
Acting Field Supervisor

cc: Cindi Godsey, EPA, Anchorage
Leroy Phillips, COE, Anchorage
Steve McGroarty, ADNR, Fairbanks
Jack Winters, ADF&G, Fairbanks
Pete McGee, ADEC, Fairbanks
Karl Hanneman, Alaska Regional Manager, Teck Resources, Inc., 3520 International St, Fairbanks, 99701

Literature Cited

ADF&G. 2002. General Recommendations for Riparian Management Zones in Interior Alaska. Interagency Report. Fairbanks, AK.

United States Department of the Interior
Fish and Wildlife Service
FAIRBANKS FISH AND WILDLIFE OFFICE
101 12th Ave., Box 19, Room 110
Fairbanks, Alaska 99701
May 9, 2003

RECEIVED
MAY 12
U.S. EPA REGION 10
OFFICE OF WATER

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Re: Draft Environmental Impact Statement for Pogo Gold Mine

Dear Ms. Gold:

The U.S. Fish and Wildlife Service has reviewed EPA's Draft Environmental Impact Statement (DEIS) for the Pogo Gold Mine Project. Teck-Pogo Inc. proposes to develop the underground Pogo Mine on State of Alaska land in the Goodpaster River valley approximately 38 miles northeast of Delta Junction, Alaska. The geologic resource of the mine is approximately 5.6 million ounces of gold. The proposed mine would use crushing, grinding, gravity concentration, floatation, and cyanide leaching processes to extract the gold. The tailings would be placed back underground and in an engineered disposal area in the Liese Creek valley. The mine would operate 24 hours a day, 365 days a year. Mine development is projected to begin in fall, 2003 with construction lasting approximately 2 years and have an operating life of approximately 11 years. At the end of mine life, Teck-Pogo proposes to seal and reclaim the mine. The Agency Preferred Alternative combines the mine access route and powerline from Alternative 2 (the Shaw Creek Hillside All-Season Road) and the water treatment system from Alternative 4 (the Off-River Treatment Works). Under this alternative, the 49-mile Shaw Creek Hillside All-Season Road would be open to general public use for the first 23 miles where the road is within or adjacent to the Tanana Valley State Forest, and then closed for the remaining 26 miles to the mine. The last 26 miles would be reclaimed, and the first 23 miles of the road would be retained permanently. A 50-mile power line would parallel the road. Mine site facilities include a mill and camp complex, dry stack tailings pile and recycle water tailings pond, 3,000-foot airstrip located on the Goodpaster Valley floor just north of the mouth of Leise Creek, gravel pits, laydown and fuel storage areas, and a local network of roads.

We have the following comments on the DEIS:

2.3 Applicant's Preferred Alternative

Alternative 2 is the Applicant's Proposal. The Agency's Preferred Alternative is discussed in Section 5 - Agency Determination of Preferred Alternative. Section 2.3 should be changed from

"Applicant's Preferred Alternative" to "Applicant's Proposal" to eliminate confusion regarding the Preferred Alternative. As the DEIS is written, there appears to be two preferred alternatives - the Applicant's and the Agency's. There should only be one Preferred Alternative. Potential impacts of the Preferred Alternative, as compared to other alternatives, should be the focus the final EIS.

4.12 Land Use

Options for permanent and temporary access roads are discussed in sections 4.12.4 and 4.12.5. The Agency Preferred Alternative modified the Applicant's Proposal (Alternative 2) to include reclamation of roughly one-half of the proposed 49-mile access road. The DEIS effectively analyzes temporary and permanent access road options, but lacks a thorough analysis of the newly proposed combination of temporary and permanent access in the Agency Preferred Alternative. The FEIS should address the direct, indirect and cumulative effects of the preferred access alternative.

4.8 Fish and Aquatic Habitat

Section 4.8.2. As stated in the DEIS and PDEIS, the Goodpaster River is a high-value fish-bearing stream. The proposed location of the 3,000 ft. airstrip abuts an outside bend of the Goodpaster River. Outside bends of rivers are very susceptible to erosion and bank failure during floods and high sediment discharge. Clearing for the airstrip could lead to river channel changes with increased downstream sedimentation and possible loss of spawning and macroinvertebrate habitat. Erosion resulting from airstrip construction could have a major local impact on the Goodpaster River if it occurred during salmon spawning. On page 4-89, the DEIS states that from the perspectives of local topography and flight safety, the airstrip location cannot meet both the Service requested 300-foot buffer and the FAA runway alignment requirements. The applicant proposes to use mitigation and reclamation measures to maintain river bank stability and to prevent encroachment on the airstrip. The most effective way to stabilize a river bank is to maintain a vegetated buffer. A <u>minimum</u> buffer of 50 feet would help stabilize the river bank. The airstrip should be engineered to include a vegetative buffer ranging from 50 to 300 feet depending on runway alignment requirements. Trimming willow to a 3 foot height along the bank will keep roots in tact and stabilize the river bank while providing visibilty. Rather than using rip rap to stabilize the bank, the Service asks you consider, as you work to mitigate impacts, leaving the bank vegetated and utilizing methods discussed in the enclosed paper, *The Cross-Vane, W-Weir and J-Hook Vane Structures... Their Description, Design and Application for Stream Stabilization and River Restoration* by D. L. Rosgen, P.H. The in-stream structures discussed in this paper reduce near-bank shear stress and stream power while increasing center channel shear stress and stream power to retain both flood-flow and sediment transport capacity. Testing has shown that submerged vanes like J-Hooks not only redirect velocity away from the riverbank thereby reducing erosion, but improve fish habitat by creating slow-water pools downstream of the structures.

4.20 Mitigation, Reclamation and Monitoring

Table 4.20-1 effectively summarizes resource protection measures that are being proposed by Teck-Pogo Inc. The Service commends Teck-Pogo Inc. for their recognition of the importance of this area to fish and wildlife, and we support the proposed mitigation measures. We have the following suggestions for improving the mitigation plan.

Wildlife. Mitigation measure #1 states, "Gravel pits excavated and maintained with appropriate pit slopes to ensure stability and avoid wildlife entrapment." The Service suggests you consider the following additional mitigation for creating and enhancing productive wildlife habitat when reclaiming gravel pits:

- Design reclaimed gravel pits to include a shallow littoral zone, extending at least 20 feet from shore with a maximum underwater shoreline slope of 20H:1V with a maximum water depth of 12" at 20 feet from shore. Extreme shallows (1-3") should be a portion of the 20-foot littoral zone to provide habitat for wading birds and shorebirds.

- The perimeter of the reclaimed gravel pit should be irregularly-shaped with coves, spits and peninsulas to provide a diversity of shoreline habitat.

- Overburden stockpiled from the gravel pit operation should be returned to the pit, taking care to spread a portion of it within the littoral zone. Organics from the overburden will facilitate plant growth.

Subsistence. Mitigation measure #1 states, "All-season road open only to Pogo-related vehicles. Gated, video monitored, and patrolled to ensure compliance." With the new Agency Preferred Alternative, the all-season road would be open to general public use for the first 23 miles where the road is within or adjacent to the Tanana Valley State Forest, and then closed for the remaining 26 miles to the mine. The last 26 miles would be reclaimed, and the first 23 miles of the road would be retained permanently. Mitigation for subsistence should be addressed under the Agency Preferred Alternative.

As we stated in our September 7, 2000 and September 25, 2002 letters, there are no threatened or endangered species in the project area, and thus impacts to listed species are not anticipated.

We appreciate this opportunity to comment. Please contact Elaine Gross at 456-0209 should you have any questions concerning these comments.

Sincerely,

Steven A. Lewis
Field Supervisor

cc: Doug Mutter, DOI, Anchorage
Cindi Godsey, EPA, Anchorage
Leroy Phillips, COE, Anchorage
Ed Fogels, ADNR, Anchorage
Steve McGroarty, ADNR, Fairbanks
Jack Winters, ADF&G, Fairbanks
Pete McGee, ADEC, Fairbanks
Karl Hanneman, Alaska Regional Manager, Teck Resources, Inc., 3520 International St, Fairbanks, 99701

Attachment: *The Cross-Vane, W-Weir and J-Hook Vane Structures... Their Description, Design and Application for Stream Stabilization and River Restoration* by D. L. Rosgen, P.H.

Literature Cited

Rosgen, David L. 2001. The Cross-Vane, W-Weir and J-Hook Vane Structures... Their Description, Design and Application for Stream Stabilization and River Restoration. In 2001 Wetlands Engineering & River Restoration Conference, August 27-31, Reno, NV.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply To
Attn Of: OW-130

AUG 14 2000

Mr. James W. Balsiger
Regional Administrator
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802

Re: Endangered Species/Essential Fish Habitat

Dear Mr. Balsiger:

This letter is a request for a current threatened and endangered species list and essential fish habitat managed species and habitat list from your agency. With the enclosed document, EPA opens the comment period on scoping for the Pogo Mine Project Environmental Impact Statement (EIS).

The Scoping Document contains a description of the project as proposed by the applicant, Teck Resources. The proposed project is an underground gold mine and ancillary facilities with an all season access road and airstrip. A map showing the proposed footprint of the project is included. The road access alternatives are described in the text of the document.

An application for a National Pollutant Discharge Elimination System (NPDES) permit has also been received for this project. The final location of the discharge point may not be decided until a Record of Decision is issued by EPA on the EIS but an approximate location is:

Latitude: 64º27' Longitude: 144º54'

If you have any concerns that this project may adversely affect a threatened or endangered species or impact essential fish habitat, please contact me so your concerns may be addressed in the EIS.

If you have any questions regarding this project, please feel free to call me at (206) 553-0246.

Sincerely,

John Matthew Harrington
EIS Project Manager

Enclosure

cc: Leroy Phillips, COE/Anchorage

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

DEC - 2 2002

Reply To
Attn. Of: OW-130

James Balsiger
Regional Administrator
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802

RE: Endangered Species/Essential Fish Habitat
Pogo Gold Mine Project

Dear Mr. Balsiger:

The purpose of this letter is to request a current endangered species list, essential fish habitat managed species, and habitat list for the Pogo Gold Mine Project from your agency. EPA sent you a letter, along with the Scoping Document, on August 14, 2000 requesting this information, however, we have not received a response.

Enclosed for your information is several figures depicting the location of the project area. I would appreciate a response as soon as possible. Please feel free to contact me at (206) 553-0171 or by email at gold.hanh@epa.gov if you have any questions or concerns.

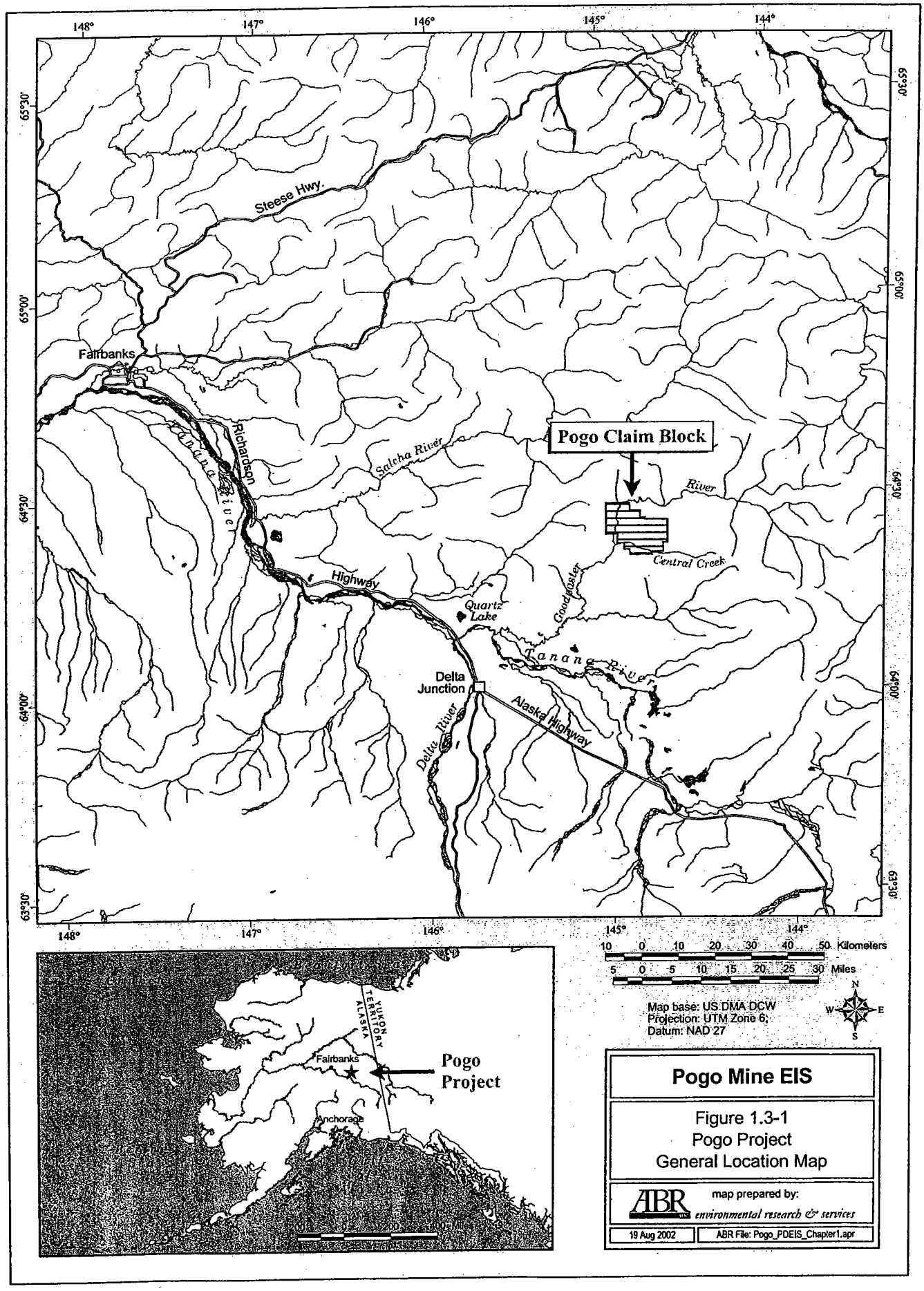
Thank you in advance for your help on this project.

Sincerely,

Hanh Gold
NEPA Compliance Coordinator

Enclosure

cc: Bill Riley, EPA
Ed Fogels, ADNR
Leroy Phillips, USACE
Mike Smith, Michael Baker, Jr., Inc.
Karl Hanneman, Teck-Pogo, Inc.

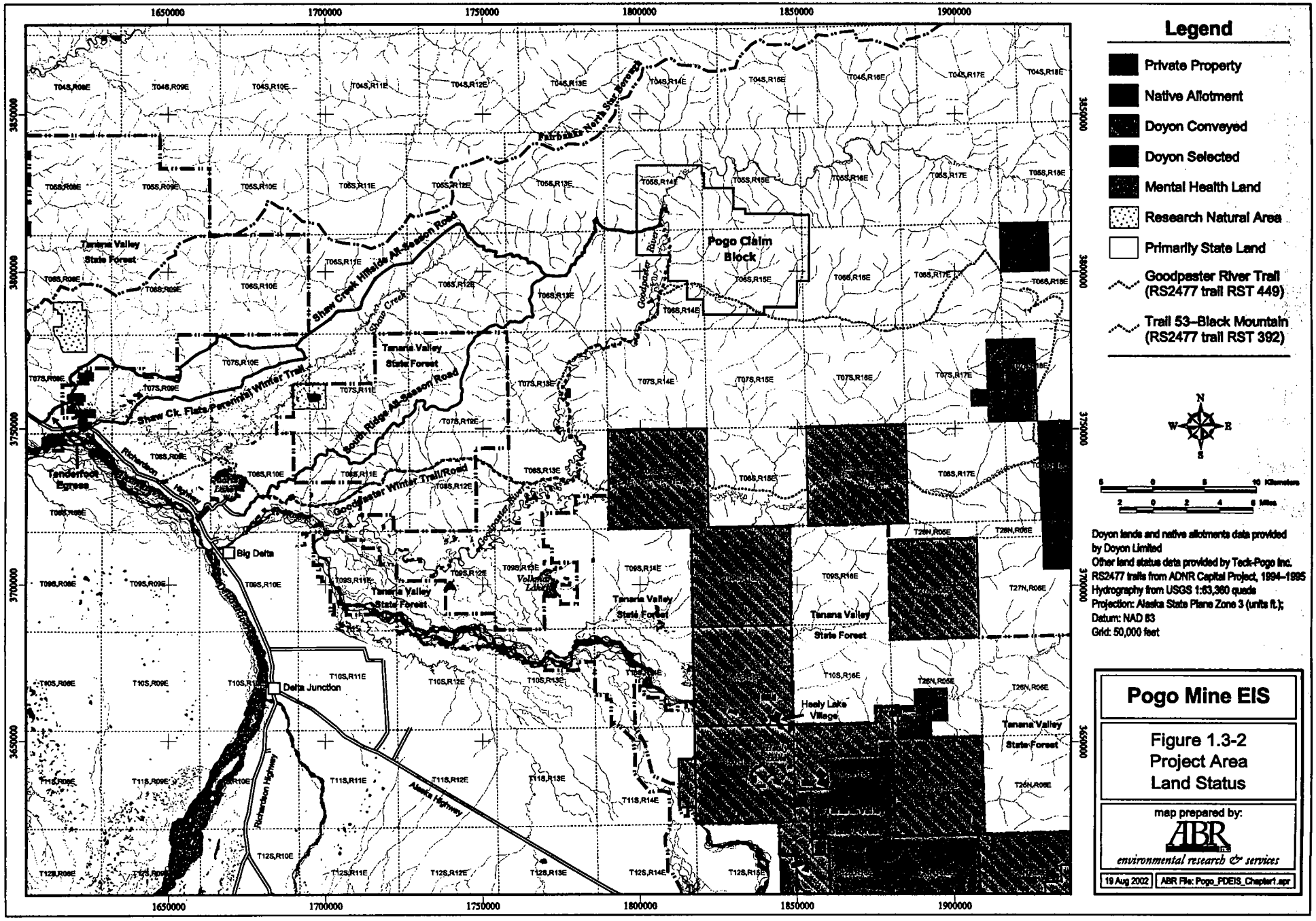


Pogo Mine EIS

Figure 1.3-1
Pogo Project
General Location Map

map prepared by:
ABR environmental research & services

19 Aug 2002 | ABR File: Pogo_PDEIS_Chapter1.apr


Legend
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Doyon Conveyed
Doyon Selected
Mental Health Land
Research Natural Area
Primarily State Land
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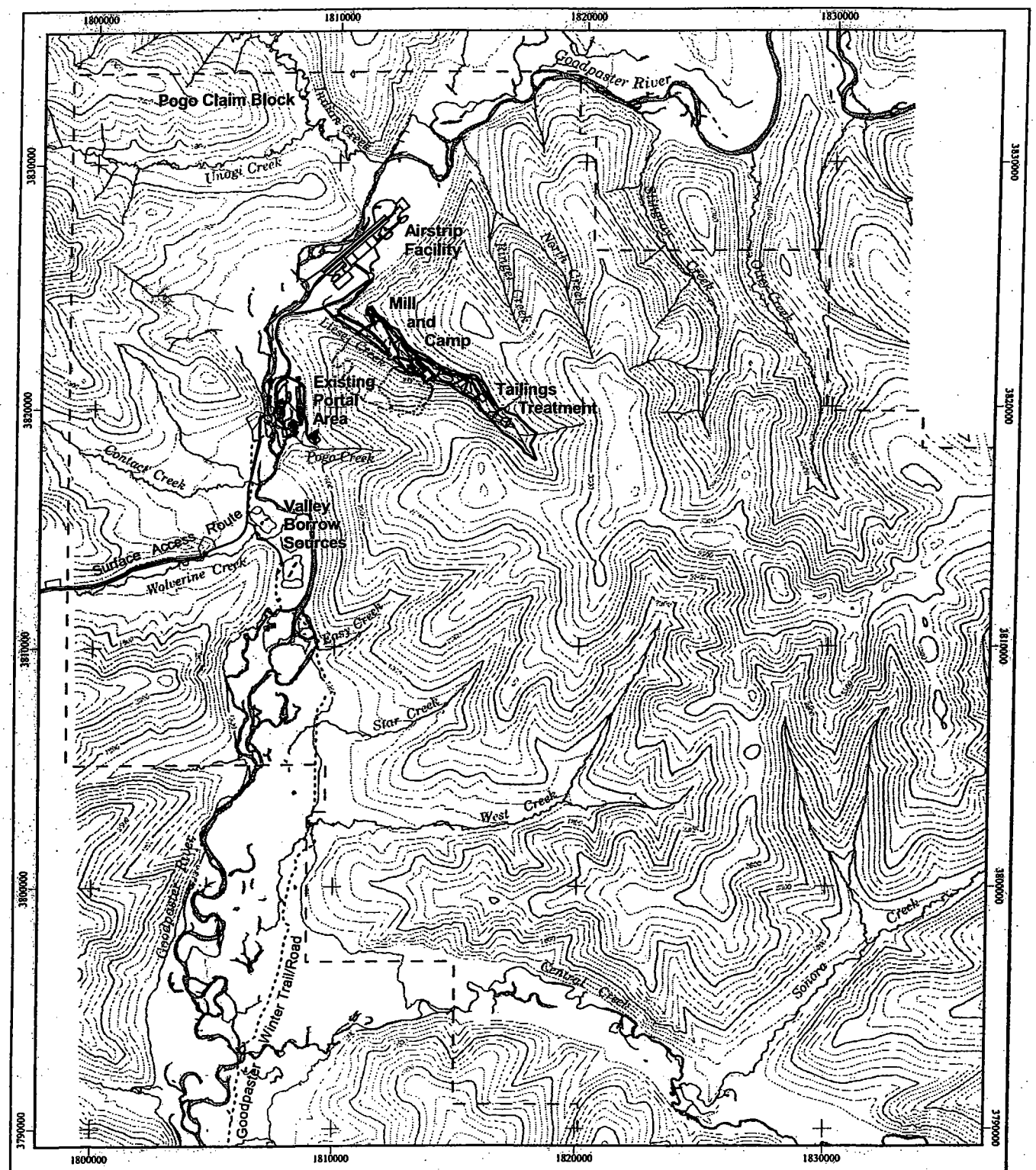
Delta Junction
Healy Lake Village
Volkmar Lake
Goodpaster River
Doyon lands and native allotments data provided by Doyon Limited
Other land status data provided by Teck-Pogo Inc.
RS2477 trails from ADNR Capital Project, 1994–1995
Hydrography from USGS 1:63,360 quads
Projection: Alaska State Plane Zone 3 (units ft.);
Datum: NAD 83
Grid: 50,000 feet
Pogo Mine EIS
Figure 1.3-2
Project Area
Land Status
map prepared by:
ABR
environmental research & services
19 Aug 2002
ABR File: Pogo_PDEIS_Chapter1.apr



Contours and hydrography by AeroMap U.S., Inc., 1997
Contour Interval: 100 feet
Mine site facilities from AMEC
Projection: Alaska State Plane Zone 3 (units ft.)
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Grid: 10,000 feet

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Pogo Mine EIS

Figure 1.3-3
Pogo Mine Site Area

map prepared by:
ABR environmental research & services

19 Aug 2002 | ABR File: Pogo_PDEIS_Chapter1.apr

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

December 23, 2002

RECEIVED
DEC 30 2002
U.S. EPA REGION 10
OFFICE OF WATER

Hanh Gold
NEPA Coordinator
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

Re: Pogo Mine T&E Species

Dear Ms. Gold:

The National Marine Fisheries Service (NMFS) has received your request for information regarding environmental laws that may be applicable to the Pogo Mine project. We have reviewed your preliminary information and offer the following comments specific to the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA).

Endangered Species Act

Section 7(a)(2) of the ESA directs interagency cooperation to ensure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of designated critical habitat. In Alaska, NMFS is responsible for the administration of the ESA as it applies to listed species of whales, Pacific salmon[1], and Steller sea lions.

No endangered species under NMFS jurisdiction are likely to occur in the vicinity of the project site, and critical habitat for listed species does not occur in the project vicinity. Additional information on ESA listed species is provided in Table 1, and more information is available on the internet at:

http://www.fakr.noaa.gov/protectedresources/

[1] Several Northwest Pacific salmon stocks grow to maturity in offshore areas of Alaska. Several of these stocks are listed as an endangered species. Please see the Summary of Salmon & Steelhead Listings at http://www.nwr.noaa.gov/ for further information.

Marine Mammal Protection Act

Marine mammals that are protected under the MMPA range throughout Alaskan marine waters. However, no marine mammals are expected to occur in the vicinity of the project site.

Further consultation with NMFS under the ESA and MMPA is not required unless substantial changes in the project occur. Please contact John Olsen for further coordination regarding this project, at (907) 271-5006.

Sincerely,

For James W. Balsiger
Administrator, Alaska Region

cc: ADEC, ADF&G, ADGC, USFWS, EPA - Anchorage

Table 1: The following species[2] and critical habitat occur in Alaska waters and have been provided protection under the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*):

Listed species	*Stock*	*Latin Name*	*Status*
Blue whale		*Balaenoptera musculus*	Endangered
Bowhead whale		*Balaena mysticetus*	Endangered
Fin whale		*Balaenoptera physalus*	Endangered
Humpback whale		*Megaptera novaeangliae*	Endangered
Right whale		*Balaena (=Eubalaena) glacialis*	Endangered
Sei whale		*Balaenoptera borealis*	Endangered
Sperm whale		*Physeter macrocephalus*	Endangered
Steller sea lion	Western population	*Eumetopias jubatus*	Endangered
Steller sea lion	Eastern population	*Eumetopias jubatus*	Threatened
Northern Sea Otter*		*Enhydra lutris kenyoni*	Candidate
Chinook salmon*	Puget Sound	*Oncorhynchus tshawytscha*	Threatened
	Lower Columbia River		Threatened
	Upper Columbia River Spring		Endangered
	Upper Willamette River		Threatened
	Snake River spring/summer		Threatened
	Snake River fall		Threatened
Sockeye salmon *	Snake River	*Oncorhynchus nerka*	Endangered
Steelhead*	Upper Columbia River	*Onchorynchus mykiss*	Endangered
	Middle Columbia River		Threatened
	Lower Columbia River		Threatened
	Upper Willamette River		Threatened
	Snake River Basin		Threatened

[2] The Endangered Species Act of 1973, as amended, defines traditional biological species concept of the biological sciences and "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature" (16 USC 1532). NMFS uses the term *evolutionarily significant unit* as synonymous with *distinct population segment* and lists Pacific salmon accordingly. For the purposes of section 7 consultations, these are all "species."

Leatherback sea turtle		*Dermochelys coriacea*	Endangered
American Peregrine Falcon*		*Falco peregrinus anatum*	Delisted
Short-tailed Albatross*		*Diomedea albatrus*	Endangered
Aleutian Canada Goose*		*Branta canadensis leucopareia*	Delisted
Steller's Eider*		*Polysticta stelleri*	Threatened

Designated critical habitat

Species Group	General Reference Area
Whales	No critical habitat has been designated for the above referenced whales in Alaskan waters.
Steller sea lion	Shelikof Strait Area, Bogoslof Area, and Seguam Pass Area (50 CFR Part 226.12)
Pacific Salmon*	No critical habitat has been designated for salmon species in Alaskan waters.

*The northern sea otter, American peregrine falcon, Aleutian Canada goose, short-tailed albatross, and Steller's eider are under the jurisdiction of the U.S. Fish and Wildlife Service at 907-786-3542. All salmon species are under the jurisdiction of NMFS, Northwest Regional Office, Seattle, Washington at (503) 230-5400.

Appendix C.3

Essential Fish Habitat Assessment

1. EPA letter to NMFS (December 2, 2002)
2. EFH Assessment
3. NMFS letter to EPA (May 19, 2003)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

DEC - 2 2002

Reply To
Attn. Of: OW-130

James Balsiger
Regional Administrator
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802

RE: Endangered Species/Essential Fish Habitat
Pogo Gold Mine Project

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Thank you in advance for your help on this project.

Sincerely,

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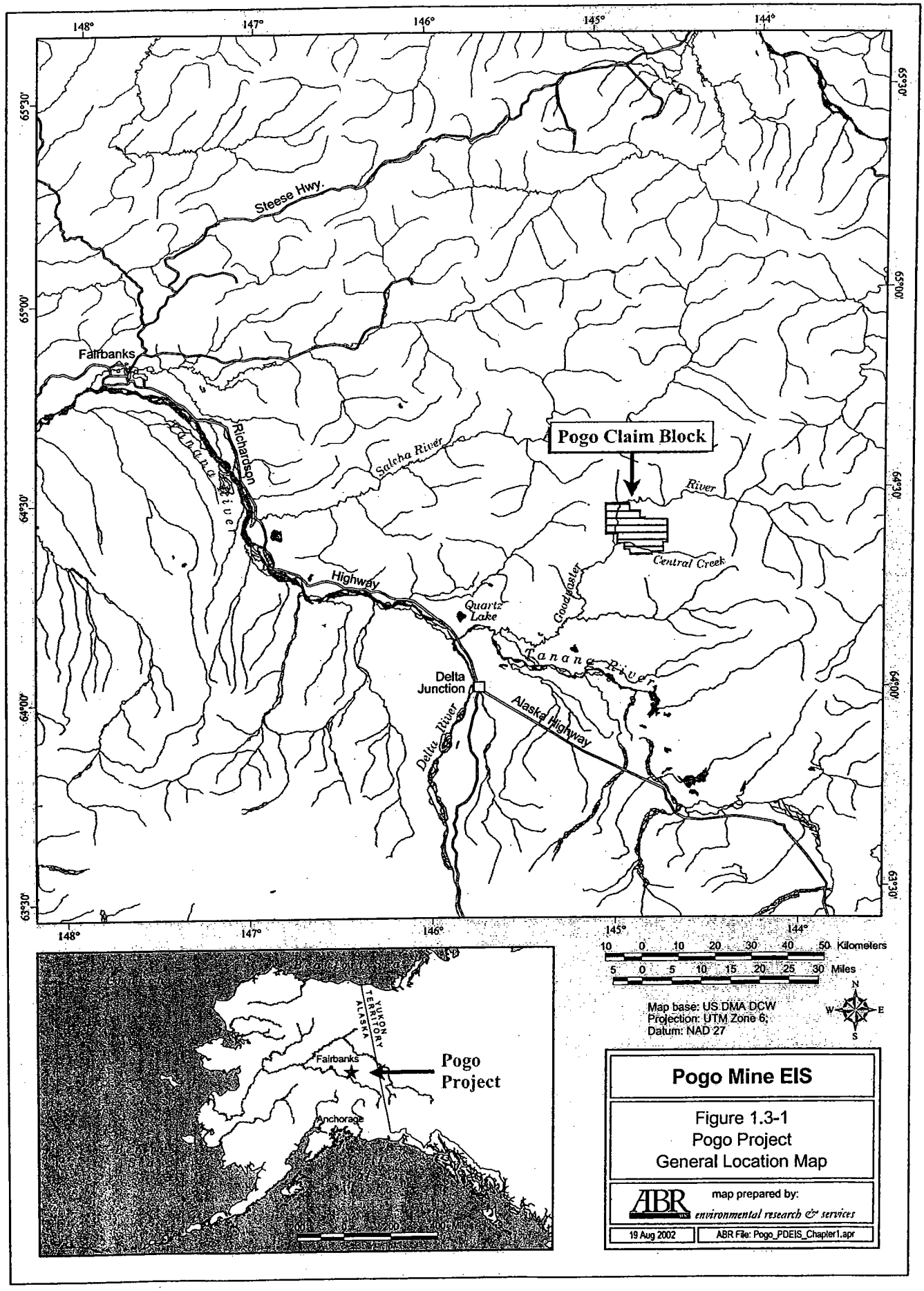

Pogo Mine EIS

Figure 1.3-1
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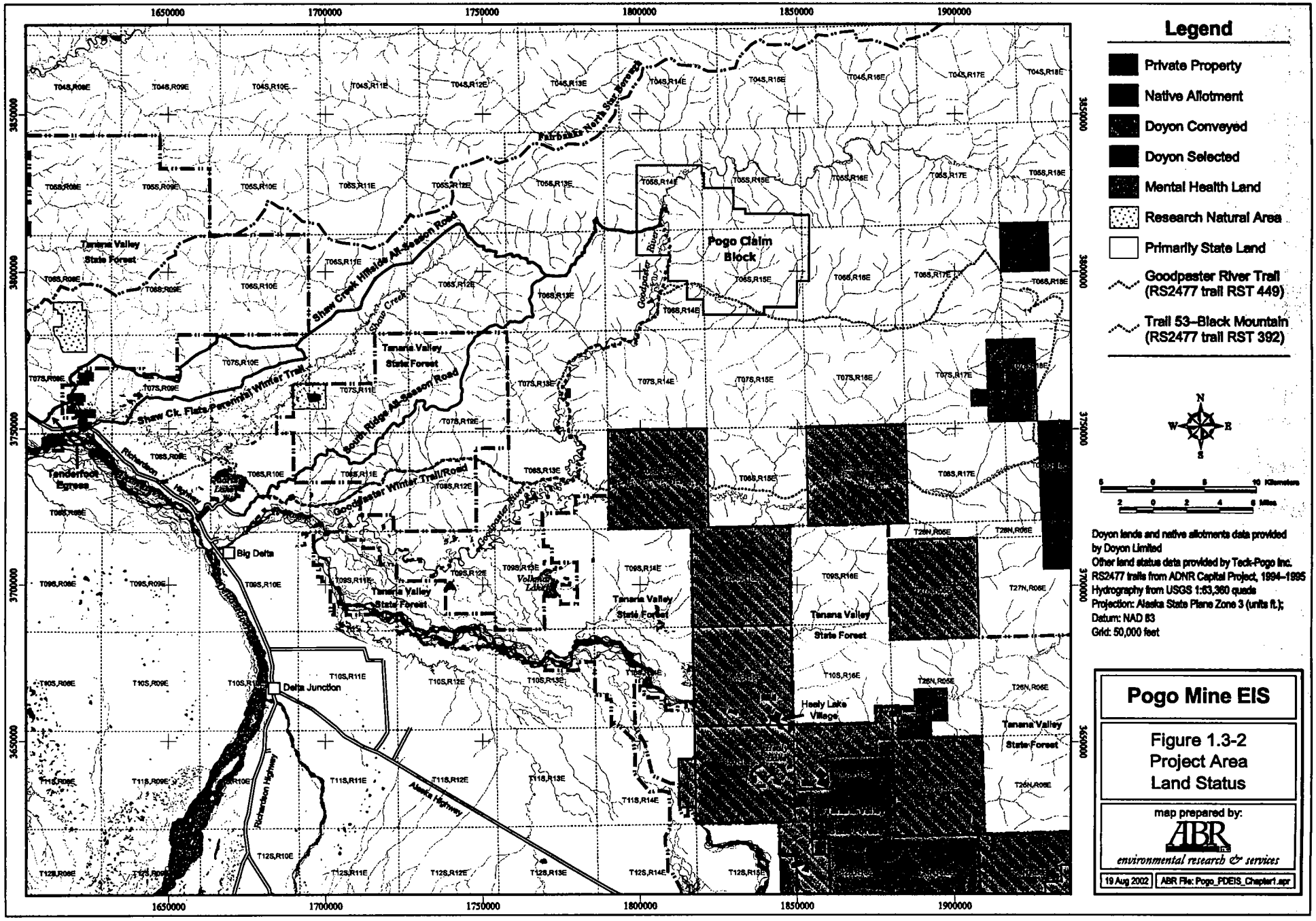
General Location Map

map prepared by:
ABR environmental research & services

19 Aug 2002 | ABR File: Pogo_PDEIS_Chapter1.apr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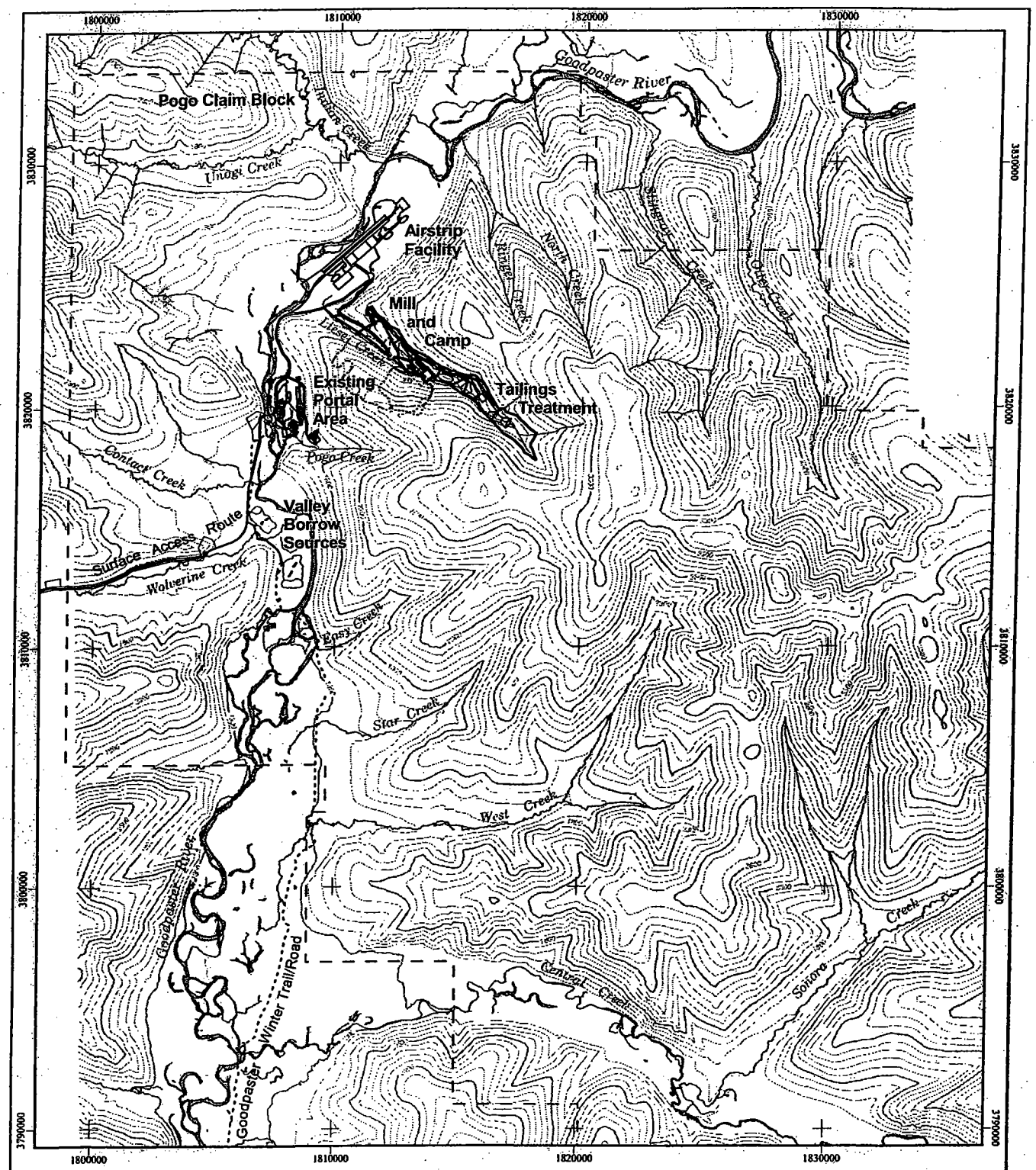

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N W E S

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0.5 0 0.5 1 Miles

Pogo Mine EIS

Figure 1.3-3
Pogo Mine Site Area

map prepared by:
ABR environmental research & services

19 Aug 2002 | ABR File: Pogo_PDEIS_Chapter1.apr

APPENDIX C.3

Draft Essential Fish Habitat Assessment

Pogo Gold Mine

Goodpaster River, Alaska

This essential fish habitat (EFH) assessment is largely drawn from the Pogo Gold Mine Project Environmental Impact Statement (EIS).

Project Description

Teck-Pogo Inc. is proposing development of the Pogo Gold Mine project in a currently roadless area 38 miles northeast of Delta Junction, Alaska. The mine would be located adjacent to the 140-mile long Goodpaster River at approximately its midpoint, river mile 70. The project would require a temporary camp complex and laydown area in the river's floodplain to support 200 personnel during the 2 to 3 years of construction. A permanent camp complex for up to 500 personnel during construction, and up to 250 personnel during operations, a mill complex, and storage areas would be constructed in Liese Creek Valley well above the Goodpaster Valley floor. The project proposes construction of a 49.5-mile, all-season access road to supply the mine annually with 100 crew changes and an estimated 40,000 tons of materials and supplies. Both access options would require crossing the Goodpaster River near the mine site. A 3,000-foot airstrip would be constructed in the Goodpaster floodplain to supply construction, operation, and emergency needs.

The underground mine would operate 24 hours a day, seven days a week. It would produce between 2,500 and 3,500 tons of ore per day for at least 11 years to supply an on-site mill. The milling method would consist of grinding ore into a fine sand-like consistency, recovering gold through gravity concentration, concentrating the remaining gold and sulfide minerals by flotation, and recovering gold from the flotation process concentrate by cyanide vat leaching. The milling method would isolate the cyanide process from the environment. The method also would allow the separate production and handling of two types of tailings: the tailings from the flotation process and the tailings from the cyanidation process. The flotation tailings would account for approximately 90 percent of the total tailings produced and likely would contain very low levels of arsenic and sulfide mineralization. Half of these tailings would be filtered to remove water and trucked to a tailings storage area. The other half would be combined with all cyanidation tailings to make cement backfill that would be pumped back into the mine for support purposes.

The tailing storage area would be located in upper Liese Creek Valley and would be a surface dry stack. Tailings would be a compacted unsaturated "mound" of fine material mixed with developmental rock and would have minimal propensity for drainage in the near term, and a tendency to move toward zero drainage long term. Seven million tons of tailings and developmental rock are expected over the life of the mine. All surface water runoff and seepage from the tailings as well as the entire mill and camp complex would be collected in a recycle tailings pond (RTP) behind a dam below the storage area. The area is seismically stable with the added benefit that Liese Creek disappears into a wetland complex that is not directly connected to the river.

Water management for the project would be based on maximum recycle, minimal use of fresh water, and control of all site runoff. The primary water requirements would be for process water

for the mill and potable water for domestic needs. Recycled process water, mine drainage water, and surface runoff captured in the RTP would meet mill requirements in most years. Water from two groundwater wells would be used for domestic supply and for processing when the other sources are inadequate.

The central features of the control system for surface water would include a major diversion ditch on the hillside above the tailing storage facility and the RTP. The system is designed to separate all waters potentially in contact with project facilities or mineralized/chemically processed rock and tailings from waters considered "non-contact" that can be safely discharged without treatment. The diversion ditch would capture surface waters flowing into the Liese Creek drainage from above the tailings storage area and mill complex and would divert these waters as a stormwater flow into Liese Creek below the RTP dam. Inflows to the RTP would consist of "contact" waters from spring snowmelt, stormwater runoff, seepage from the tailings, and excess mine water that could not be used in the mill due to abnormal conditions such as a plant shutdown.

The RTP design would permit water storage of 40 million gallons, and operating levels would provide storage for the 100-year, 24-hour intensity storm event. Excess RTP water above the operating level would be treated and discharged the Goodpaster River through an off-river treatment works. Effluent from domestic use would be treated in a package treatment plant and discharged to the Goodpaster River. All treatments of discharge water would be designed to meet or exceed federal and state criteria and standards.

Analysis of Effect To EFH

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and the 1996 Sustainable Fisheries Act, an EFH consultation is necessary for species included in management plans of the North Pacific Fisheries Research Council. The Goodpaster River supports three such species, chinook, chum, and silver salmon. Juvenile silver salmon have only been found during early summer in the lower 2 miles of the river, more than 60 river miles below the mine site. These most likely spawned in the Delta Clearwater River, which flows into the Tanana River 8 miles upstream of the mouth of the Goodpaster. The Goodpaster likely affords these species a resting and feeding area during their outmigration to the sea. As such, and because of the downstream distance of more than 60 miles, the project would have no impact on silver salmon.

While both chinook and chum salmon use the Goodpaster in the vicinity of the project, differences in their biology and distribution would affect the extent of potential project impacts. Chinook salmon spawn, rear, and overwinter in a 90-mile reach of river encompassing the project area. Approximately 70 percent of spawning and, presumably, rearing and overwintering habitat, lies below the project site. Adults arrive in mid-July and spawning occurs over a gravel and cobble substrate in depths of 1 to 3 feet during a 3-week period ending in mid-August. Adults die after spawning. Eggs incubate over the winter, and hatching occurs from the end of March through mid-April. Fry emerge from the substrate in May and typically remain in the river for 1 year before outmigrating as smolts the following May. Juveniles occupy a variety of habitats in the main stem, side channels, sloughs, and some tributaries throughout the project area, but prefer the main stem. Of the two tributaries directly affected by the project, Liese and Wolverine creeks, juveniles are only found in the lower mile of the latter where the all-season access road would be sited.

Chum salmon have been found to only spawn in a length of river ending 6 to 15 miles downstream of the mine site. Adults arrive a week or more behind Chinook, and spawning is

complete by the end of August. Like chinook, adult chum salmon die after spawning. Eggs hatch from the end of December through January. Fry emerge from the substrate sometime in April and immediately outmigrate starting at ice-out in late April and May. Thus, no chum are in the river from late May to August.

Because of the design (siting, closed-cycle processing, runoff control), and enforcement of state and federal permit requirements and regulations, project operations would cause insignificant impact to the essential aquatic habitat of the EFH species under expected or "normal" conditions. Under some abnormal conditions, however, such as construction of drainage and containment structures, transportation accidents involving fuel or mine reagents, process failures, or severe storm events, singly or in combination, and depending on the timing, location, and duration of the event, major impacts to habitat, fish, or both could occur. Impacts would come from erosion during construction or from flooding of access roads and facilities, which could cause sedimentation of spawning sites, channel alterations, or both, and from runoff or discharge contaminated with metals and sulfides affecting growth and survival of eggs and fry. The nature of these abnormal events and the dilution of contaminants downstream of the point source, however, would only temporarily and locally affect habitat. Chum salmon would be least affected because their habitat is well downstream of where the impacts would occur. In a worst-case scenario for chinook, which would have to be specific in nature and timing, a spawning failure (egg death), young-of-the-year fish kill, or physiological changes to behavior/development would affect only a portion of one year class.

Proposed Mitigation

Teck-Pogo Inc. plans to mitigate potential impacts to aquatic habitat of the Goodpaster River by siting the mill and camp complex out of the Goodpaster floodplain; controlling and managing runoff from the mill and tailings storage sites; using a closed-circuit gold recovery process; using wells instead of river water; discharging treated wastewater to an off-river treatment works; designing the RTP in Liese Creek Valley for the 100-year, 24-hour event; and using a bridge to cross the Goodpaster River. Federal and state laws pertaining to habitat and fish protection and construction suggest further mitigation. Floodplain development should be limited to absolute necessities, such as access roads and gravel pits, because runoff and erosion control is impossible during a flood. Ideally, the proposed airstrip should be located out of the Goodpaster Valley floor. Other location options, however, are not feasible. Use of crushed mine nonmineralized developmental rock where feasible instead of mined gravel would minimize size and number of gravel pits on the valley floor. To the extent possible, storage and laydown areas during construction and operation should be located within the water management system in Liese Creek Valley.

Federal Action Agency Determination

On the basis of the scope and nature of impacts expected from the project and the mitigation measures identified above, no substantial adverse individual or cumulative effects on EFH are expected in the project area.

The following special conditions should be included in permits to ensure that habitat designated as EFH in the Goodpaster River is protected:

1. All work in the Goodpaster River must be approved by the Alaska Department of Fish and Game, and appropriate measures will be taken to protect fish and fish habitat when working in the waterway.

2. Adequate sedimentation and erosion control devices – for example geotextile silt fences or other devices capable of filtering the fines involved – will be installed and properly maintained to minimize adverse impacts on waters and wetlands during construction.
3. No temporary fill (e.g., access roads or cofferdams) will be placed in waters or wetlands unless specifically authorized.
4. The water level of the RTP, when feasible, will be maintained at a capacity that could retain a 100-year, 24-hour storm event. To maintain the appropriate level, water will be treated and discharged per design and permit stipulations.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

May 19, 2003

Hanh Gold
NEPA Compliance Coordinator
US Environmental Protection Agency
1200 Sixth Ave. OW-130
Seattle, WA. 98101

Dear Ms. Gold:

The National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement for the Pogo Gold Mine Project. NMFS review was focused on Appendix F.3, the Draft Essential Fish Habitat Assessment (DEFHA). NMFS concurs with the Environmental Protection Agency's (EPA) Assessment that "On the basis of the scope and nature of impacts expected from the project and mitigation measures identified above, no substantial adverse individual or cumulative effects of EFH are expected in the project area." NMFS supports the special conditions in the DEFHA proposed by EPA. Please contact Larry Peltz at (907) 271-1332 if you have any questions.

Sincerely,

Jonathan M. Kurland
Assistant Regional Administrator
for Habitat Conservation

Appendix D

Other Coordination

D.1 U.S. Coast Guard

1. EPA letter to USCG (December 19, 2002)
2. USCG letter to EPA (April 28, 2003)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

December 19, 2002

Reply To
Attn. Of: OW-130

James Helfinstine
District Bridge Program Administrator
U.S. Coast Guard
17th Coast Guard District
P.O. Box 25517
Juneau, Alaska 99802

RE: Goodpaster Bridge Plans and Details
Pogo Gold Mine Project

Dear Mr. Helfinstine:

During our telephone conversation on December 16, 2002 you requested additional information relating to the Goodpaster Bridge construction, as proposed by the applicant, Teck-Pogo, Inc. Enclosed is the Right-of-Way (ROW) application submitted by Teck-Pogo in June 2002. Sheet 3 of 13 in Appendix C, Bridge Crossing Site Plans & Details, provides the information you requested:

- Vertical opening: 11.2 feet
- Horizontal opening: 65 feet C-C
- Elevation of water: 1323.8 feet
- Depth of water way: two to four feet between Pier 1-4
  zero between Pier 4 and 6
  one to two feet between Pier 6 and 7

I hope the level of detail and information in the ROW application is sufficient for the Coast Guard to make a decision of whether a bridge construction permit for this project is needed or if the construction can be covered under Section 10 of the Rivers and Harbors Appropriations Act. If a permit is needed, it is my understanding from our conversations that the Coast Guard would participate in the review and comment process of the upcoming draft Environmental Impact Statement (EIS) and a separate Coast Guard National Environmental Policy Act (NEPA) analysis would not be needed.

I look forward to hearing from you soon. Please feel free to contact me at (206) 553-0171 or by email at gold.hanh@epa.gov if you have any questions or would like to discuss this matter further.

Sincerely,

Hanh Gold
NEPA Compliance Coordinator

Enclosure

cc (w/o encl.): Bill Riley, EPA
Ed Fogels, ADNR
Leroy Phillips, USACE
Mike Smith, Michael Baker, Jr., Inc.
Karl Hanneman, Teck-Pogo, Inc.

U.S. Department of Transportation
United States Coast Guard

Commander
Seventeenth Coast Guard District

P.O. Box 25517
Juneau, Alaska 99802
Staff Symbol: (oan)
Phone: (907) 463-2268
FAX: (907) 463-2273

16590
April 28, 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

RECEIVED
MAY -1 2003
U.S. EPA REGION 10
OFFICE OF WATER

SUBJECT: Draft Environmental Impact Statement (DEIS)
Pogo Gold Mine Project, Delta, Alaska

Dear Ms. Gold:

We are forwarding information as discussed earlier in an effort to help you develop and evaluate navigational impacts on vessels if a bridge structure was constructed across the Goodpasture River near Delta, Alaska as proposed in the Pogo Gold Mine Draft Environmental Impact Statement. Describing the present navigation of the entire waterway and for the reach through the bridge site is the first step in this process.

I have enclosed several sources of information that may help you develop the draft EIS section dealing with navigational impacts. Other sources of information describing the present use of the waterway include the local offices (Delta) of the Alaska State Troopers, Alaska Fish and Game, State and/or Federal Parks Services, Native and Tribal offices, and various guided hunting, fishing and tourist services in Alaska that use the Goodpasture River. Thank you for the opportunity to comment on this important project.

James Helfinstine

J. N. HELFINSTINE
District Bridge Program Administrator
Aids to Navigation Branch
U.S. Coast Guard
by direction of the Commander

Enclosures: (1) Federal Contacts in Alaska for Navigability-Related Issues
(2) Navigational Evaluation

Appendix E

Response to Comments on the Draft EIS

A. Public Meeting Comments ..... Page A-1
B. Public Written Comments ..... Page B-1
C. Tribal Written Comments ..... Page C-1
D. Non-Governmental Organization Comments ..... Page D-1
E. Municipal Government Comments ..... Page E-1
F. Legislator Comments ..... Page F-1
G. Agency Comments ..... Page G-1
H. Applicant Comments ..... Page H-1

Introduction

The purpose of this Appendix E is to present the comments received on the draft Pogo Gold Mine EIS from the public, Tribes, and the agencies, and to respond to those comments.

The Pogo Gold Mine draft EIS presented feasible alternatives to the Applicant's Proposed Project, and described how the environmental impacts would differ between those alternatives. As a result of public, Tribal, and agency comments on the draft EIS, the body of this final EIS contains both changes to the draft EIS text as well as additional information not contained in the draft EIS.

While the draft EIS contained the draft major permits and evaluated the impacts of the different alternatives under consideration by the agencies, this final EIS does not contain the final permits for several reasons, including requirements in law that the final EIS be published before some formal records of decision (ROD) concerning the permits may be finalized. In many cases, therefore, final decisions on comments specific to one or more of the draft permits published in the draft EIS cannot be included in this final EIS because the agencies have not completed their final RODs. All such specific comments, however, have been reviewed by these agencies, and these comments will be fully considered in the agencies' decision-making processes. Thus, many of the comment responses shown later in this appendix merely acknowledge that such comments will be considered by the agency and its final decision will contain a discussion of that particular issue.

When a DEIS comment addressed a particular EIS issue, rather than a draft permit issue, a specific response has been given below. Such responses usually state whether changes have been made as a result of the comment, where those changes have been made, or where in the document information may be found that responds to a comment or question.

The draft EIS comment period formally began with a notice of availability published in the *Federal Register* on March 14 , 2003, and closed 60 days later on May 13, 2003, although

comments received after the closing date were considered and are included here. In addition, public meetings during which comments and testimony were taken were conducted in Delta Junction on April 29, 2003, and in Fairbanks on April 30, 2003.

The 184 commenters made a total of approximately 641 comments. These figures do no include comments received during government-to government consultations with Tribes, which are discussed separately below.

Comments Summary

Following is a compilation of the large majority of comments, grouped by subject. The parentheses bracket the number of commenters making that comment.

General

- Specifically support the Pogo project, or urge issuance of the permits. (73)
- The Applicant has conducted a good public involvement program. (17)

EIS Structure

- Document underrates total impacts to fish, wildlife and people for the preferred route, while understating the impediments listed for the other two options. (2)
- Document fails to analyze impacts of the Agency Preferred Alternative. (1)
- Document needs to include a description of navigation impacts from construction of a bridge across the Goodpaster River. (1)
- Document needs to include a description of the impacts of a controlled firing area for use of explosives. (1)

Mine Access Road

Route

- The Shaw Creek Hillside route option should be used. (98)
- Opposed to using the section line easement near end of Shaw Creek Road. (3)
- Use the South Ridge route option. (2)
- Do not use the Shaw Creek Hillside route option. (1)
- State should use a portion of a possible RS2477 ROW for construction of the mine access road. (1)
- State could pay to construct and maintain the first 25 miles of road so it can extend the road later if it wishes. (1)

Construction Standards

- What are road construction standards? (1)
- Any plans to pave the lower end of Shaw Creek Road? (1)
- Insure that Rosa, Keystone, and Gilles creeks are bridged. (1)

Management

- During mine operations, support public use of the road:
  - Before Gilles Creek:
    - Yes (9)

        - No (96)
    - Past Gilles Creek
        - Yes (7)
        - No (92)
- After mine closure, support public use of the road:
    - Before Gilles Creek
        - Yes (94)
        - No (10)
    - Past Gilles Creek
        - Yes (14)
        - No (92)
- Allow other resource developers to use the road. (13)
- There should be a no hunting buffer adjacent to the road. (5)
- There should be a buffer adjacent to the road with no tree cutting. (3)
- Who will manage and maintain the road? (3)
- Where would the security gate be located? (3)
- Very important that road be open for access to Goodpaster River crossing. (2)
- There should be a limited number of permits for public road use so people can access recreational areas. (2)
- Will other resource developers be able to use the road? (1)
- Should allow other resource users to construct laydown areas next to the road. (1)
- Close road to the public, but give the two current Shaw Creek Valley cabin owners lifetime passes. (1)
- If Applicant is responsible for road construction and maintenance, it should control who can use the road. (1)
- What are the impacts of temporary road construction camps and airstrips? (1)
- Should be turnouts along road if open to public use. (1)
- Drivers should us CB radios for safety purposes on access road segments open to the public. (1)
- Will the Applicant have to pay fuel taxes on the portion of the road not open to the public? (1)
- DOF does a terrible job of maintaining the roads it has put in. (1)
- Restrict public use after Pogo Mine closure with public campsite at end of road. (1)

Reclamation

- The entire road from the end of the existing Shaw Creek Road to the mine site should be reclaimed after mine closure. (9)
- Need to insure reclamation of the road past Gilles Creek. (4)
- When the road is reclaimed past Gilles Creek, the Gilles Creek Bridge should be removed. (1)

Richardson Highway Egress

- Concerns expressed concerning use of the existing Shaw Creek Road:
    - Safety. (4)
    - Traffic levels. (3)
    - Effects on surface water quality. (3)
    - Dust. (3)

  - Noise. (2)
- Should use the Tenderfoot route Richardson Highway egress suboption. (2)

Bus Station Location

- Should be located on the Richardson Highway and not near the TAPS crossing. (11)

Winter Only Access

- The winter only access option is not viable. (1)

Goodpaster River Winter Trail

- The purpose of using the winter trail is solely to accelerate mine development by several months to facilitate a more rapid return on the Applicant's capital. This is clearly unacceptable in view of potential environmental impacts. (1)
- Adapt North Slope winter road guidelines for depth of snow for Pogo project. (1)
- Will Goodpaster winter road require clearing and regrading? (1)

Air Access

- Retain airstrip after mine closure. (1)
- Project aircraft should not fly over occupied cabins in Goodpaster Valley. (1)

Railroad

- Mine access should be by railroad. (1)

Mining

- Is dynamite used in the mining process? (1)
- How will ore be extracted and processed? (1)
- Mine safety is important. Historically, 83 people have died the Fairbanks Mining District in gold mining activities. (1)

Development Rock Storage

- The DEIS does not include acid-base accounting or column leaching and humidity test data. (1)
- Data used to justify the selection of arsenic and sulfur thresholds for mineralized and nonmineralized development rock should be presented. (1)
- An analysis should be made of the potential environmental benefits and costs of disposing of more development rock underground. (1)
- There should be a schedule shown for emplacement of mineralized development rock in the dry-stack facility. (1)

Gravel

- Material sites should be developed with the long term objective of providing for fish stocking. (2)
- Crushing development rock, rather than mining gravel, appears to be the environmentally preferred option to produce gravel. (1)
- Crushing development rock would avoid impacting four acres of Conservation Priority Index high value habitats. (1)
- Material sites should be connected to adjacent waterways to allow use by fish. (1)
- Develop road accessible gravel pits as stockable fishing lakes; connect Goodpaster River Valley gravel pits to the river. (1)

Water Discharge

- Will the discharge volume affect the Goodpaster River? (3)
- Need water quality monitoring. (2)
- Discharge to injection wells rather than to a mixing zone. (1)
- Supports the innovative approach to water discharge. (1)
- Will the discharged water temperature have impacts? (1)
- Discharge must comply with water quality standards. (1)

Power Line

- The power line option is preferable to on-site generation. (3)
- The power line and road ROWs should be kept together. (3)
- The Shaw Creek Hillside power line route is preferable. (1)
- Will the power line up Sutton Creek cause resource impacts? (1)

Dry Stack and RTP

- It is difficult to understand why the lined dry stack and RTP is not the environmentally preferred option. (2)
- Supports the unlined dry stack and RTP option. (1)
- Should the freeboard of the RTP dam be increased so that any discharge would be diluted by storm water inflows before overtopping would occur? (1)
- RPT dam inspections should occur more frequently after heavy rainfall. (1)

Site Meteorology

- Net evaporation site data should be discussed. (1)

Water Quality

- An explanation is needed as to why iron is the only constituent to increase between the water treatment plant to the point of discharge. (1)
- Has thallium been considered as a pollutant issue? (1)
- Concerned about cyanide spills. (1)

Air Quality

- There is no discussion of summer dust control for the tailing dry stack. (1)

Noise

- There is no analysis of potential noise impacts on the mine workers' living area. (1)

Wetlands

- The alternatives analysis is deficient because it fails to analyze a tailings disposal location that does not involve a stream or wetlands. (1)

Fish

- Because a portion of the airstrip would be located close to the Goodpaster River, stream buffer retention measures should be taken to stabilize the banks. (1)
- Not enough information is known to determine impacts to some 20 streams that would be crossed in Shaw Creek Valley. (1)
- Ongoing data gathering is needed to fill in gaps regarding Shaw Creek tributary streams and crossing locations. (1)
- Will culverts be constructed to insure fish passage? (1)
- Need to armor banks to minimize flood damage. (1)
- Need to protect fish. (1)

Wildlife

- Need to protect the Fortymile Caribou Herd (8)
- Workers should be informed about seasonal movements of the Fortymile Caribou Herd in the project area. (1)
- A more detailed description of the Conservation Priority Index methodology should be included as an appendix. (1)
- There are peregrines nesting on the bluffs near Shaw Creek Road. (2)
- Public access on a new road will require changes in fish and game management (1)

Socioeconomics

- The Pogo project will bring jobs and economic benefits to the Delta area (35)
- Appreciates support of the Delta community for the Pogo project. (1)
- The Delta Junction/Tok area will form a borough and Teck should calculate this prospective expense in its business plan. (1)

Land Use

- State land should be sold along the mine access road to encourage settlement. (1)
- TVSF plan changed from winter access to all season access without notifying impacted residents. (1)
- Don't need access into all areas. Some need to be preserved as they are. (1)

Subsistence

- Mitigation for subsistence should be addressed under the Agency Preferred Alternative. (1)
- The document addresses non-Native subsistence uses under recreational hunting and fishing, which is contrary to state law. It should be pointed out, therefore, that some of these recreational users may consider themselves as subsistence users. (1)

Cultural Resources

- There are cultural resources along the Shaw Creek Hillside route. (2)

Recreation

- A public road after the Pogo project will enhance recreation. (1)

Cumulative Impacts

- Concerned about cumulative impacts. (2)

NPDES Draft Permit

- NPDES permit should be approved. (11)
- Arsenic should be regulated with a discharge standard in the NPDES permit. (2)
- Iron should be monitored at Outfall 011 weekly since it is not being monitored at Outfall 001. (2)
- NPDES permits are required both for the disposal of the mine tailings and development rock into Liese Creek and its surrounding wetlands, and for the discharges from that pile. (1)
- Nickel should be regulated with a discharge standard in the NPDES permit. (1)

ADNR Draft ROW Permit

- Need to clearly guarantee fully open and participatory public process in decision making for future mine access road management changes. (4)
- Final permit should include stipulations that ADNR will conduct a cumulative impacts analysis and review monitoring data collected since baseline to ensure that the access road and Pogo operations have not had significant deleterious effects on the Goodpaster River, Shaw Creek, and the surrounding environment. (2)
- Stakeholders in the Goodpaster Review Working Group should be increased. (2)
- If the first segment of the mine access road were open to public use: (1)
    - ADNR should monitor to determine degradation from off-road vehicles and to limit development of unauthorized trails.
    - All roads in the TVSF should be open for public use.
    - RV use should be permitted.
- The Applicant should reimburse the DOF for monitoring public use of the mine access road and assisting in resource management and protection. (1)
- Adopt 9” dbh definition for merchantable timber rather than 4.5” during ROW clearing. (1)

Competitive Material Sale and Land Lease

- State should not compete with private sector in selling gravel, or leasing land for maintenance and staging facility. (1)

ADEC Draft Waste Disposal Permit

- Solid waste permit should be approved. (13)
- At a minimum, the reclamation bond should be increased to $27,786,454, and possibly to $34,491,185. (1)
- The development mineralized rock cut-off level for arsenic should be 200 mg/KGCMC rather than the proposed 600 mg/kg. (1)
- All development rock brought to the surface should be monitored quarterly for acid-base accounting. (1)
- Unclear exactly when facility safety inspections would occur. (1)
- Greens Creek Mine permit standards for revegetation should be considered for the Pogo permit. (1)
- Permit should specify the next step if revegetation standards were not met. (1)
- All changes to the permit revegetation standard should receive public review. (1)
- The monitoring plan should clearly differentiate between development rock left underground and that brought to the surface. (1)
- The development rock mineralized/nonmineralized classification procedure should be clearly outlined in the monitoring plan and not just referenced. (1)
- Surface development rock storage should be confined to specific sites, with a time limitation on temporary storage. (1)

Reclamation and Closure Plan

- Local species, and collection of local seeds for revegetation, should be required, as well as use of the minimum amount of fertilizer for the shortest possible time. (1)
- Establishing a more natural drainage pattern would contribute to better restoration of the site rather than ditches outlining the edge of the dry stack. (1)
- Gravel pits should be reclaimed to avoid wildlife entrapment and promote wildlife habitat. (1)
- Supports reclamation plan. (1)

EIS and Permitting Processes

- The permit process needs to be streamlined. (3)
- Impacts would occur to Shaw Creek Road residents because they are small in number and can't mount a large scale protest. (2)
- How do the Tribes participate in determining permit stipulations? (2)
- With "…the support, funding and power of a billon dollar operation with the legislative and executive backing of State government…and the effect this project will have on the local economy, I envision this process much like a steam roller plowing over an ant." (1)

Government-to-Government Consultations

In addition to the oral and written public, agency, and Tribal comments described above, a government-to-government meeting was held in Fairbanks on April 30 with representatives of four potentially affected Tribes and four federal and state agencies.

At this meeting, Tribal representatives raised the concerns and questions below about several aspects of the proposed project as described in the draft EIS. By the nature of the meeting, most of these concerns and questions were responded to at the time they were raised by the agency representatives, with references to those places in the draft EIS where more detailed discussions could be found.

1. How will the mine's water discharge affect fish?
2. What will be the cultural impacts of the mine access road?
3. How will caribou be affected?
4. Will agencies seriously consider Tribal concerns?
5. There will be impacts from the road on traditional subsistence use areas.
6. The Healy Lake Traditional Council opposes any of the road being open to public use.
7. What monitoring will be done by ADNR to control trespass on closed portions of the road?
8. What will happen to the road after the mine closes?
9. Where will wastewater discharge monitoring occur?
10. Are there any benefits from the project for residents of Dot Lake and Healy Lake?
11. Some Tribal members have been working, or training for work, with the Pogo project.
12. Applicant needs to get word out better about possible jobs and training.
13. Are there any other local benefits other than jobs?
14. The Applicant has been a good neighbor and helped in an emergency situation at Healy Lake.
15. The Applicant has been working very closely and well with the community.
16. What impact would the road have on wildlife?
17. How many new hunters would use the road?
18. Has there been an analysis of impacts if DOF were to build a road up Shaw Creek Valley?
19. How much of the road would be reclaimed after mine closure?
20. Are there any Native Alaskans with land in the Tanana Valley State Forest?
21. How would the road be reclaimed?
22. Can the Applicant's bond be renegotiated in the future?
23. Will there be a domestic dump site a the mine?
24. Has there been any consultation with the Tribes concerning waste disposal?
25. What is the Applicant's position on road reclamation?
26. Where have the DEIS public meetings been held?
27. The applicant has actively tried to have local people on the project.
28. It would be easier for village residents if these meetings were held in the villages.
29. The Applicant has been in contact with the Tanana Chiefs Conference (TCC) employment department, and TCC is working with appropriate villages for employment opportunities.
30. Appreciates the federal and state G2G consultation process.
31. Rural economic development is very important to keep the villages viable.
32. Would like to be able to comment on the road bridges after they are in place.
33. Will there be an effort to inform Tribes not present about issues raised during this G2G meeting?
34. How will the State treat the comments received during this G2G meeting?

Public and Agency Comments

Comments were received orally at the public meetings in Delta Junction (April 29) and Fairbanks (April 30), in writing on public meeting comment forms and by letter and fax, and electronically by e-mail. Each set of comments from one commenter, e.g., oral presentation by one person, one letter, or one e-mail, is referred to as a comment document. The comment documents were sorted into the commenter categories shown below, and within each category in alphabetical order. Then, each comment document was scanned and is reproduced later in this appendix. The oral comments received at public meetings are contained in the individual public meeting transcripts that also are reproduced below in Appendix E.A. When individuals commented in more than one way, e.g., at a public meeting and then followed up with written comments, all comments have been reproduced in this appendix. When virtually identical comment letters or e-mails were sent individually to EPA and the State, however, only one set of comments has been reproduced.

Commenter Category	No. of Commenters
A. Public meetings	
Delta Junction	20
Fairbanks	35
B. Public (individuals, companies)	99
C. Tribes	2
D. Non-governmental organizations (NGOs)	12
E. Municipal government	1
F. Legislators	3
G. Agencies	11
H. Applicant	1
Total	184

On each comment document (letter, e-mail), individual comments have been identified by a unique designation in the right hand margin using a letter to identify the commenter category (A through H as shown above), followed by a number identifying an individual commenter. This designation is then followed by a dash and then the specific comment number for that particular commenter. For example, the unique comment designation B46-3 indicates comment number three for commenter number 46 in the public (individual or agency) category.

Following each comment document reproduced below, comment responses are given that are keyed to each comment using the unique comment designation described above.

Appendix E.A

Response to Comments on Draft EIS

Public Meeting Comments

Delta Hearing, April 29, 2003 ..... Page A-2
Fairbanks Hearing (April 30, 2003) ..... Page A-26

Delta Hearing (April 29, 2003)

Commenter	Number
Beck, Dan	A13-1
Borell, Steve	A17-1
Donnellan, Barry	A15-1
Hallgren, Pete	A7-1
Hicks, Whit	A14-1
Knopp, Paul	A9-1
Mead, Irene Hansen	A11-1
Naegele, Jonas	A1-1
Naegele, Victoria	A16-1
Richards, Mark	A12-1
Unidentified	A2-1
Unidentified	A3-1
Unidentified	A4-1
Unidentified	A5-1
Unidentified	A6-1
Unidentified	A18-1
Unidentified	A19-1
Unidentified	A2-1
Walker, Robert	A8-1
Windsor, Jack	A20-1
Wolf, Robin	A10-1

Fairbanks Hearing (April 30, 2003)

Commenter	Number
Anderson, Mark	A31-1
Barrett, Paul	A49-1
Beedle, Joe	A40-1
Borell, Steve	A33-1
Brophy, Bill	A39-1
Bundtzen, Tom	A51-1
Cruz, Dave	A45-1
Davis, Ron	A54-1
Donnellan, Barry	A48-1
Fisher, Rex	A52-1
Fowler-Morris, Judy	A22-1
Freeman, Curt	A42-1
Gardner, Craig	A50-1
Hall, Ken	A23-1
Huber, Mark	A35-1
Kniffen, Margery	A21-1
Krauklis, Kevin	A55-1
Kupiszewski, Dan	A36-1
Matthews, James	A41-1
Milne, Clark	A24-1
Miscovich, Andy	A47-1
Mittlestadt, Cindy	A34-1
Moriarty, Kara	A37-1
Nason, Wesley	A30-1
Otis, Ben	A53-1
Otis, Buzz	A38-1
St. John, Jeanine	A32-1
Unidentified	A25-1
Unidentified	A26-1
Unidentified	A27-1
Unidentified	A28-1
Unidentified	A29-1
Vetter, Rudolph	A46-1
Williams, Orie	A44-1
Wright, David	A43-1

* * * *

POGO GOLD MINE PROJECT

DRAFT ENVIRONMENTAL IMPACT STATEMENT

PUBLIC HEARING

April 29, 2003
4:00 p.m. - 8:00 p.m.

DELTA JUNCTION COMMUNITY CENTER

Delta Junction, Alaska

* * * *

P R O C E E D I N G S

(On record)

A1 STATEMENT BY MR. JONAS NAEGELE

MR. NAEGELE: My name is Jonas Naegele. I live on Shaw Creek Road. And I'm just concerned about the safety on the road and how -- like me and my sister, we jog down the road or we bike down to Rosa Creek, and it could just happen that we're walking around and a car -- a giant mine truck comes around the corner and it could hit us. So that's all I need to say. A1-1

(Off record; 7:04 p.m.)

PUBLIC HEARING

MR. RILEY: Good evening, and thank you all for coming. My name is Bill Riley. I'm with the Environmental Protection Agency. I'm the mining coordinator in the regions the head office, which encompasses the states of Oregon, Idaho, Washington and the great State of Alaska. I'm very happy to be here tonight for this public hearing on the Pogo Gold Mine Draft Environmental Impact Statement, this is a full-meal deal, and associated federal and state draft permits, which are also included in the document. For the record, I'd like to state that we are beginning the public hearing for Delta Junction at 7:04 p.m. on April 29th, 2003.

As I said, I'm the regional mining coordinator. My name is Bill Riley. I'm here on behalf of John Iani, our regional administrator, who is the official responsible for the

Environmental Impact Statement and who's appointed me to be the hearing officer tonight. And with me from the Environmental Protection Agency are Hanh Gold in the back of the room, who is the EIS project manager, Cindi Godsey, way in the back of the room, who developed the draft national pollutant discharge elimination system, i.e., Wastewater Discharge Permit, that is in the Draft EIS, and Nathan Spees from our tribal office, over here, in Anchorage. Also, I wanted to introduce our town crier from the Army Corps of Engineers, Victor Ross. With him is Don Rice of the Corps. The Corps of Engineers is a cooperating agency on the development of the EIS. And I also want to introduce some folks from the State of Alaska, the Department of Natural Resources, Ed Fogels, who is the lead for the State of Alaska DNR and also a cooperating agency of EIS. And also I'd like to introduce Luke Boles with the Alaska Department of Environmental Conservation. Bob Loeffler, the chief of the Division of Mining of DNR -- Mining, Land and Water, excuse me. Chris Milles with DNR, also way in the back, and Jack Winters, who is Alaska Department of Fish and Game, way back on the table. And I'd like to also introduce, many of you may know Karl Hanneman representing our applicant, and most of you probably know Karl by now.

I want to briefly describe what we're going to go through tonight, and that is that we'll do a brief project overview. I believe most of you have been here already for our

open house session and were able to see some of the displays. Hopefully you've read at least the executive summary of the EIS, but Ed and I will try to give a brief presentation on the project and present with the preferred alternative, what the agencies are recommending in terms of permitting and going forward. And then we'll have a hopefully brief question and answer session for any folks who may have some burning questions about the project. Again, it's been our hope that we've been able to answer those in the open house session. And then we'll get to the heart of the program, which is to hear what you all have to say, to take public testimony on the EIS and associated draft permits.

So before we get into our little presentation, does anybody have any questions about the process? Again, I'd ask if you want to provide some testimony, that you sign up at the table. We're going to do the testimony in the order in which people signed up, and it doesn't look like we'll have to put any time limit on what anybody wants to say. Okay, the questions? All right.

Then let me just describe where we've been. The last time I was here was late September of 2000. We conducted a scoping meeting to introduce the project to people and hear what you had to say anybody what your concerns were, concerns of impacts, environmental impacts, and what we should focus on in the Environmental Impact Statement document. Since then

there has been a lot, and I mean a lot, of intensive study and analysis. Teck has been extremely busy generating quite a few reports. We've had an excellent consulting team helping us, one of whom is here tonight, Bill Ritter, but hopefully we can answer any questions you might have. And they have done an excellent job of the analyses of a lot of very complicated issues.

And one of the more complicated issues has been the water management. And actually what has happened is that as we've delved into the project and started analyzing and trying to predict what was going to happen with the water quality, it basically went to a complete project redesign by Teck, and it's actually come up with what we feel is a much better way to address water management issues and a significant shrinking of the overall footprint of the project, and actually we feel will probably save the company money in the long run.

But let me explain quickly some of the water options and then Ed will talk about some of the state permits and the solid waste access related issues, land decisions, since this all is state property. The options that we looked at for managing the water are sort of depicted on this graph. The original proposal was a soil absorption system, which was like a large drain field covering several acres that would allow the effluent, which would already have been treated in a three-step treatment process of high density sludge to a system to

precipitate metals, a lime softening and recarbonation process to deal with dissolved solids, get them out of the waste stream, and then finally a multimedia filtration step to get any suspended solids. So the effluent going to any of these three systems would already be pretty darn clean.

But what we found in examining the soil absorption system was that it wasn't quite meeting criteria for all the parameters at all times, and we had a difficult time managing the monitoring and compliance aspect of it. And in fact we wouldn't really quite feel we knew what was going on subsurface as the effluent was coming out of that soil absorption system, and there would also be some injection wells into the alluvium.

We also looked at a direct discharge option, basically a pipe to the river, in an area that has deep flowing water, a talus slope, no salmon spawning, and where we could in theory authorize a small mixing zone and have a permittable project. But a third option that we looked at and where we went in terms of the preferred option is an off-channel treatment port that would consist of two ponds dug into the gravel, and with the gravel would build the runway and the roads, et cetera, so these would be features anyway. But this allows the water to be run off of the river into these ponds, mixed with the effluent in a very controlled environment, and then released back to the river with essentially 24-hour containment capacity in the event of any kind of upset, so we feel we can control

the water quality much better through this system. So that's very briefly where we ended up with that.

And I guess I need to emphasize that, you know, water quality is our thing in EPA, and it's our Wastewater Discharge Permit that triggers our requirement to do an Environmental Impact Statement. And what we need to be able to do at the end of the day is demonstrate through the predictions analyses that this system will work, that the water quality criteria will be met, and that anyone who uses the river won't have anything to worry about. So that's basically a very brief quick overview of the water management issues.

I also wanted to just borrow from this graph, because I need to move back there to make sure that the microphone can pick up my failing voice. But this somewhat of an intimidating document and it's difficult to get all the way through. But if you have some questions about it, it's got a great index. And this particular graph I think is very helpful, in that it shows the different alternatives that were looked at for all the various components of the mining project. And in bold here are the options that the agencies selected as our proposed preferred alternative. So we kind of divided this world into not surface access related and surface access -- excuse me, access related components. And like I said, most of our emphasis has been on the water treatment system, but we've also looked at the types of -- if the tailings facility would need

to be lined; we don't think it really needs to. With the power supply, clearly bringing the power in via power line has much greater advantages than transporting a whole lot of fuel up to the project sites. So if you haven't really delved into the document yet, that might be one way to go at it.

So now I'm going to let Ed talk a little bit about the right-of-way issues, access issues, lease issues, and solid waste permit.

MR. FOGELS: Thanks, Bill. As Bill mentioned, my name is Ed Fogels. I'm with the Alaska Department of Natural Resources. And just to back up a minute, my job is to coordinate all the state permitting activity for this project. And because the Pogo Mine is on state land and the access is all on state land, the majority of all the permits and authorizations that need to be issued for the mine are state authorizations from the various agencies, such as DNR, Fish and Game -- excuse me, not Fish and Game anymore, probably from DNR, DEC, the Department of Transportation, amongst others. But, anyway, so my job is coordinate all that permitting activity. And what we have done is we've tried to integrate that with Bill's EIS process. And the EIS process is real involved, they're collecting a lot of data, so we're using that process to help us in our decision making for this mine. And it's been really helpful and we've gotten an awful lot of data and information on which to base our decisions. We've also

been able to coordinate public meetings such as this, and public notices, so that everyone only has to go to one set of meetings instead of two.

The big thing that we've done is we've taken the most important of the state decisions, the ones that need public notice, and we've included drafts of those in an appendix to the Draft EIS. So if you look at the second volume, the smaller of the two volumes, in the back of that book you'll find a couple of appendices that have all the state draft decisions in there, and those are probably our most significant decisions. And I'm going to really quickly run down the DNR decisions and then I'm going to let Luke talk about the DEC draft decisions.

But the significant DNR decisions that are in that document, we have a draft decision for the millsite lease, which is the surface land authorization that the mining company needs to do the surface facilities for the mine. And we also have the power line right-of-way decision, draft decision, which would issue a right-of-way for the power line, 43-mile power line corridor, 125 feet wide, that would support 130 kilivolt power line to supply power to the mine.

Also, we have a draft decision for the material sales needed to construct the road. The material sale decision would be for a competitive material sale for 470,000 cubic yards of material from a maximum of 23 different material sites spread

along the road, and those would be offered out on a competitive basis at some point in the future for the purpose of building that Teck road.

Also, we have a draft decision for offering a land lease, and that land lease would be for a maintenance staging facility for the mine. And this is where essentially the staff would come and park and then get bussed into the mine site. And the one thing we've done there is the applicant's original proposal was for a maintenance staging facility up by -- where their proposed road would cross the pipeline. And we've sort of been tossing around an alternative to actually have the staging facility down on the Richardson Highway, and the benefit of this would be to keep that shift change traffic from driving up the Shaw Creek Road and keep it down on the Richardson, and that in our view would help mitigate some of the traffic impacts to the residents of the Shaw Creek Road.

And then the final decision that's in the document there is the actually right-of-way decision for the road itself, and that's probably been one of the more important issues to this whole permitting process, and probably one of the more discussed decisions that we've had. Now, the company originally applied for what we call the Shaw Creek Hillside route, which is this route that's highlighted in yellow here, and essentially starts from the end of the Shaw Creek Road and goes up the northwest side of the Shaw Creek Valley and up over

1 the ridges and down into the mine right there. And their
2 original proposal was for a private exclusive right-of-way,
3 which meant that only Teck would be able to use it, with the
4 exception of some commercial activity, and they propose to
5 reclaim the whole length of that road. And so that's actually
6 alternative 2 in the EIS, and you can see that on the big chart
7 that I just lost somewhere. Oh, it's down there.
8 The EIS also analyzed two additional alternatives for
9 access to the mine, and one is called the south ridge route,
10 which follows the ridges to the south of the Shaw Creek Valley,
11 and follows the ridge lines all the way up and then kind of
12 coincides with the applicant's proposed route about here, and
13 then follows it to the mine. And then the third alternative is
14 the Shaw Creek winter flats trail, which is a winter only trail
15 for the first say 20 miles, and then it would connect up and
16 become an all-season road for the rest of the way. And the
17 idea with this trail would be to address some concerns and
18 having an option out there that would essentially melt down in
19 the summer, and so you wouldn't have permanent all-season
20 access back to the mine.
21 We evaluated all three of these alternatives in the
22 process here and we're continuing to evaluate them right now,
23 but we did come up with an agency preferred alternative in the
24 EIS right now, and this is our best guess of what we think
25 would work the best right now. And, again, we're taking

1 comments on all this so nothing is set in stone yet, but we did
2 agree with the company that the Shaw Creek Hillside route was
3 the best route. We felt that there were numerous disadvantages
4 to the south ridge hillside route; one, that it was up high in
5 the high country and it would be very difficult to maintain and
6 keep open in the wintertime, causing a lot of safety concerns.
7 And then there are also a few technical considerations for road
8 building conditions along the first part of that road corridor.
9 In addition, we looked at the winter trail, and our
10 thought process here was that the Division of Forestry already
11 has a planned approved road that roughly parallels the first
12 portion of the Pogo Road to Gilles Creek, which is about the
13 first 23 miles of the route. And so what we figured was if
14 Forestry is going to build this route anyway, why force the
15 company to use a winter route for that portion when there's an
16 all-season route right next to it anyway? So that really
17 didn't make a lot of sense, so that's in essence why right now
18 we're leaning to pick the route that the company originally
19 proposed.
20 Now, again, remember that the company originally
21 proposed a private road the whole way that would be reclaimed
22 the whole way. Well, because our Division of Forestry already
23 wants -- they have an approved plan for a permanent all-season
24 road for the first half, you know, we think that this is a good
25 idea. It would give the Forestry guys a chance not to have to

1 build this road, the company could build this road, and then we
2 can keep that road after the mine is done. So that's what we
3 propose, is to split the difference and keep the first half of
4 the road permanent and take out and reclaim the second half of
5 the road that goes to the Goodpaster River and to the Pogo
6 Mine.
7 And the other issue that has come up with this road is
8 that, again, the company proposed a closed road the whole way.
9 It would be only for mine use, with the exception of some
10 commercial use such as timber harvesting. Our Division of
11 Forestry, the land use plan for the Tanana Valley State Forest,
12 has a strong mandate for public access, and our preliminary
13 decision at this point is to try to figure out a way to keep
14 this first half of the road open to the public during the
15 mine's life. Now, the company does not agree with us. They
16 really think that they should be able to close this road for
17 the first half, and they have some valid points. There's some
18 valid liability concerns, there's some safety issues, there's
19 just the hassle factor for them having to deal with public
20 traffic on this first portion of the road.
21 So even though our preliminary decision on this is to
22 keep this open for the first half, we are looking at an
23 alternative management option in the decision, which would
24 close the whole thing to public use for the life of the mine,
25 and then once the mine is done, then we reopen this first part

1 to public use. So our draft decision at this point is to open
2 it, but we are taking public comment on that particular part.
3 That's something we're especially interested in hearing your
4 views on, whether you think this first half should be open or
5 closed to the public just for the life of the mine.
6 So that's essentially it for the right-of-way stuff. I
7 think I'm going to turn it over to Luke right now. And the
8 other state decisions that are real important that are in the
9 Draft EIS are DEC decisions, and there's a draft decision for
10 the solid waste permit and a draft 401 cert, which I will let
11 Luke explain.
12 MR. BOLES: Well, as Ed said, my name is Luke Boles and
13 I work for the Alaska Department of Environmental Conservation
14 out of the Fairbanks office. And we also have two draft
15 decisions contained in the appendix section of the EIS. One of
16 those is a draft decision to issue a solid waste permit at the
17 site for the disposal of the applicant's tailings and waste
18 rock, both in a surface dry stack facility and as paste
19 backfill in the underground portion of the mine.
20 Our other draft decision that we have in the appendix
21 section is, it's called a 401 certification. And what that is,
22 is that has to do with the NPDES permit that Bill talked about
23 a minute ago. And we have to certify that any discharges from
24 this facility will meet our state water quality standards, and
25 so that's the other draft decision. I'm the point of contact

for both those draft decisions if you have comments on them. So I think that's about it for ours.

MR. FOGELS: Thanks, Luke. And I'll just close for the state authorizations just by letting you know that in addition to these five decisions from DNR and the two decisions from DEC, there's a lot of other work that we have to do. We have to do what's called our plan of operations approval, which is our blanket approval for everything sort of, and it includes blessing the company's key documents, their reclamation plan, their operations plan, their monitoring plan. And so we're going to be working with the company over the next few months to really nail down the details, the engineering details of all their designs, and then looking at the reclamation plan to make sure that we all agree on how the mine site is to be reclaimed, and also to make sure that we all agree on the amount of the bond that's going to be in place to guarantee reclamation should the company not be able to take care of it. And right now the company has proposed a $27 million bond to cover all the reclamation to the road, the power line and the mine site, so that's a substantial chunk of change to cover that reclamation, and we'll be reviewing that on the state's side to make sure that, you know, we can show that it's an adequate sum. And that's all I have, Bill.

MR. RILEY: That was pretty brief, but hopefully you got the plan. You can see that we're really trying to present

a comprehensive package, integrating all the permitting requirements with our Environmental Impact Statement analyses. And at this time I would ask if anyone has any questions they'd like to ask any of us? Seeing none,.....

UNIDENTIFIED VOICE: Is there a liquid waste plan? I see a solid waste management plan, but what are you doing with the liquid waste?

MR. RILEY: The water management plan?

UNIDENTIFIED VOICE: Yeah.

MR. RILEY: Oh, yes, and.....

UNIDENTIFIED VOICE: Are you coordinating that?

MR. BOLES: That's the permit that Bill spoke of. It's called the National Pollutant Discharge Elimination Permit. It's issued by EPA and then the state plays a role in that. We certify that permit to ensure that it meets out standards.

UNIDENTIFIED VOICE: I'm sorry, I'm talking about the blackwater.

MR. BOLES: Oh, the domestic discharge is also included in the NPDES permit, and the plan for that currently is to put that through a package treatment plant and discharge it to the Goodpaster River.

UNIDENTIFIED VOICE: Okay, thank you.

MR. RILEY: Yeah, good question. That's actually a good question.

UNIDENTIFIED VOICE: I have a question about the mine

water management chart you had over there, with the top agencies' preferred alternative. Just with a pond system, what do you do when it's really cold? Is icing a problem? Is the water somehow heated because it's moving? I feel like that's a valid question. If it's 40, 60 below zero, what are you doing with the ponds?

MR. RILEY: Well, I think it will be deep enough to have some water to -- it won't freeze to the bottom, and that it will be moving through fast enough. And there's also the potential to hold water back in the recycled tailings pond up in Liese Creek Valley. There's also the capacity, if need be, to store some water in the mine itself, but that's obvious not the preferred way, but it is a concern we're looking into. Anyone else? Yes, sir?

A2 UNIDENTIFIED VOICE: I just have a question for Ed. But on the option of whether the road would be open to the public in the very beginning until (inaudible - away from microphone), there's (inaudible) I can see a problem right now with maintenance on the road going through there, and there's an option there that considered possibly a two-year kind of a transition, an area for the public. Rather than have somebody drive in there with a motorhome and meet a road grader with a tanker behind it on a corner, couldn't possibly some of the problems be foreseen by not opening it up for the first couple of years to the public? And I know it's going to be hard to A2-1

maintain the first couple years. There's going to be an awful lot of..... A2-1 CONT'D.

MR. FOGELS: And that's a good point, and maybe I should clarify that. If the road is to be open to the public, it will be closed a lot, especially at first probably during construction. While the road is being constructed and while the mine is being constructed, there will be an awful lot of -- there will be a lot more equipment and traffic on that road during that time period. I think we'll work with the company to probably have periodic closures, and probably quite frequent for the first portion of the road. So I think that even though they're a generally open to the public scenario, there will be a lot of flexibility to work with the company if they think that there's a specific hazard or a condition, that we'll work with them to work on appropriate restrictions of public travel on that.

UNIDENTIFIED VOICE: And where would the gate be when you do have you closures? Is that going to be at the Richardson Highway, or farther up..... A2-2

MR. FOGELS: Well, it would have to be off the Shaw Creek Road somewhere. Shaw Creek Road is a public road, so it would probably be right there where any egress from Shaw Creek Road would happen.

UNIDENTIFIED VOICE: And basing a guard there at the gate, or..... A2-3

MR. FOGELS: Probably would have to do something like that, yeah. We haven't really gotten down to that level of detail yet, but.....

UNIDENTIFIED VOICE: It would be nice to have -- I would think to have an option out there that, okay, it's a public road, it's probably going to be a public road. Even though you want it to be a public road, it passes to (inaudible - away from microphone). A2-4

MR. FOGELS: I think some of that is sort of addressed in how the decision is set up with a lot of flexibility to close the road for conditions and for certain purposes, but you might want to submit a comment to that effect. I think that would be good.

UNIDENTIFIED VOICE: And if there's a two-year transition period, at least is something (inaudible). A2-5

MR. FOGELS: Well, my guess would be for the first couple of years there'd be an awful lot of -- I mean, it's going to take -- Karl, it probably would take about two years to do the bulk of the construction, anyway, right, and most of that time I think that the road is going to be in a position where it probably won't be ready for public use. But, again, that's a level of detail that we haven't quite gotten to yet, and public comments on that are definitely appreciated.

MR. RILEY: I just want to make a comment that the next steps after the close of the comment period, which is May 13th,

is that we'll begin drafting a final EIS, and we'll include in that responses to all the comments and all the testimony, so we will get back to you. Also, I should mention that one draft permit that is not in the EIS but that will be out for public review sometime this summer is the Corps of Engineers, section 404, the Clean Water Act, dredge and fill permit, so you'll have a chance to look at that, too. But if all goes well, we're hoping to have the final EIS late summer and the final permit decisions either at that time or shortly thereafter. Any other comments or questions?

A3 UNIDENTIFIED VOICE: Who's going to be doing the monitoring of the off-river water treatment and soil samples and discharge from the river? Is it going to be someone from Teck or Pogo, or is it going to be state, or who's going to monitor? A3-1

MR. RILEY: The standard practice is that permitees are required to do monitoring according to the permit requirements, generally weekly and possibly daily samples, depending on the parameters. Those have to be -- those analyses done by a certified lab and then we do at least annual inspections of the facilities and look to make sure that -- I mean if there's any falsification of data.

UNIDENTIFIED VOICE: That's what I'm getting at.

MR. RILEY: Yeah, that's a felony. That's serious business.

UNIDENTIFIED VOICE: Money makes people commit felonies, that's for sure. A3-2

MR. FOGELS: The other thing I should mention too is that all the DNR millsite leases have a provision in there for a five-year environmental audit, and that's done by a third party contractor that comes in that's not related to the state or the company, and they're specifically tasked for looking at all the monitoring procedures and how they're conducting business. And so that's another check; that's another way we get to verify that they're doing what they need to do. The millsite is a serious issue if anyone falsifies, so it's usually not a problem.

A4 UNIDENTIFIED VOICE: I have a question. How much water are you going to be putting into the river, adding into the river during operation, like..... A4-1

MR. RILEY: The simple answer to that question is that the treatment plant would have a capacity of 400 gallons per minute.

UNIDENTIFIED VOICE: So potentially 400 gallons a minute during the operation?

MR. RILEY: Yes.

A5 UNIDENTIFIED VOICE: What's that going to do to the river ice and the temperature of the river? What's the temperature of the discharge going to be in comparison to the winter river temperature, and what's that going to do? A5-1

MR. RILEY: Do you remember the - I'm looking at Cindi - the temperature?

MS. GODSEY: Well, it would be off-river (inaudible - away from microphone) system. The ratio between the treated water and the river water is going to be about 25 to 1, so by the time that the water gets to the river it's going to be pretty much the same temperature as what the river was to start with.

MR. RILEY: There's also a more complicated answer to that question, which is that our regulations limit the discharge to the net precipitation. We have 100 percent recycle requirement in the effluent, so it's not a once through type system, that the annual precipitation is above and beyond net precip, or net evaporation, rather, falling on the treatment works up in Liese Creek valley is what they're allowed to discharge, as well as the mine drainage. Then they'd be less than 400 gallons a minute.

UNIDENTIFIED VOICE: Does this all take into consideration for breakup at this time of year when the ice jams, and the water that's going to go not necessarily in the banks, go out of the banks? A5-2

MR. RILEY: I'm sorry?

UNIDENTIFIED VOICE: The flooding.

MR. RILEY: Right. Are you concerned about the flooding affecting the off-channel treatment works?

UNIDENTIFIED VOICE: All of the stuff; on the strip, the airstrip, the settling ponds, all of the stuff that's involved. A5-2 CONT'D.

MR. RILEY: Well, it will require some monitoring, et cetera, but those are good comments to submit.

A6 UNIDENTIFIED VOICE: Is the armory part planned yet for the ponds and the strip and fuel containment area there? Is that armory part planned to keep it above flood level? A6-1

MR. FOGELS: It will be. I think that that's sort of the next level of detail we have to get to. Right now we're looking at analyzing the impacts from the conceptual design, and right now we're working with a company to get more detailed engineering drawings for all the facilities, and that would include stuff like how they're going to armor it. But I do think that the company has looked at the flooding potential in the valley, I mean I know that they have, so they have evaluated that.

MR. RILEY: Karl?

MR. HANNEMAN: The existing drawings that we have submitted on the details of the off-river system do include armoring, both on the inlet and the outlet channels, and an estimate of flood validations.

MR. RILEY: And I think, Victor, wouldn't that be in your permit, in the 404 permit, the dredging and filling and placement of those structures?

MR. ROSS: We're not quite to that detail yet.

MR. RILEY: Other questions? Okay. Well, we're pretty much on schedule. It looks like we have ten or so people who have signed up to provide some testimony, but I would also say that any of you who decide later that you'd like to provide some testimony, if you could just let Hanh know in the back of the room and we'll make sure we take your testimony in the order that you signed up. So first up will be Pete Hallgren. Let me just check in with our court reporter. Are you picking things up okay?

COURT REPORTER: I need to have them come up here.

MR. RILEY: If you don't mind, anytime you have to speak into a microphone, if you could at least get in the neighborhood of one so it's picked up.

STATEMENT BY MR. PETE HALLGREN

A7 MR. HALLGREN: I'm Pete Hallgren. I'm the city administrator for the City of Delta Junction, and I'm here tonight representing the city council. In short, we recommend that you approve their permits rapidly and let them get busy building the project. Pogo is located inside the same proposed borough as the City of Delta Junction, and we're the closest road connected municipality to it. Delta Junction welcomes underground mining to our community, both for economic benefits and because miners and their families fit right in with Delta. The city has worked closely with Teck Cominco for years and A7-1

applauds their unwavering determination to operate a workers' man camp with four-day on, four-day off work schedules that go a long way to assure that miners and their families will live in the Delta to Fairbanks area.

Specifically, the city generally endorses the agency preferred alternative. I will only speak on the access. I've got several ideas on the access. We favor the all-season Shaw Creek Hillside route. A7-2 We are making no statement at this point concerning use of the road and whether it be open to the public, how far, with one exception, and that being that we do want the road open to use for access to the state forest and for logging in the state forest, as permitted by the state. A7-3

Second, the city also favors locating the bus station at the Richardson Highway; three reasons, safety entering and leaving the highway, particularly at shift changes, it would hold down unnecessary traffic noise and dust for Shaw Creek Road residents, and it would reduce maintenance needs. A7-4 And, B., we favor the Shaw Creek Hillside power line. A7-5 So the city council will be considering an official resolution along these lines that is meeting Tuesday, and we welcome the project and hope it goes forward soon.

MR. RILEY: Thank you. Robert and Jeannette Walker. You've got a maybe down there. Would you care to make a statement?

MR. WALKER: I have some concerns I'd like to consult

with you about. Would you like me to talk just from here?

MR. RILEY: Can you hear that okay, or would you like him.....

COURT REPORTER: He's a bit far away. I need him to go.....

MR. RILEY: Yeah, if you wouldn't mind just coming up to either the front of the room or the side here. That's good.

A8 STATEMENT BY MR. ROBERT WALKER

MR. WALKER: We live in the area where this road is going to be going through; in fact, it comes very close to our homestead out there above Shaw Creek. Our primary concern is our water supply that we have, which is different than most people having that. We tried to drill a well, but we found out that we were sitting on top of at least 360 feet of sand, not a bit of rock, and our well was a failure. We had to give it up because it was under pressure. You couldn't separate the sand from water and the sand came up the casing. A8-1 So Freddy Cook, as good a well builder as he was, agreed with us that it was a failure and we had to give it up.

Well, we get our water from our own property, and it's a series of springs that break out of a very abrupt hollow there. And we don't know how this road might affect our watershed where water comes from north of there. And we're just wondering if, in the event of say an accident with a fuel truck, an oil spill or something, whether that would

contaminate our water supply, and if something like that would happen that would contaminate our water, what recourse would we have as far as remedying the problem.

And, now, we're not against the building of the road in any way, we know this is progress and we like to see development in Alaska, but we just want this to be taken into consideration in building the road, and the possibilities that if something did happen, that we would know what to expect from the outcome. A8-1 CONT'D.

One other things that doesn't as closely affect us, but since we've been in the area a lot of years, the neighbors we do have, although they're not really close to us there, we did use the Shaw Creek Road for access for a good number of years until the pipeline was built. And then we worked out a deal with Alyeska to use four miles of the pad to get into our place, which was much more accessible, because we had to travel through mostly impassable areas before that. But having use the Shaw Creek Road for access and knowing what it's like and all, and this is greatly going to impact the people on the Shaw Creek Road, and anything that can be done to alleviate the problem there of the traffic and dust and so on, we're all for it. A8-2

And we've heard discussed about the possibility of putting a staging area out at the highway rather than up there near the pipeline, which the original plan was, and I just want A8-3

to say that we feel that having lived in the area and knowing what the situation is like, that we believe that it's a better plan and we'll have less of an undesirable impact on the people there in the area. However, I don't know, even with the traffic that may be there even with the staging area out at the highway, what dust problem and that sort of thing would be like. And of course it would be best with a paved road by there. We lived in an area for a period of time in years past where dust was a terrible problem. When traffic would go by it would put a layer of dust all over everything on our property. And so, anyway, this is just my two cents about it, and you can just take it for what it's worth. A8-3 CONT'D.

MR. RILEY: Thank you very much. John Dufendach? Did I say that right?

MR. DUFENDACH: Yeah, I'll wait.

MR. RILEY: Paul Knopp?

A9 STATEMENT BY MR. PAUL KNOPP

MR. KNOPP: Well, I'm here on behalf of Deltana Community Corporation, and also Delta Regional Economic Development Council. And basically it says most everything that we've said in both is included in the Delta Regional Economic Development Council, and I'll just read that letter to you and it pretty much covers it.

That council is comprised of quite a various number of the groups around town, and I'll just list those out ahead. We

have an Agricultural seat, Natural Resource and Development seat, a Business Development seat, Deltana Community Corporation seat, and the City of Delta Junction, Tourism, Chamber of Commerce, Social Development, Delta-Greely School District, and a Regional Planning Director. And I'll go ahead with the letter.

Delta Regional Economic Development Council is a nonprofit organization that represents most of the economic and social service interests in the greater Delta Junction area. The DREDC works to coordinate efforts to expand the local economy and improve the quality of life in the region. The DREDC comments reflect a comprehensive position of the community.

It is the position of DREDC to support the proposed mine permit, as summarized in the preferred alternative on pages 5 through 37 of the Draft EIS published on March 2003. A9-1

DREDC also supports the alternative management option, as stated in the Pogo EIS, appendix D(3), with minor additions. This option is both reasonable and most likely to maintain the quality of life in the area with the least negative impact on residents that live nearby. The economic benefit of the project will affect the Delta region for many years, and it is our estimation that strictly controlling the road corridor will minimize the alternation of the current land use and reduce the environmental impact to the area. A9-2

We would like to see the preferred alternative permitting with the following additions. The road corridor is to be closed at the point of new construction to use other than the mine related and logging traffic. A 660 foot aesthetic buffer should be left on each side of the road corridor. This buffer should not be logged or quarried. Any alternation to the use of the closed section of the road must come to the public for comment. Additional permitting should be required to alter this use. A9-3

An employee parking area will be permitted and constructed at the Richardson Highway intersection or nearby along the Richardson Highway, instead of further up the Shaw Creek Road. A9-4

The entire road and power line corridor should be closed for hunting and access to hunting by a motorized vehicle for a half mile on each side of the entire length of the road that will be constructed. A9-5

We recognize and appreciate the extensive efforts the agencies have committed to this process, and any further comments needed, will contact our council. Thank you.

MR. RILEY: Thank you. Robin Wolf?

A-10 STATEMENT BY MS. ROBIN WOLF

MS. WOLF: I'm Robin Wolf, and I'm an intern at the Delta Mine Training Center, and I'm also the mother of seven. And for what I've seen of this process, I think Pogo Teck has acted in a responsible manner towards the issues that have come up. I also believe this would be a great benefit, not only to A10-1

my family but to the community. Thank you.

MR. RILEY: Thank you. Irene Hansen-Mead?

A11 STATEMENT BY MS. IRENE HANSEN-MEAD

MS. HANSEN-MEAD: I'm right here. I'm close to the microphone. I don't think I need to stand up. My folks came to the Delta area in 1939. In the '40s my father was a registered guide here. In 1948 he was with the surveyors that surveyed for the Alaska Railroad to come through the area. But I look forward to jumping on that train and going down through Canada. I haven't been able to do it yet. But Governor Murkowski has talked about -- he's been working on the railroad project for the last four years. There's a possibility that it could take missile components to Fort Greely for the missile thing they're having out there now, that will be a great place for people to get jobs.

I'm all for the Pogo Mine. I'm all for mining in the Goodpaster. There were miners in the Goodpaster way before I was born. But I would like to see the company look at the possibility of the railroad, rather than the road to Pogo. I hate to be the bad guy here, but I feel that, you know, the railroad would help the farmers. It would go down through Canada, and it would help the missile program, and I would like to see it help Pogo, and maybe Pogo help the railroad, rather than this road. Thank you. A11-1

MR. RILEY: Thank you very much. Mark Richards?

A12 STATEMENT BY MR. MARK RICHARDS

MR. RICHARDS: Yeah, I would like to see the project go and help people out for jobs around here. As far as the road is concerned, for safety sake I think it should be closed during the life of the mine. That's it. Short. A12-1 A12-2

MR. RILEY: Thank you. Dan Beck?

A13 STATEMENT BY MR. DAN BECK

MR. BECK: My name is Dan Beck, and I'm a 27-year resident of the community, and I'm here representing only myself. I've only worked for the school district. I'd like to voice my support for the project. I think Teck has done an admirable job in putting things together. The federal and state agencies have done their jobs. I'd like to see the Hillside route. I'm also in support of closing the road to traffic, and also limiting any kind of hunting, fishing, in conjunction with the project. I've spent a lot of time on the Goodpaster River, up to where Pogo is at and beyond, and it's a pretty pristine area and I'd like to see it stay that way. A13-1 A13-2 A13-3

MR. RILEY: Thank you. Whit Hicks?

A14 STATEMENT BY MR. WHIT HICKS

MR. HICKS: I'm Whit Hicks. I'm just representing myself now. I do work for the Delta Mine Training Center. I definitely support this project and the opportunity for development. I commend the agencies on doing a good job. From my perspective, it seems that you've covered the bases very A14-1

well. I want to echo the request to consider an aesthetic buffer up that road, considering we're talking about something that will be permanent and property of the people of Alaska, so let's leave a good wide berth there for whatever we decide to do with it in the future. That's it. A14-2

MR. RILEY: Thank you. That's everyone I have on my lists.

A15 STATEMENT BY MR. BARRY DONNELLAN

MR. DONNELLAN: I'm Barry Donnellan. I live in Fairbanks, and I don't want anybody to think I'm an interloper. I just happened to be here in town tonight and thought I'd drop by and attend the meeting. I've been involved in mining now for over 40 years in one capacity or another, which is longer than a lot of people in this room have even been alive. And I've been following this project and the work that the company is doing, and I can honestly say, as a professional in the mining industry, it's a very, very conscientious job and I think the company deserves the support of the local community here. Thank you very much. A15-1

MR. RILEY: Thank you.

A16 STATEMENT BY MS. VICTORIA NAEGELE

MS. NAEGELE: My name is Victoria Naegele. For nearly five years I've lived 240 feet off a winding narrow dead-end road on 40 acres, 20 miles from the nearest town. My kids have to go three miles just to catch the bus. Our nearest neighbors

are a half a mile on either side of us, both retired couples. When the wind is just right we can hear our farther neighbors, they're a mile away, we can hear their cows mooing or their dogs barking. That's really what life is like at my house. The noisiest thing around is my daughter's gander. But most of the time it's just the birds and us, and if you listen you can hear some noisy trucks coming down the Richardson Highway.

According to figures in this document, that after construction the noise will go up just a little at my house, because I live on Shaw Creek Road, if you haven't figured that out. According to their numbers, it should be like sitting in a quiet living room when the mine traffic goes by. I'm not sure how they come up with that number. They say that light auto traffic at 100 feet is 50 decibels. Like I told you, I'm 240 feet off the road. And they say that there will be up to - I'm not terribly organized here - 180 vehicles; two 30-minute periods every four days, during each of which 180 vehicles will travel that road. A16-1

Do you know how long it would take for us to see 180 vehicles on Shaw Creek Road? I'm guessing that right now we have about 5 to 10 round trips for everybody who lives on that road, in any given day; 5 to 10 round trips. And they're talking about two 30-minute periods every four days, during each of which 180 vehicles would travel that road. I ask you, which of you would like to live on Shaw Creek Road, in my nice A16-2

house on 40 acres, well away from anybody? Because, you know, it could be arranged, if you'd like to live in my house. That's what they're proposing for my road.

Now, a lot of you, or at least some of you, were there a few weeks ago, or a few months ago - I've been out of town - when the issue of Denali Training site came up, and the noise, the fire, the danger, the things you were concerned about there, valid concerns, something that was happening on federal property, on property that they had used for a training center, but you didn't want them doing what that property was there for. But I'm subjected to endless traffic down my winding narrow road because of this project. A16-2 CONT'D.

Do I have a problem with the mine? I have no problem with that mine; they can have their gold. I have a problem with them using my road, my road, which Mr. Fogels seems to have forgotten that it is my road. He said, and I quote, "A private road the whole way and reclaim it the whole way." It can't be a private road the whole way, Mr. Fogels, because the first two and a half miles are my road. It can't be Pogo's road; it's my road, I was there first.

Are we going to keep it open so that there can be people down there, whether the mine is still going or not? Well, that's another issue entirely. But I want you all to consider what life is going to be like on my road with that kind of traffic through there. It puts a different spin on the

project; not on the positive economic benefits there will be for the Delta Junction, not on the good things it will do for the State of Alaska, on how it will impact me, and the Newmans, and the Thorns, all of which who will live there and have absolutely no economic benefit from that project. A16-2 CONT'D.

One other issue, and there are lots of other issues that concern me about the project, not the least of which is the water quality issue that was mentioned earlier. But I don't know how many of you have gone down Shaw Creek Road; obviously, I go down it every day. It's a nice road. They widened it about a year -- well, two years ago, now, I guess, and in some areas it's fairly wide. There's also very, very tight curves, blind curves. My husband got pushed off it one day when a belly dump decided it should come down the middle of the road instead of down the side of the road; totaled our vehicle. A similar incident happened without him managing going off the road in the same place a few months after that. Two months ago my neighbor nearly pushed me off the road, the same place. He was coming down the road with his semi. Oops, got a little over too far. He stopped and apologized. A16-3 A16-4

It's not the kind of place where you want one logging truck to meet one mining truck, let alone one small Subaru meeting a semi. I ask you to consider that. And I don't see DOT here, and I have a real problem with DOT, because they don't have a problem with this road, the way it is, being used

for my and Forestry traffic. Somewhere in this whole lineup somebody has forgotten that this really is not a private road for Teck, it's not a private road, it is a public road for the first two-plus miles and it will remain so, if any of us still want to live on it. Thank you. A16-4 CONT'D.

MR. RILEY: Thank you. Anyone else at this time who didn't sign up who would like to say something? Mr. Borell?

A17 STATEMENT BY MR. STEVE BORELL

MR. BORELL: Like Barry Donnellan, I'm an interloper, but I came specifically for the meeting. My name is Steve Borell. I'm the executive director of the Alaska Miners Association. And I figured I'd attend this one tonight and also in Fairbanks tomorrow and probably testify there, but you need to know I'm very pleased to see the support of the community. I very much appreciate the lady's comments just before me. But you need to know that throughout the United States there are not many places that a mining company feels they're welcomed, and it's really heartening to see your response, and not just here at a meeting tonight, but your response to me over the years has been extremely positive and I just very much appreciate that, so it's more of a statement to the community than it is to EPA and the state. Thank you. A17-1

MR. RILEY: Thank you. Any other takers? Well, if not, I want to thank you once again. It's a really good turnout, good comments. And we'll be around for a few minutes

if anybody wants to.....

MR. SPEES: We can take written comments, too, if folks want to.....

MR. RILEY: Very good. Nathan pointed out that we do have forms in the back if anybody -- some people are very comfortable getting up in front of crowds speaking, and others may have something to say but would rather do it in private, so if you want to just jot something down, or even just come over and chat with the court reporter, you could do that as well. And I want to thank you all very much for coming and you'll be hearing from us in a few months. Yes, sir?

MR. LOEFFLER: I'm (inaudible - away from microphone) want to comment, but is this going to pack a lot of weight, like for the number of people that talk (inaudible), versus the people that want (inaudible)? So far I haven't heard a lot of people that are in favor of the road starting (inaudible). But the people here stood up and commented, is this going to pack weight with the agencies, or just because they're quiet and aren't against the (inaudible)? Because I'm definitely against the road being a public road, and yet I'm not making a comment. But would it help if the people (inaudible).....

MR. RILEY: Well, it's always helpful when people comment and express themselves, and of course we consider public opinion along with other technical information. But this is a DNR issue primarily, the road access management

options, and if you don't comment we don't know what you think, so it's helpful to tell us, and it's helpful to tell us in a way that is on the record. So it doesn't need to be eloquent, it doesn't need to be long, it doesn't need to be detailed. You could stand up and say, I think this, or write it down, but it is helpful if you do it one way or the other.

UNIDENTIFIED VOICE: How about written versus oral?

MR. LOEFFLER: They're the same.

UNIDENTIFIED VOICE: Okay.

MR. LOEFFLER: Written, oral, fax, e-mail, you know.

A-18 UNIDENTIFIED VOICE: Yes, I don't know who to direct this question to, but who would control the public on that road if it was the first 20 miles, like somebody from Forestry wants? Who would control the public on that road, and how would they control it? A18-1

UNIDENTIFIED VOICE: Would there be a speed limit on..... A18-2

UNIDENTIFIED VOICE: But I think we're pretty close to Pogo's closest neighbor right now, and the snowmachine traffic that comes through there now, just since that project came, that's why I'm wondering how you're going to control the people on the road? A18-1

MR. FOGELS: You mean if the road were to be.....

UNIDENTIFIED VOICE: Public road.

MR. FOGELS: .....gated off?

UNIDENTIFIED VOICE: No, it's going to be public road.

MR. FOGELS: If it were a public road, then it would be a public road, and there would be periodic closures for, say, times when the company was doing construction, or if during spring breakup when the road is in poor shape, there would have to be some kind of gate somewhere.

UNIDENTIFIED VOICE: Would the state do that, or would it be up to Teck? A18-3

MR. FOGELS: It would be a collaborative effort. We would have to collaborate with the company to decide when it was open and when it was closed.

UNIDENTIFIED VOICE: And what would the state do with the people that are behind the gate? A18-4

MR. FOGELS: We're just going to have to work that out so that we can figure out barriers and ways. I mean that's a hard one. Everyone knows that gates are really hard to maintain, but.....

UNIDENTIFIED VOICE: I guess really my thing is I feel very strongly it should be closed to the public, because you can't -- I don't think you can control the public. I know it's state land and so forth, but I don't know how you'd do it. A18-5

A19 UNIDENTIFIED VOICE: Even with a close gate, it's going to be public. We live up the pipeline area, and it's public. A19-1

MR. FOGELS: Well, keep in mind that the company will be using that road and will have a presence there, so that's a

lot different than a lot of other roads where DNR has tried to close a road and we haven't had much luck. But you're right, this is very difficult to close roads to keep people out, but there are things you can do and, you know, we would definitely work with the company to figure out ways to slow public access. And there are provisions in some of the decision documents that talk about trying to restrict public access on power line corridors, how to figure out ways to keep people from using the power line corridor, for instance, for access. I mean we can work with the company to come up with ways. They may not be perfect, but I hope they would help, anyway.

MR. RILEY: Other questions, comments? I think it's a wrap. Thank you very much.

(Off record; 8:05 p.m.)

A20 STATEMENT BY MR. JACK WINDSOR

MR. WINDSOR: My name is Jack Windsor. I've trapped in the Shaw Creek Valley for over 25 years, with a partner up until approximately 10 years ago when he died, and I've been the sole -- I guess a primary land user, is what Pogo has considered me. And I know every person that's been in the upper valley, from Gilles Creek on up, by name over the last ten years, and it's been less than a dozen people, and only like a single trip at a time. And the Fish and Game, I've worked with them a lot on it, on the moose population, and we're very concerned.

And I feel very strongly that the road should be kept as a private road for Pogo's use for at least a transition period for safety, and also to destroy the -- these are the breeding aged bulls that are in the upper valley, and they travel to both the Goodpaster and Salcha River Valleys in the later part of the season. And it's a real pristine area. A20-1

I feel very strongly that the road should be on the ridge, on the south ridge, but of course that isn't the preferred alternative. I just wanted to put it on record that I am opposed to the road being public at all, from the end of where the public road is now all the way, you know, to Gilles Creek. A20-2 A20-1

(Off record)

END OF PROCEEDINGS

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C E R T I F I C A T E

UNITED STATES OF AMERICA)
) ss.
STATE OF ALASKA)

I, Sharon D. Gaunt, Notary Public in and for the State of Alaska and Reporter with Liz D'Amour & Associates, do hereby certify:

THAT this transcript, as heretofore annexed, is a true and correct transcription from an audiotape recorded by me;

THAT I am not a relative, employee or attorney of any of the parties, nor am I financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal this 12th day of May, 2003.

Sharon D. Gaunt
Notary Public in and for Alaska
My Commission Expires: 09/03/04

COMMENT RESPONSE:

A1-1 **Naegele, Jonas:** Shaw Creek Road safety issues are discussed in Section 4.17.4. These concerns will be discussed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS

A2-1 **Unidentified:** Whether, and to what extent, the mine access road would be open to public use will be described in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS

A2-2 Location and staffing of the security gate will be described in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS

A2-3 Location and staffing of the security gate will be described in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS

A2-4 Whether, and to what extent, the mine access road would be open to public use will be described in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS

A2-5 Whether, and to what extent, the mine access road would be open to public use will be described in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS

A3-1 **Unidentified:** Draft water quality monitoring requirements can be found in Appendix B of the DEIS.

A 3-2 Thank you for your comment.

A4-1 **Unidentified:** Question responded to by EPA at hearing.

A5-1 **Unidentified:** Question responded to by EPA at hearing.

A5-2 The reader is directed to the discussion of water discharge for Alternative 3 in Section 4.1.3.

A6-1 **Unidentified:** How the off-river treatment works and airstrip facilities would be armored against floods will be described in ADNR's final Plan of Operations Approval, which will be issued after publication of this FEIS.

A7-1 **Hallgren, Pete:** Thank you for your comment.

A7-2 Thank you for your comment.

A7-3 Thank you for your comment.

A7-4 Thank you for your comment.

A7-5 Thank you for your comment.

A8-1 **Walker, Robert:** The agencies were not previously aware of the proximity of the road to the commenter's water supply. ADNR will develop mitigating measures to address this concern in its final decision for issuance of the ROW, which will be issued after publication of this FEIS.

A8-2 Potential impacts on residents of Shaw Creek Road have been analyzed in Chapter 4 of the EIS, and will be addressed by ADNR's in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

A8-3 Thank you for your comment. This issue will be addressed in ADNR's final decision for issuance of the competitive land lease, which will be issued after publication of this FEIS.

A9-1 **Knopp, Paul:** Thank you for your comment.

A9-2 Thank you for your comment.

A9-3 Thank you for your comment.

A9-4 Thank you for your comment.

A9-5 Closure of state land to hunting, and means of access for hunting, are regulated by the Alaska Board of Game through a separate process outside the scope of this EIS.

A10-1 **Wolf, Robin:** Thank you for your comment.

A11-1 **Mead, Irene Hansen:** The reader is directed to Appendix A1.2 (Option Screening Process), Surface Access, Type, for a discussion about the railroad option.

A12-1 **Richards, Mark:** Thank you for your comment.

A12-2 Thank you for your comment.

A13-1 **Beck, Dan:** Thank you for your comment.

A13-2 Thank you for your comment.

A13-3 Thank you for your comment.

A14-1 **Hicks, Whit:** Thank you for your comment.

A14-2 Thank you for your comment.

A15-1 **Donnellan, Barry:** Thank you for your comment.

A16-1 **Naegele, Victoria:** The sound levels and relative loudness values in Table 3.9-1 are considered accurate. The predicted sound levels at residences located near Shaw Creek Road have been recalculated (Tables 4.5-2 and 4.5-3) to reflect the reality of the existing 25 mph speed limit on the road, and are based on standard noise level evaluation and predictive procedures.

A16-2 The State of Alaska will do everything practicable and prudent to mitigate the possible adverse impacts to the residents of Shaw Creek Road (specific mitigation measures are discussed in this document). There will undoubtedly be some additional impacts on Shaw Creek Road residents, however, from increased traffic.

Shaw Creek Road is a public road that provides access to a large block of state land managed for multiple concurrent use, including mineral, timber, and other industrial development. It would be unrealistic for the residents bordering on wide spreads of state land to expect that such land would not be developed at some point. This is especially true given that resource development for these state lands has been contemplated for many years, beginning with timber planning in the 1970s.

The management intent for these lands was determined, after a public process, by the Tanana Basin Area Plan in 1985. Another public process further refined this management intent when the TBAP was updated in 1991. In addition, the 1988 TVSF Management Plan and its 2001 update also underwent a significant public process to determine management intent for these lands. The existing Shaw Creek Road itself was developed for access to agriculture, and has a history of commercial traffic from the onset.

DNR understands that regardless of mitigation measures, increased traffic on Shaw Creek Road will still impact residents to some degree. It would not be responsible, however, for DNR to prohibit all commercial uses of Shaw Creek Road and force resource development interests to construct separate access to bypass a public road. This would unnecessarily add costs to resource development projects and unnecessarily commit state lands for a duplicate function.

Every resident of Shaw Creek Road has either had ample opportunity to participate in these processes, or at least should have been aware of the State's management intent for these lands prior to purchasing property along the road.

A16-3 This concern will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

A16-4 ADOT/PF has determined that Shaw Creek Road can safely handle the increased traffic levels resulting from the Pogo project, and will work with ADNR and the Applicant to determine if specific mitigation measures could further increase public safety. DNR will take practicable measures to mitigate safety impacts from increased use in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

A17-1 **Borell, Steve:** Thank you for your comment.

A18-1 **Unidentified:** Segments of the mine access road open for public use would be managed like other public roads in Alaska. Segments of the road for use only by Pogo project-related traffic would be managed by the Applicant, in cooperation with the State.

A18-2 Speed limits on the mine access road open for public use would be set by ADOT/PF like other public roads in Alaska. Speed limits on segments of the road for use only by Pogo project-related traffic would be established by the Applicant.

A18-3 Segments of the mine access road open for public use would be managed like other public roads in Alaska. Segments of the road for use only by Pogo project-related traffic would be managed by the Applicant. There would be a collaborative effort between the State and the Applicant with respect to road closures.

A18-4 There would be a collaborative effort between the State and the Applicant with respect to managing prohibited public use of the mine access road past the gate.

A18-5 Thank you for your comment.

A19-1 **Unidentified:** Thank you for your comment.

A20-1 **Windsor, Jack:** Thank you for your comment.

A20-2 Thank you for your comment.

* * * *

POGO GOLD MINE PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT
PUBLIC HEARING

April 30, 2003
4:00 p.m. - 9:00 p.m.

CHENA RIVER CONVENTION CENTER
Fairbanks, Alaska

* * * *

P R O C E E D I N G S

(On record)

A21 STATEMENT BY MS. MARGERY KNIFFEN

MS. KNIFFEN: My name is Margery Kniffen. I live in Fairbanks, but I own property on Shaw Creek Bluff. It is my considered opinion that any road that services Pogo Mine from the Richardson Highway should remain accessible to the public after Pogo's use has been discontinued, and should not be subject to reclamation or to closure. Mr. Fogels just told me that the process is now that roughly 50 percent of the road will be open after the mine ceases to need that access, and roughly 50 percent will be closed, and that public hearings would be required to change that stipulation which is now currently in the permit. A21-1

I would suggest that maybe the permit should be reworked to say that public hearings would be required to close the road after Pogo's use was discontinued, as opposed to the current situation, which is in the reverse. And I am very concerned that that road, and any road that is built to access any natural resource, always remain open to the public after that use has been discontinued. Thank you.

(Off record)

A22 STATEMENT BY MS. JUDY FOWLER-MORRIS

MS. FOWLER-MORRIS: My name is Judy Fowler-Morris, and I am a landowner with direct interest in the route of the road

to the mine. We own land right after Shaw Creek Road, and I'm definitely against the section line easement route, and I am definitely against public access into that land, since that's family land and belongs to my children, and so it has emotional value, and we would like to keep it rural. The best I suppose I would like to see is the alternative management program on the west Rosa Creek side, but the most important thing is I would like it to be a private industrial road, and would not like it public, and definitely not the section line option. A22-1

(Off record)

A23 STATEMENT BY MR. KEN HALL

MR. HALL: My name is Ken Hall. I live here in Fairbanks at 2506 Kuskokwim. I just would like to go on record as being fundamentally in support of the Pogo project. The major issue and concerns appears to be the road access into the mine itself. I guess my preference would be no access beyond mine personnel on into it. Let Pogo go ahead, control the access on into the mine as an industrial road. I was born and raised in Fairbanks and I have traveled up on the Goodpaster River since I was a young kid. I love the area. However, we need to establish the fact that Alaska is open for business. We need a good diversified economy. This is an opportunity to develop an industry in Alaska, show the rest of the world that we're open for business, and to develop a valuable resource that provides good jobs, and will help support communities in

A23-1

A23-2

Alaska, and give some good employment to the citizens of Alaska.

(Off record)

A24 STATEMENT BY MR. CLARK MILNE

MR. MILNE: Hi, I'm Clark Milne from Fairbanks. I'm a local civil and environmental engineer, occasionally associated with mining work. And I'm very pleased to see this project come to the stage in this measured and deliberative public process that's prescribed by NEPA. I'm convinced that knowledgeable Alaskans have been involved in designing this workable and justifiable mine process, and I definitely believe that we won't regret it moving through these phases.

The expenditures made for and in order to operate the mine will help our economy, besides the construction, and just as importantly, I think that the output of the mine, the gold is crucial to modern life. It's not just for expenditures that we're doing the work, it's for its output, which is important to our society; not just jewelry and minor uses, but other important aspects like electronics and art and other factors of modern life.

I think that the project will enhance the use of the state lands, open things up, and this is exactly with Governor Murkowski pledged to do, to help effectuate use of state lands to provide good jobs, well-paid jobs, and help cover some of Alaska's fiscal needs.

In terms of specifics, which is just as important on this kind of testimony, I encourage the adoption of the alternate management option for exactly the reasons that are well stated in the materials that have been disseminated, both Teck Cominco and also the Greater Fairbanks Chamber of Commerce resolution. There will be additional revenues that accrue to the state by using the alternate management option, and also lesser impacts for the initial period of the mine use.

Refining that a little, I think that the safety aspect cited is in fact real. The road planned to be built would be narrow and appropriate to general one-way use, relatively low vehicle frequency, and that does make a difference. I also believe that it is true that the substantive environmental and social impacts would be much less noticeable, and although some people would disagree, I think it's worth waiting the decade or so for more general use before moving ahead with any opening of the first half of the road, because the resultant impacts of opening that first half would probably be very well understood by the time the mine has finished using the entire road. And then if it's a good idea to open it up, it could be opened then; if it's not a good idea we'll know about it and won't have jumped in. A24-1

In terms of the rights to open it, since it's not being built with state funds, I don't think there's an inherent right to immediate access for people that would just like to do

additional hunting or traveling around. I am quite glad that there would be availability of timber management access and other use of state lands to generate funds and revenues, and I'm personally glad that the access would then provide -- or the road would then provide eventual access. And I think the weight of community opinion at the time that it is potentially open for public use would then call for an opening, but the existing owners and subsequent owners would have fair warning of that for something on the order of a decade. A24-1

I'm glad to see that most of the selections that were made, in terms of the access route, that Shaw Creek Hillside is definitely the appropriate and best route among the available alternatives, and I particularly sympathize with the choice of an all-season road instead of just a winter-only road. A24-2 I very much agree with the creation and the construction of the power line instead of using the option of on-site diesel generation. There would be much less impact and much less risk, in terms of fuel hauling and then storage on site. The electricity doesn't tend to be as polluting, and doing it at a central power plant is a better option than having another entire operation out at the mine. A24-3

I think the reclamation plan cited in the appendices is an excellent start and should be fully suitable until midway through mine life, or as reclamation is needed, when decisions can be made and properly taken from the facts at hand. A24-4

Recreation should be enhanced by the existence of the mine and the eventual opening of access. Just the focus on the area will help, and I think that very importantly the environmental consequences, as cited in the EIS, are in fact not significant and well within the bounds of reason for the significant benefits incurred. A21-5

The last point along those lines is, having an unlined dry stack and RTP should be just fine for this particular site and the rock chemistry involved. Thanks for the chance to comment. A21-6

(Off record)

PUBLIC HEARING

(On record; 7:03 p.m.)

MR. RILEY: I'd like to welcome you all here tonight to this public hearing on the Pogo Gold Mine Draft Environmental Impact Statement and the associated federal and state draft permits. I'd like to note for the record that we're starting this public hearing at 7:03 p.m. in Fairbanks on August 30th, 2003. My name is Bill Riley, I'm the mining coordinator for the Environmental Protection Agency's Region 10 office. Region 10 covers the states of Oregon, Idaho, Washington, and Alaska. And I'm here representing John Iani, our regional administrator, who has designated me to be the hearing officer for tonight's hearing.

With me from the EPA tonight are Hanh Gold, please

stand, project manager for the EIS; Cindi Godsey, who developed the National Pollutant Discharge Elimination System Draft Permit, or Wastewater Discharge Permit that's in the EIS. And I would also like to introduce our cooperating agencies, from the Army Corps of Engineers, Victor Ross, and from the Alaska Department of Natural Resources, Ed Fogels. Also here tonight with the agencies are Luke Boles with the Alaska Department of Environmental Conservation, Chris Milles with DNR, and Jack Winters from the Alaska Department of Fish and Game. And I would also like to introduce someone who's probably known to a lot of you, Karl Hanneman, who's been representing Teck-Pogo throughout this process.

What I want to do is just describe the program that we want to go through tonight before we get going so you know what to expect. And then what we'll do is Ed and I will tag team a little bit of a brief project overview, with an emphasis on the preferred alternative that's been identified through the Draft EIS process so far. This is the agencies' proposed preferred alternative. And we're going to do that in two parts. I'll talk about the water management issues, water quality, and the Wastewater Discharge Permit is what triggers our involvement, our requirement to enter into an Environmental Impact Statement process. So I'll explain those aspects, and then Ed, along with Luke, will describe some of the access related issues, and solid waste management and land use aspects of the project.

Following that we'll have a brief question and answer period. Our hope, our assumption is that you've all been here to see some of the exhibits and ask some questions and get clear on what's being proposed and where the agencies are in terms of the permitting process, but we will have time for some questions and answers. Then about 7:30 we would like to start taking public testimony on the record. That's why we're here, to hear what you all have to say about the project, about the Environmental Impact Statement, the draft permits, and where we as agencies are headed in terms of the permitting process. We've really tried to present a really comprehensive package in terms of not only the Environmental Impact Statement, the environmental analyses, but also as a project that would move forward to the permitting phase, you know, how it would be regulated so you could see how the project would be managed if it were implemented. So any questions so far about the process tonight? Okay.

Well, then, we'll launch into our quick project overview. Just by way of background, we began the EIS process in the summer of 2000 when Teck-Pogo applied for the National Pollutant Discharge Elimination System Wastewater Discharge Permit, the NPDES permit. We initiated an EIS scoping process in September of 2000 where we solicited comments from the public and tribes, agencies, as to what issues we should really examine in the EIS process, what options for the various

project components made sense to study in some detail. And then we began a very intensive study and analysis. Teck was extremely busy, and is still extremely busy generating quite a few engineering reports and analyses. We've had a great team of consultants working with us under the umbrella of Michael Baker, Jr., Incorporated, a lot of real Alaskan experts in various disciplines, only one of whom is here tonight, and that would be Kelley Hegarty, our public involvement coordinator. She's done a great job for us.

But in the course of doing the study and analyses and looking particularly at the water quality issues, it became apparent that the original proposal by Teck-Pogo had some water quality issues. Teck worked real hard to address those issues. It took some time, but basically redesigned the entire project and really shrunk the footprint down quite a bit, so most of the project facilities are located within Liese Creek Valley. They really worked hard to reduce the amount of wastewater that would need to be treated and came up with actually an entire -- well, together with the agencies, we came up with an entirely different approach for the water management, which I'll explain in a moment. And I guess I could also add, and I think Karl agrees with this, that this redesign in the long run will save the company a fair amount of money in both construction and operation.

So what I want to do now is just try to explain to you

1 briefly the water management issues that we've been wrestling
2 with and the options we looked at, and from the preferred
3 alternative perspective where we've ended up. Teck's original
4 proposal was to build a soil absorption system down in the
5 flood plain of the Goodpaster River, and basically this would
6 operate something like a drain field with the effluent, which
7 would be treated in a three-step treatment process; first of
8 all, a high-density sludge co-precipitation system to remove
9 metals from the waste stream, followed by a lime softening and
10 recarbonation step to remove calcium, magnesium, and reduce
11 total dissolved solids, and thirdly, a multimedia filtration
12 step to remove any residual suspended solids which could have
13 metals absorbed to them.
14 So it starts with the effluent coming out of the
15 treatment plant, which would treat both processed water from
16 the tailings disposal facilities in Liese Creek Valley, as well
17 as the mine drainage, and then that process water and mine
18 drainage would be discharged via one of these three options,
19 again, the first one being the soil absorption system, which
20 after extensive analyses indicated that there could be some
21 water quality issues, some parameters that wouldn't quite meet
22 water quality criteria. And we had some issues with
23 monitoring; it's basically a subsurface system, and from a
24 regulatory perspective we just didn't feel we could go with
25 this option.

1 The second option we looked at was a direct discharge.
2 It was a pipe to the Goodpaster River with a small mixing zone,
3 which in theory we could permit. But a third option that we
4 studied, and was actually an idea that DNR had come up with,
5 was to build these off-channel ponds and to discharge the
6 effluent into these ponds that would be screened off from the
7 river, and so there would be no exposure to any fish. The
8 effluent would be actually injected into a pipe and mixed in
9 the pipe, and then discharged to a secondary basin, and then
10 from that basin it would flow through a pipe with a gate valve
11 on it to the river. And the advantages of this system were,
12 aside from providing good mixing, and it would be about a
13 25 to 1 dilution, is that you'd have containment in this second
14 pond in the event of any kind of upset in the waste treatment
15 system. So you'd have about 24 hours containment in the system
16 and that would give plenty of time to fix the problem and
17 prevent any uncontrolled releases of untreated water to the
18 river. So this is the option we've gone with. Teck has
19 resubmitted an NPDES permit to reflect this redesign, and we
20 feel okay with that right now.
21 That's pretty much it in a nutshell for the water
22 issues. Ed, would you like to take over?
23 MR. FOGELS: Thank you, everybody. Again, I'm Ed
24 Fogels. I'm with the Alaska Department of Natural Resources,
25 and my job is the state's project coordinator for the state

1 permitting activity for the Pogo Mine. And because the project
2 is entirely on state land, with the access road and the mine
3 site on state land, a majority of the permits for this project
4 are state permits from the various state agencies. So what we
5 have tried to do in this process is to use the EIS process as a
6 tool to help us in our decision making. And a tremendous
7 amount of study has been put into this EIS, a lot of background
8 information, and it's tremendously valuable for us in making
9 our decisions and it only makes them that much stronger.
10 And so we've tried to piggyback along with this process
11 from the very beginning. We've tried to take the public
12 process for the state's decisions, plug them into the EIS
13 process, have joint public meetings, joint public notices,
14 essentially to simplify the process and to streamline it
15 wherever possible. Out of all these decisions that we have to
16 make and these permits that we have to issue, what we decided
17 to do is take the most important ones, the ones that needed a
18 public process, and we have drafted draft decisions of those
19 permits, and we've included them in the Environmental Impact
20 Statement that you have out there to review right now. And in
21 the appendices of the Draft EIS, which is the smaller of the
22 two volumes, you will find all the Department of Natural
23 Resources draft decisions and the Department of Environmental
24 Conservation draft decisions for this project, the real key
25 ones that need public process. So we're really interested in

1 getting public input on the DNR and DEC decisions as well here
2 tonight and during the public comment period.
3 I'm going to go over the DNR decisions here real
4 briefly and explain those, and then I'm going to let Luke Boles
5 from DEC touch briefly on his draft decisions in the DEIS. The
6 DNR has five draft decisions in the DEIS. We have the millsite
7 lease draft decision, and this draft decision would give
8 Teck-Pogo the millsite lease for the project, and this is the
9 surface authorization that actually lets them use the surface
10 at the mine site to construct a dry stack tailings facility,
11 the millsite, the camp, the airstrip, all of the facilities at
12 the mine site.
13 We have the draft decision for a right-of-way for the
14 power line, which would be a 43-mile, 125 foot wide
15 right-of-way for the 138 kilivolt power line that would supply
16 power to the mine. We also have the material sale draft
17 decision. This would be a decision that would allow us to do a
18 competitive materials sale disposal for materials to build the
19 road itself, and this materials sale disposal would consist of
20 23 different material sites and a total of 470,000 cubic yards
21 of material. And, again, this would be done in a competitive
22 disposal, but the purpose of these sales would be to build the
23 access road for the Pogo Mine.
24 Also, we have a draft decision in there for a land
25 lease, and this lease of land would be for a maintenance

1 staging facility for the mine, and essentially this would be
2 where the company would have their employees park and would
3 start the bussing to the mine site. And on this particular
4 decision, the company actually came and applied for a staging
5 facility partway up their access road, pretty close to the
6 pipeline crossing. And in discussing this with the company,
7 we've decided that there's actually an alternative site that we
8 would like to consider, which is a bus terminal down by the
9 Richardson Highway. And we feel, and I think the company might
10 feel this way, too, that the advantage of having the bus
11 terminal, if you will, down by the Richardson Highway is it
12 would eliminate all the shift change traffic from the Shaw
13 Creek Road, which is the short two-mile section of public road
14 that would begin the 49-mile road to the mine site. And this
15 would just reduce the traffic impacts to residents along Shaw
16 Creek Road. So, again, we would hope for public input on that
17 decision, on which one of those two parcels to actually lease
18 out.
19 And then, lastly, and maybe most importantly, is the
20 draft decision for a right-of-way permit, or right-of-way for
21 the actual access road to the mine. And this would be a
22 49-mile road, and this is where I'll get out my map here. And
23 this is one of the most important parts of this whole EIS for
24 us in evaluating the different road options. The actual EIS is
25 evaluating three different alternative routes to get to the

1 mine site. I'm going to go over them here really quickly. The
2 route highlighted in yellow here is the route that was proposed
3 by the applicant, and it's called the Shaw Creek Hillside
4 route, and it essentially starts from the end of the Shaw Creek
5 Road and follows the northwest side of the Shaw Creek Valley up
6 on the hillside, all the way to the mine, and goes over the
7 ridges over here, and then pops down into the upper Goodpaster
8 Valley to the mine site.
9 Another alternative was to include the first portion of
10 the road to be about 20 miles of a winter road, and this option
11 was included to have an option in there that would essentially
12 mean that there would be no all-season access to the mine. And
13 so this winter road would essentially melt out in summer and
14 there would be no summer access. Summer access would have to
15 be by air.
16 And then the third alternative was another all-season
17 road that would be along the ridges to the south of the Shaw
18 Creek Valley, and we've called this the south ridge all-season
19 road alternative. And we carefully evaluated all three of
20 these options, and what we did is in the Draft EIS we have an
21 agency preferred alternative, which we essentially agreed with
22 the company that the location of their proposed route was the
23 appropriate location. We looked at the south ridge route, and
24 this one is almost entirely up on ridgetops, up on the ridges
25 to the south, and we just all felt that this would be very hard

for the company to maintain this road in the wintertime. Operationally, it would present a lot of challenges, plus there were some geotechnical considerations for building the road in this early portion here. And those are some of the reasons we dropped that one, not from consideration, but we didn't pick that as the agency preferred alternative.

The other alternative, the winter road, we looked at that pretty closely and we decided that that was perhaps not the best choice either. And one of the main reasons for that decision is that the first portion of the road that Teck is proposing has already been proposed and approved to be built by the Division of Forestry for access for timber harvesting into the Tanana Valley State Forest. So essentially the first 23 miles of this road would eventually be built, regardless of the Pogo project. And so we're saying, well, why make the company take a winter road for the first 20 miles, when there's already going to be an all-season road there anyway; it seems kind of silly. So that's why we sort of dropped -- we decided not to pick the winter road as a preferred alternative. And that's how we wound up with the Shaw Creek Hillside route as the agency preferred alternative.

Now, the other thing that we had to grapple with here was the management of this road. The company, their proposal is for a private road for the entire length, and they propose that the entire road be reclaimed at the close of mining.

We've heard from both sides so far in the process, and we've had a fair bit of pressure from people, and I've heard that there is concern that there not be any additional access into the upper reaches of the Goodpaster River. And I think there are groups out there that would prefer no permanent access whatsoever, and that this whole road be taken out at the end of mining. And we also have heard from the other side, where there's a strong preference and a desire for permanent all-season access all the way back to the mine site.

What we've attempted to do here is to sort of come up with a compromise solution where we're going to split the difference. And our proposal in the draft decision is to have the first half of the road be public and permanent, and the second half of the road be private and temporary, and that's our proposal in the draft decision. And one of the things that we've heard loud and clear from the company, we understand the pros and cons, is that the first half of this road, by keeping it open to the public, it presents some challenges for the company. They're building this road, they want to use it for mining, and there are problems with that. There are liability concerns, safety issues; there are operational constraints for the company, and we understand that. Our purpose here is to see if there's a way to allow general public use of this first half of the road, in addition to letting the mine use it. So we're grappling with that right now, and we're

really interested to hear what the public has to say about that specific issue in particular. That's real important to us to get good public feedback on that portion there.

And I should point out, though, that even if the first half of the road were to remain public, we would give the company the discretion to close that road down for certain reasons, such as when they're going to have extraordinarily heavy traffic on that road, say for the first year or so during mine construction, there would be a lot of stuff going in and out of that road. It's perfectly reasonable to expect the company to shut the public out during that time. Also, perhaps seasonal closures when breakup conditions make the road soft, and that would definitely be -- that would be done also. So even under a public alternative here, there would be significant closures of that road; it wouldn't be open all the time. But, again, we're looking for public comment on that particular issue especially.

And that's all I'm going to say about the road right-of-way. That's the fifth draft decision that we have in the EIS. I'm going to let Luke talk for a few minutes about the DEC decisions and then I'll wrap up here.

MR. BOLES: My name is Luke Boles and I work at the Department of Environmental Conservation here in the Fairbanks office. And the DEC has two draft decisions contained in the DEIS document, those being the draft decision on the solid

waste permit, which deals with the deposition of tailings and waste rock, both above ground and as paste backfill at the facility, and then also deals with some groundwater and surface water monitoring at the facility.

And the other draft decision that I have in there, or that we have in there, I should say, is a 401 certification of the NPDES permit that Bill spoke of earlier. And what that decision is is that certifies that the discharges that result, as permitted in the NPDES permit, meet our state water quality standards. Now, those discharges are both a nondomestic wastewater discharge from the off-river treatment works, and also a domestic wastewater discharge from an on-site package plant. And part of that 401 certification also contains a small mixing zone as a result of the wastewater discharge, the treated effluent from the domestic discharge.

So my contact information is in the DEIS, and also I have some cards. I'll be around if you want to grab me. And the DEC is looking for comments on those two decisions. So I'm going to turn it back over to Ed.

MR. FOGELS: Thanks, Luke. I just want to wrap up my little spiel here by letting you know what DNR really has to do from here on out. Like I said, we have all these draft decisions. We're going to get your comments on those. We have a lot of other work to do with the company. As we get this project figured out and we're pretty sure on which alternative

we're going to be focusing in on, then we're going to start getting more detailed engineering drawings from the company and we're really going to be working on a lot of detail issues.

Right now we're working through the reclamation plan and trying to make sure that everyone agrees on how the mine site should look after reclamation is done. We have to issue what's called a plan of operations approval, and that's the DNR approval for all the company documents; the reclamation plan, the plan of operations, and the monitoring plan. So that will all come kind of near the tail end of this process and it will be influenced by the public comment on the project in general.

The other thing we have to do is to make sure that the company's financial bond for the reclamation is adequate. At this point they've proposed a $27 million bond that would be held by the state. In the eventuality that something happens and the company is not able to do the reclamation work, then the state is able to go in and complete it. So we have to go through line by line and agree that that $27 million amount is an appropriate amount. And so I guess that wraps up I think a quick synopsis of what the state involvement in this project is, and I'll turn it over to Bill and he can wrap it up.

MR. RILEY: Thank you Ed and Luke. As far as the next steps in the process, from our end we will be issuing a response to comments that we receive during this comment period and testimony tonight and last night at Delta Junction in the

final EIS, which we would hope to have out late this summer. Also, the Corps of Engineers has a very significant permitting action, the Clean Water Act, section 404, dredge and fill permit, which will be public noticed later this summer with the final EIS, after they get more detailed drawings from Karl and Teck-Pogo specifying exactly where there would be cuts and fills, and we know exactly what project would be permitted as we get through the EIS. So we would expect to hopefully get through this to the final EIS this summer, issue a record of decision that documents our permitting decisions, and get the permit out the door, if that's where we end up.

So next we want to hear from you all. We have a microphone here. We'd ask you to step up to the microphone and provide your comments. I'll call people in the order in which they signed up. And I'd also like to note that there are some other options. There's some comment sheets that folks can fill out in writing if you don't feel like speaking. Perhaps some of you took advantage of our court reporter during the question and answers, or the open house session, to just provide your statements to Sharon one-on-one, but we do want to hear from you. And we have about 25 or 26 people who have signed up to speak.

MR. FOGELS: Do you want to do a quick question and answer period before we launch into the comments, or.....

MR. RILEY: Right you are, Ed. I apologize. I got

ahead of myself here. Thank you. Sorry about that. I was just looking at the clock; oh, it's time for testimony. Burning questions before we get into the testimony? Anyone? Yes, sir?

A25 UNIDENTIFIED VOICE: Basically, is this quartz hard rock mining, and how will it be extracted? What is the process of this project? A25-1

MR. RILEY: Well, this is a hard rock underground mine with a flotation -- or grinding circuit, floatation, mill cyanidation and leach circuits. All the leach tailings would be backfilled underground, along with about a quarter of the floatation tailings. I believe that's right. So the dry stack tailings would be fairly clean floatation tailings, but it's a hard rock gold mine. I don't know, Karl, can you -- good enough?

A26 UNIDENTIFIED VOICE: Is dynamite used in this process at all? A26-1

MR. RILEY: Oh, yes. It's a mine. And the blue jacket in the back of the room, sir?

A27 UNIDENTIFIED VOICE: If this project is a go and the Shaw Creek Road is the desired access, are there any plans for paving the lower end of Shaw Creek Road to keep the dust down? A27-1

MR. FOGELS: That is something that has been discussed. The Department of Transportation has essentially said that the road could handle the general mine traffic that's expected on

this road the way it is. We are going to be work with the Department of Transportation to take a closer look at that road before the final permits are issued, and we're going to see what else maybe could be done with the road or with the situation down there to improve things. But essentially, you know, mine traffic, they're not going to be hauling ore so there's not going to be a lot of traffic. We're anticipating about say ten trips a day or so. It's reasonably light for the most part except for during construction periods where it might be a little heavier.

UNIDENTIFIED VOICE: But there's no initial plans right now? A27-1

MR. FOGELS: Nothing specific at this point, but it's still an issue.

MR. RILEY: Yes, sir?

A28 UNIDENTIFIED VOICE: Just a question. Assuming that when everything is said and done and the first 23 miles are open, as I understand it, the road that's proposed would be a mine access road built to their specifications and their needs, basically a one-lane road. If it was required to be open access beyond that, is that built to DOT specifications? Is the state obligated to maintain that road, and how does it change those dynamics? A28-1

MR. FOGELS: Well, first off, it wouldn't be a one-lane road, it would be a two-lane road, with the exception of

one-lane bridges. And the important thing to remember is that the Division of Forestry is planning to build this road, has been for a long time now, as a logging road, which they would go in and remove the timber and then that would be a public road, like they do in all their other parts of the state forest. So from the state's perspective what we'd be getting out of the deal is something that's much better and built a lot better than a normal Division of Forestry road out of this. But, yes, at the end of the mine life, and if it were public, the maintenance of that road would not longer be Teck's responsibility; it would be the state's responsibility.

UNIDENTIFIED VOICE: How about during the mine life, if it's open access? 128-2

MR. FOGELS: Well, at this point the proposal is for Teck to take on that maintenance. We're still discussing the details on that, as far as maintenance costs and cost sharing and stuff like that, but I think Teck would want to make sure that road is maintained.

UNIDENTIFIED VOICE: Right, right.

MR. RILEY: Any other questions? Yes, sir?

129 UNIDENTIFIED VOICE: For the future of that area, that road that's built by Teck, would that be used then by future companies that want to develop the Goodpaster? 129-1

MR. RILEY: Again, I'm going to have to ask the road people to answer that.

MR. FOGELS: The state recognizes that even though we're saying this road is for the Pogo Mine only, if another company has a discovery and wants to develop Pogo too, we're not going to make them build a parallel road to go in and access that. And I think we try and acknowledge that in our draft decision. And what we're saying in the draft decision is this road for right now is for Pogo's use only. Any other user of this road is going to have to come to DNR and apply for another permit to use that road. And the decision lays out specifics on how that would work. It would need additional public notice and it would need an additional analysis of what the impacts of that additional development would be, so that avenue is open.

MR. RILEY: Other questions? Then I'm going to call our first speaker. It looks like we have, again, about 27 or so folks who would like to speak, so if you could please step to the microphone and let us hear what you have to say, we'd appreciate it.

MS. HEGARTY: Excuse me, Bill.

MR. RILEY: Yes?

MS. HEGARTY: Could you just mention that there are about 20 chairs up here?

MR. RILEY: Yeah, I'm sorry. Some folks just like to stand in the back, but there are plenty of seats, well, about 20 seats up front if you'd care to sit down. I appreciate the

good turnout. First on our list is Clark Milne, and following him will be Wesley Nason.

MR. MILNE: I succeeded in giving my comments to the court reporter in the open house part. Thank you.

MR. RILEY: All right, thank you. Wesley Nason?

A30 STATEMENT BY MR. WESLEY NASON

MR. NASON: Just by way of introduction, my name is Wes Nason. I'm a 30-year resident of the state. I've got a mining engineering degree and I have 10 years experience in gold mine operations and exploration, and 20 years experience in heavy construction, including in rural Alaska. Some of my experience is also with old mines, built with old technology. And having reviewed the Teck Draft EIS, I can say that Teck has done a great job of using the latest available technology to minimize the mine footprint and to comply with the water discharge criteria.

I'm currently employed by VECO Alaska. VECO is an Alaskan owned and operated company engaged in engineering, construction, maintenance, and operations of process and power facilities for the mining and hydrocarbon industries in the state. We support environmentally responsible development, such as the Pogo gold mining project. We believe the EPA, Alaska's DNR, DEC, and the US Corps of Engineers provide a vital role in our state's economic development by providing timely and reasonable resolution to these permit applications. A30-1

We endorse the draft NPDES permit and the draft Alaska Department of Environmental Conservation waste disposal permit, and believe the EPA and the Alaska Department of Natural Resources should provide expedited resolution of this permitting process for this important project. The Pogo Mine will provide major benefits to Interior Alaska and further diversification to the Alaskan economy. Mines provide local employment and build a tax basis for support of local services. This improves the lives of those living near such developments and decreases the burden placed on the state's spending to provide local services in areas without major private sector employers. A30-1 CONT'D.

Pending receipt of the necessary permits, Teck-Pogo plans to spent approximately $250 million in the construction of a new underground mine, surface process facilities and infrastructure. This investment is estimated to create 500 jobs during the first two years of construction and 300 permanent year-round jobs during operation. Teck-Pogo has designed an advanced operation which is described in the Draft EIS, and this design will meet Alaska water quality standards and will minimize environmental impacts. Importantly, the water quality of the Goodpaster River will not be degraded.

We endorse the preferred alternative identified in the Draft EIS, with the provision that the Alaska Department of Natural Resources adopts the alternative management option for A30-2

management of the Shaw Creek Hillside access road. This alternative management option preserves current public safety standards, reduces short-term impacts to subsistence trapping and commercial recreation, and prevents additional impacts to wetlands from off-road vehicle use, and also provides increased revenues to the state from right-of-way fees, material sales and timber sales. A30-2 cont'd.

We urge the EPA and Alaska DNR to initiate the permits which will allow production of Alaska's official mineral, gold, from the first major underground gold mine in Alaska since World War II. The State of Alaska currently has only one major gold mine in operation, and I'm not including Green's Creek, even though it produces gold, it's a metallic mine, or about one mine for every 600,000 square miles of our land area. By comparison, Nevada, known as the mining state, has about 17 major gold mining operations, which employ more than 100 people, or one for every 6,000 square miles. The average mining job in both Alaska and Nevada provides annual wages of around $60,000, which is about double other industries. Alaska's economy needs the economic and social benefits which will flow from this type of responsible mineral development. Thank you.

MR. RILEY: Thank you. Next up is Mark Anderson, and in the on-deck circle, Jeanine St. John.

A31 STATEMENT BY MR. MARK ANDERSON

MR. ANDERSON: I'm Mark Anderson with Lynden Logistics out of Seattle, but a recent 25-year resident of Alaska. I represent the Lynden family of companies, including Lynden Transport, Alaska West Express, and Alaska Marine Lines, and Nenana Lynden was a logistics joint venture at the Red Dog Mine. We support the responsible development, and have so for the 50 years we've served Alaska, of these natural resources. We endorse the project and the preferred status, as indicated here, for the EIS. We prefer the restricted access to the road in the initial phases of the operation, based on previous experience with several mines throughout Alaska. We fully support this project and the creation of valid jobs and wealth for individuals, and the companies that assume these risks, and for the State of Alaska. Thank you. A31-1

MR. RILEY: Thank you. Jeanine St. John, and next would be Steve Borell.

A32 STATEMENT BY MS. JEANINE ST. JOHN

MS. ST. JOHN: Good evening. I'm Jeanine St. John. I'm a vice president with Lynden Logistics. And I'd like to commend the agencies on all the work that they've done on this project. It's quite extensive, very detailed, and you guys have really done a wonderful job working with Teck-Pogo on this. I have submitted written comments and they're in the box, so I will keep my comments very brief. And I wanted to comment just really from three perspectives. One is as a

Lynden representative, and Mark kind of outlined Lynden's position on this.

We definitely support responsible, safe, environmentally sound access to resources. And we don't have enough roads in this state, so anything that develops a road for access to resources, we certainly do support. Again, we support the restricted access, not opening the road to the public until after the mine operations are complete. Also, as my second perspective is as an executive board member with the Alliance, which the Alliance is an industry support organization for the oil-gas mining resource development organizations. And, again, we support anything that brings resource development to the state, so this is definitely a project that we'd like to see go forward. A32-1

And third, as a 23-year resident of the State of Alaska, personally I support anything that enhances what we're able to do in the State of Alaska, as far as economic development. And I have two sons that are entering the age of getting into the work force, and I'd like them to be able to find jobs in the state and continue to live here. They love Alaska, too, and we want to keep them here. Thank you very much.

MR. RILEY: Thank you. Steve Borell, and next would be Cindy Mittlestadt.

A33 STATEMENT BY MR. STEVE BORELL

MR. BORELL: Thank you. My name is Steve Borell. I'm the executive director of the Alaska Miners Association. I am testifying on behalf of the association this evening. I too, like Jeanine, would like to compliment the agencies on the work that they've put into this Draft EIS, in particular, in developing and including the findings and the draft decisions on several of the major permits. This really seems to be an efficient public process. It's much clearer, and I have to say it's much clearer for the general public to be able to come to one meeting like this one, rather than a multitude of meetings at different times, different places. And people's eyes glaze over at one point, and so I think that's an important part.

I also feel that the matrix that you've put together here is extremely clear and a very good way to approach that. Secondly, for the innovative approach on water discharge management, that seems to be a win-win just for all involved in all situations. Thirdly, this Draft EIS is extremely thorough. I've reviewed the material and I can't identify anything that hasn't been adequately covered. If anything, it appears that there's probably more detail than there would need to be, and, seriously, I wouldn't want to see this become the norm. It looks like it's -- given the very minor amount, and I say that relatively speaking, the minor amount of environmental risk involved, this has been extremely thorough. A33-1

The one remaining items, of course, is whether or not A33-2

the Shaw Creek Road will remain a closed road during the mine life or it will be open, and we wish to go on record saying that we believe it should be closed. Just the safety considerations of the possibility of meeting a Winnebago with a fuel truck are not a pretty picture. And this industry does not need that kind of potential safety concern, that potential bad publicity, and we just think it's the right thing to do to limit that traffic in the early part. Thank you. A33-2 CONT'D.

MR. RILEY: Thank you. Cindy Mittlestadt, and will be followed by Mark Huber.

A34 STATEMENT BY MS. CINDY MITTLESTADT

MS. MITTLESTADT: Members of the EPA and the cooperating entities; thank you for your time, and, again, I echo many of the sentiments already iterated here this evening. I'm Cindy Mittlestadt. I'm the communications manager for the Alaska Support Industry Alliance, more widely known as the Alliance. My comments really represent a collective voice of over 400 member companies who derive their livelihood from Alaska's oil, gas and mineral resources. The employment base represented by the Alliance is greater than 25,000 Alaska residents. Additionally, a number of our contractor members from the Anchorage and Fairbanks chapters of the Alliance presently provide services to the Pogo Gold Mine project and represent Alaska hire. This is extremely important to the interior region of Alaska, and wholly the state, during a time

of fiscal uncertainty and debate.

Membership of the Alaska Support Industry Alliance endorses the preferred alternative identified in the Draft Environmental Impact Statement, with the provision that the Alaska Department of Natural Resources adopt the alternative management option for the Shaw Creek Hillside access road. A34-1 This option will result - again, some of these factors have already been stated this evening, and I'm going to restate them - in increased safety for the public, reduce short-term impact to subsistence, trapping and commercial recreation, reduce the short-term impact to the wetlands from the off-road vehicle usage, and provide increased or additional revenue to the state from right-of-way fees, material sales, and timber sales receipts. A34-2

It's important to emphasize that the EPA and Department of Natural Resources have continuous cooperative efforts to provide timely resolution of the permitting process to advance the Pogo Gold Mine project. With the necessary permits in place, the Interior Alaska and Alaska will benefit with 500 new jobs during the first two years of construction and 300 permanent year-round jobs during the gold mine's operation. Additionally, Teck-Pogo will expend $250 million for the upstart of the underground mine.

I appreciate again this opportunity to testify this evening and thank you for your time. This project represents

one of many in which Alaska talent, technology and expertise clearly demonstrate responsible development of our natural resources.

MR. RILEY: Thank you. Mark Huber, followed by Dan Kupiszewski.

A35 STATEMENT BY MR. DAN HUBER

BY MR. HUBER: Yes, good evening. I am Mark Huber. I'm vice president of Doyon Universal Services. I also serve as the director and a member of the executive committee of the Alaska Support Industry Alliance, and you just heard about the Alliance from Cindy. And let me briefly describe to you Doyon Universal Services. We're a partnership with Doyon, Limited in the regional Alaska Native Corporation based here in Fairbanks, and Universal Services, a company that started in Alaska in 1946. We have operated continuously in Alaska since that date. We employ 750 individuals, primarily providing catering, security, maintenance, and other services to the remote site locations in support of oil and gas mining and construction industries in Alaska. Our employees are 95 Alaska residents. Some 200 of our 750 employees are of Alaska Native descent, representing 30 percent of our work force.

We are committed to Alaska hire and spend. We're also committed to the Teck-Pogo project. We have been providing and working with Pogo since 1997 doing catering and housekeeping services at the mine site. Doyon Universal Services joins with A35-1

the Alaska Support Industry Alliance and others to endorse the preferred alternative identified in the Draft Environmental Impact Statement, with the provisions that the Alaska Department of Natural Resources adopt the alternative management option for the Shaw Creek Hillside access road. A35-1 CONT'D.

Benefits of the alternative management option include increased safety for the public, reduce short-term impacts to subsistence trapping, commercial recreation, reduce short-term impacts to wetlands, increased revenue to the State of Alaska from right-of-way fees, and no change to the existing public access to the region. I urge the EPA and the Alaska Department of Natural Resources to resolve the permitting process for timely construction of the Pogo Mine. There are tremendous upsides for granting Pogo Mine its operating permits; approximately $250 million invested during construction, 500 new jobs created, meaningful jobs within a meaningful industry, 300 permanent jobs year-round during the operation of the mine, increased revenue to the State of Alaska at the time we're looking for additional resource projects to bridge our fiscal gap, and economic stimulation for Interior Alaska and the surrounding communities.

That having been said, let me offer just a few personal comments on my working with Karl Hanneman and Teck-Pogo over the last six years. We have found Teck-Pogo and Karl to have a strong desire to work with the local communities and interest

groups. Karl has spent many, many evenings and many hours meeting with those interest groups and stakeholders in understanding what their concerns are as they design this project. I have noted a desire in Karl and Teck-Pogo to resolve conflicts in a timely and a mutually beneficial manner. I have seen a strong support for local hire and spend. This has been demonstrated with training programs for local individuals and Alaska Natives, working with local businesses, such as mine, Taiga Ventures based here in Fairbanks, Tanacross, Native association, as well as the IGA store in Delta, and several other local contractors. Karl and Teck-Pogo demand work place safety and environmentally sound practices. They're a good company to work for and the kind of company we should want to attract to the State of Alaska.

I appreciate the opportunity to testify, and thank you for your time and commitment in putting together this exhaustive EIS process. Doyon Universal Services is pleased to be part of a project utilizing advanced technology, skilled Alaskan workers, while maintaining the best practices sensitive to the environment. Thank you.

MR. RILEY: Thank you. Dan Kupiszewski, followed by Kara Moriarty.

A36 STATEMENT BY MR. DAN KUPISZEWSKI

MR. KUPISZEWSKI: Hi. I don't represent any private company or any government entity. I think the Shaw Creek A36-1

A36-1 CONT'D.

Hillside route is by far the best route. I think it should be closed to tourists. Because a friend of mine, he lived up at A36-2 Central, and the Winnebagos used to come by and tear the mirror off of his Dodge pickup truck, so he put on a folding mirror, and he took the bumper off and welded on an I-beam on the front end. When the Winnebago would approach him, he would pull over to the side of the road as far as he could go and drop the wheels over the edge of the shoulder and would make a complete stop. The Winnebago would continue on and peel itself from the front to the rear, like a can opener opening up a can of spaghetti, or whatever. He did that many times, because the road is too narrow and your tourist drivers aren't familiar with gravel roads. And I notice there's a lot of switchbacks in that road, too, at one point there, so I think the road should be closed to the public.

My second point is, the Pogo Mine offers possibilities for jobs of Delta residents who are on welfare currently. I've A36-3 heard a considerable amount of grumbling of Delta residents who come up to Fairbanks and shop at Sam's Club and other places on food stamps. Well, this will give them a chance to get a job and be self-supporting and to contribute to our economy. I understand that the State of Alaska has sponsored a mine training program to get people employed once this project gets going. Not everyone in Delta wants to work for the military missile project, so this provides an alternative and will

diversify the economy in the Delta area. Thank you.

MR. RILEY: Thank you. Next we have Kara Moriarty, to be followed by Buzz Otis.

A37 STATEMENT BY MS. KARA MORIARTY

MR. MORIARTY: Thank you. My name is Kara Moriarty, and I'm here representing the Greater Fairbanks Chamber of Commerce. The Fairbanks Chamber of Commerce is made up of 750 business members in the Fairbanks area, and on behalf of our board of directors I'm here tonight to support the preferred alternative option for the Pogo Mine.

The Chamber has been following this project for some time and we've been very excited about the potential of the development of the Pogo Mine. And Mr. Huber commented on Karl Hanneman's dedication to this project, and I can tell you the Chamber has been very aggressive in trying to get Karl to come speak to the Chamber, to talk about this project. And every time he'd say, now, wait, we're working out the alternatives, we're really working with the community, we want to make sure that when the public comment period comes around that we've had most of the issues worked out. And I think the results of the agencies' hard work, the industry's hard work, and those supporting both the agencies and the industry have come up with a preferred alternative.

I will share with you that the resolution that has already been submitted to DNR and DEC does support the A37-1

alternative. We did have some members of the Chamber that said, we want that road open all the time, but that was a small minority of our Chamber. And we collectively agree that the road should be closed to the public during the life of the mine. However, when the mine is closed, and we know it's not going to last forever, that the first 20 to 20-some miles remain open to the public. And it also allows for better management of possible timber industry, other tourism opportunities once the mine is finished. So we think it is a real win-win, and it sets a new precedent, I think, for development of resource projects in the State of Alaska, as the industry is going to provide the construction of the road. The industry is going to maintain the road, and eventually some of that road will be turned over to the public. And in limited public funding times, I think this sets a good precedent for future resource development projects. A37-1 CONT'D. A37-2 A37-3

So in closing, the Chamber does support this project. We're very enthusiastic about it and we look forward to working with all those involved. Thanks.

MR. RILEY: Thank you. Next up is Buzz Otis, to be followed by Bill Brophy.

A38 STATEMENT BY MR. BUZZ OTIS

MR. OTIS: Good evening. My name is Buzz Otis, and I represent a company called Great Northwest Company I founded in 1976, and starting tomorrow we'll be starting our 28th year of

construction in the Interior of Alaska. We are primarily involved in civil construction, earth work, and over the years the company has grown. And I'm here to support the project this evening. A38-1

I also happen to sit on the board of directors of the Fairbanks Economic Development Corporation, the Fairbanks Chamber of Commerce, and I'd like to welcome my fellow Alliance board members here from Anchorage tonight. Nice to see them up here supporting this project. I think it demonstrates the statewide importance of the development of this mine project. It's huge for the Interior. And, you know, when we peak out, we normally have close to 250 employees, and I can tell you without projects like this, you know, even though we may not be involved in it, they're in union hands, and, you know, if they're not working for me, they may be working for somebody else. And this is very important to them at least to have the opportunity to try to work up there, and the spinoffs, as you know, will be huge; 300 year-round jobs. We need the economic input of projects like this certainly here in the Interior. It's long-term and that's what we need.

You know, years ago when they first started talking about this project, I remember meeting with some of the Teck folks out at the Princess Hotel, and, you know, back then I was impressed with their thoroughness and willingness to get the public involved and inform them about the project, and that was

prior to Karl Hanneman being hired. And since that time, you know, he has dedicated his life to doing it right, and working with the agencies, and working with the environmental community, and working with the residents, whether they're seasonal or permanent, along the Goodpaster River, the folks in Delta, to address their concerns and make sure that he is putting his best foot forward.

And I'd like to commend Karl and his group for the way they've worked with the agencies and the public. I think it's very commendable. You don't see that a lot of times, you know. People want to have a big project and just come in and roll over everybody, but they haven't done that. They wanted to do it right from the beginning, and what they've demonstrated to me is that they're going to take care of Mother Nature probably just as well as Mother Nature takes care of itself, and I think that's a huge important thing to all of us in this room. I mean there probably isn't any of us here that don't drink the water in Alaska or fish or hunt here when we get an opportunity, or recreate here, or climb the hills here.

And, you know, I've often referred to myself in these public hearings as a prodevelopment environmentalist. I mean I care about the environment, you know. I don't like to see leaky tractors or anything else and neither do they, so I think they're to be commended for that, for their efforts in bringing the public along through the process, even though, you know, I

know they've been just dying to get out there and get started, but they haven't had -- the process wasn't finished and they put that first.

Another comment I'd like to make is I agree that the mine road should be shut to the public until such time that the mine is done. You know, recreational traffic and industrial traffic doesn't mix very well. I know just in our small gravel operation over on Van Horn Road, we get somebody in there that isn't part of the company, or, you know, somebody is just kind of coming down in there and looking around, and, you know, there's a hazard there and it's a safety issue. And I think that the right decision would be to keep that closed until the mine plays itself out. Anyhow, thank you all for being here. Thanks for giving the public an opportunity to participate. I mean that's what America is all about, whether you're for something or against something. I mean it's great that everybody takes the time to come over here and peacefully talk about what we all think is best, in their own particular best interest, and I appreciate you being here. Thank you. A38-2

MR. RILEY: Thank you very much. Next we have Bill Brophy, to be followed by Joe Beedle.

A39 STATEMENT BY MR. BILL BROPHY

MR. BROPHY: Good evening. My name is Bill Brophy. I'm a resident of Fairbanks, and I'm a member of the Resource Development Council of Alaska and a former member of the board

of directors. I am here tonight to testify on behalf of the Resource Development Council of Alaska. The RDC supports the preferred alternative identified in the Draft Environmental Impact Statement, with the provision that the Alaska Department of Natural Resources adopts the alternative management option for management of the Shaw Creek Hillside access route. RDC also endorses the draft NPDES permit and the draft Alaska Department of Environmental Conservation waste disposal permit. A39-1 A39-2 A39-3 RDC is a statewide business association which works closely with Alaska's basic industries, including tourism, fishing, oil and gas, mining and timber. RDC's membership includes individuals and companies from these industries, as well as from support sectors such as construction, labor, and other technical service providers, Native corporations, and local communities.

The Pogo project is good for Alaska, especially for the Interior, where it will boost the economic activity and generate hundreds of new jobs during construction and permanent year-round jobs. Pending receipt of necessary permits, Teck-Pogo is prepared to invest a quarter billion dollars to construct the underground mine and its related infrastructure. The project will bring new opportunities for Alaska businesses and residents, and will help sustain a healthy and growing mining industry in the state. The Teck-Pogo operation has been designed in such a way as to minimize operational impacts on

the environment. The project is designed to meet Alaska water quality standards, and it will not degrade the water quality of the Goodpaster River.

Regarding the issue of public use of the Shaw Creek Hillside Road, RDC believes it would be better to keep the road classified for industrial use only while mining is occurring. The alternative management option will lead to an increased margin of safety for the public during the mining operations, and it will result in reduced short-term impacts to subsistence and trapping, as well as wetlands for ORB use. A39-2

I conclude by urging the EPA and the Alaska DNR to provide timely resolution of the permitting process so that the Pogo Mine can move forward. Let's go to work. Thanks for this opportunity to provide comments this evening. Thank you.

MR. RILEY: Thank you. And next we have Joe Beedle, to be followed by James Matthews.

A40 STATEMENT BY MR. JOE BEEDLE

MR. BEEDLE: Joe Beedle, 300 Hawk Road, Fairbanks, Alaska. My goal is to deliver some generic by very positive testimony in favor of the Pogo Mine development. My backcountry; I was raised in Juneau with great appreciation for gold mining as the reason for that town's existence, with half of the town built on tailings from local mining efforts. I graduated from the University of Alaska prior to its being named UAF, with recognition that its roots were for mining,

even more so than agriculture, as the Alaska agriculture college and school of mines, its original name, indicated.

I spent 19-1/2 years as an Alaska banker, with constant optimism that a resurgence in Alaska mining would eventually occur to the benefit of the state. My University of Washington graduate thesis was written on the positive economic impacts of the proposed RTZ mine near Ketchikan. I served six years as president and CEO of Juneau's ANSCA Native Village Corporation, Gold Belt, Incorporated, coincidentally named for the geologic gold-bearing region encompassing northern and southeast Alaska, representing their 3,000-plus Alaska Native shareholders. It was my pleasure to support local mining efforts in the area, including the Green's Creek and Kensington mine efforts.

From that experience on the Gold Belt roads and on the Greens Creek Road, and the similar commute in terms of time, it's obviously water to get there and then a private road to get to the Greens Creek Mine, and our own roads on Gold Belt property, it was extremely important to preserve and protect the wildlife resources and the habitat by controlling those roads in both instances. By matching the responsibility with the control, as indicated in the preferred alternative, you will protect that resource and hold Teck-Pogo responsible, which I'm sure they'll be happy to be.

In my capacity at UA, including treasurer for the University of Alaska Foundation, I'm the vice president for

finance and chief financial officer for the university system, I constantly work on financial resource identification, solicitation and preservation. In trying to attract dollars for the university, including from the State of Alaska and the private sector, I am reminded that we need a strong economy to allow the continued funding for the university. Moreover, we need good jobs to retain our residence.

I see a resurgence in this industry and growth in our geology, mining, and mineral engineering schools. It gives me great pleasure to see three prominent UA alumni working for Teck-Pogo; namely, Denise Herzog, Sean Clayton, and Karl Hanneman. Provided this mind is permitted, we collectively will enjoy high value jobs and increased financial resources for our area. As a finance type person, I recognize that the hard dollar cost feasibility for this mine will drive its decision. The preferred alternative gives them the opportunity to evaluate this. Our soft dollar encouragement, the momentum, and the community support are equally important. I personally and professionally encourage your favorable consideration to issue a record of decision supportive of the preferred alternative. A10-1

MR. RILEY: Thank you. James Matthews, to be followed by Curt Freeman.

A41 STATEMENT BY MR. JAMES MATTHEWS

BY MR. MATTHEWS: My name is James Matthews, and I'm a

resident of Fairbanks since 1957, and a user of the Goodpaster River since that time. I was also part of the founding membership of the Goodpaster Property Holders Association and its first president. And I wanted to do, as many other speakers tonight, is that our broad general purposes are to enhance and preserve the wildlife and recreational values of the river system. We've worked with Karl Hanneman over the period of the planning of this mine and have an excellent response, and have resolve many of the issues that we had initially as this mine was proposed. And we appreciate the economic significance and the importance of this mine to our Interior and to the state.

We do have some concerns in that the road system as it's proposed, we like that alternative that's been spoken favorably of here tonight, but it does increase access to the watershed. And we support the idea of restricting public use of the road at this time until the mine period is over. But we A41-1 will be developing a written response to the agencies on our board's position and on our association's position.

We would be concerned about the egress, I guess, off the mining road into the watershed, if not carefully planned. In the early life of our association, we were faced many times with roads that were proposed by the forestry interests that did not have the broad public input that this project has, and we worked at times in opposition to some of those roads. I

wanted to commend, as other speakers have, the very careful planing process for all resources, the very high concern for the river and the quality of the watershed, and the valuable database that you've provided to all of us as users of the river. And with that I'll just end my comments and say that we will make an official written statement to the agencies.

MR. RILEY: Thank you. Next we have Curt Freeman, to be followed by David Wright.

A12 STATEMENT BY MR. CURT FREEMAN

MR. FREEMAN: Yes, my name is Curt Freeman. I'm a Fairbanks resident for 25 years, and a mining geologist based here in Fairbanks. I have made e-mail comments to both Ed and Hanh Gold, so I'll keep my comments short and limit them to three points. Number one; I've worked in a number of foreign countries, most of the western United States and Alaska, and I have never seen a company engage the public earlier or more often on what the public sees as fit for a mining operation, and that is to be commended. It's going to be a hard hurdle for many people to reach coming after them, but it is something that the joint venture, Teck-Sumitomo Joint Venture is to be commended on.

Number two, in terms of jobs, we've heard it mentioned before how many construction jobs, how many permanent jobs will come as a result of this development. To put it into perspective, the US national average is one in three people

work in the private industry. In Alaska that average is one in seven. That means 14 people in the private industry are pulling the traces for the other 86. We need to change that, and jobs like this coming in Pogo will help change that and help diversify an economy that is very much dependent on oil.

And the third thing I'd like to come out in favor of, restricting access to that road. The safety issue is paramount over any other consideration that anybody can have. I'd like to drive up that road, but if it is, it's a public road for everybody. But when a company builds a road to a company standard, not a DOT standard, and part of it is open, there are going to be -- Steve Borell's mental image is a scary one. Winnebagos and fuel trucks don't mix. That road should be closed. I think that is a preferred alternative that should stay that way until the mine is done. Those timber resources are available after that point; we're not talking about forever here. And, in closing, thanks for taking the time to come to Fairbanks. Thank you. A12-1

MR. RILEY: Thank you. Next we have David Wright, to be followed by Orie Williams.

A13 STATEMENT BY MR. DAVID WRIGHT

MR. WRIGHT: Hi, I'm David Wright. I've been a resident of the Delta area since 1971. Up till the last three years I've been between Fairbanks and Delta. I've been a user of the Goodpaster, the upper Goodpaster, hunted and fished, as

1 well as prospected, almost that whole time, and I've followed
2 this project with keen interest, because I've kind of got one
3 foot on the green side and one foot on the mining side. And
4 I'd have to say that I'm very, very impressed with Teck's
5 approach to this, with their inclusion of the public at every
6 step of the way, and also with the way that the agencies are
7 handling the EIS. I've read it very carefully and I think it's
8 a very well thought out project. I had concerns initially
9 about water quality because the river is important, but I think
10 they've been adequately addressed.
11 The only thing that I have a question about is access
12 of the road, like most people. I definitely support the idea A43-1
13 of having it closed to the public. The only thing is, at the
14 end of mine life, what happens then? That's a question that
15 seems to be open, because I would hate to see the upper
16 Goodpaster opened up at any time to people to be able to just A43-2
17 drive up there. I would prefer to see the road removed at such
18 point that there's no longer mining activity. I think a lot of
19 people who use the river probably would like to see the road
20 never open to the public up there.
21 With that said, the one other thing is that there is a
22 lot of other exploration activity going on, and there will be
23 in the future, and some of that I assume will access that road. A43-3
24 And, if so, I think it would be useful if there were several
25 lay down areas constructed alongside or near the road where

1 other companies doing exploration could stage their activities
2 and stay completely out of Teck-Pogo's way and stay off the
3 road, because there will be helicopter exploration activities,
4 there will be camps; there are now. And I'm assuming that the
5 road will be used to some extent by other companies doing those A43-3 CONT'D.
6 kind of activities, as legitimate industrial users. And I
7 think that if there's a provision for some small areas for them
8 to access from, that that will be useful, and will stay safer
9 and more out of the way of Teck. Anyway, thank you very much
10 for your time, and thank you Karl and the Teck people for all
11 the hard work you've done, because I think this is just a blue
12 ribbon project in terms of the way it's been handled. Thank
13 you.
14 MR. RILEY: Thank you very much. Orie Williams, to be
15 followed by David Cruz.
16 A44 STATEMENT BY MR. ORIE WILLIAMS
17 MR. WILLIAMS: Good evening. Thank you for holding
18 this hearing. My name is Orie Williams. I'm president and CEO
19 of Doyon, Limited. Before that, though, I was born in
20 Fairbanks because my mom made it to hospital, raised in Nenana
21 and Fairbanks, lifelong resident of Alaska, so my grandchildren
22 and their grandchildren will be impacted by the decisions made
23 tonight. I'm very, very proud to tell you that when I was
24 about 16 years old I joined the laborers union, worked out of
25 laborers as operators and management for over 40 years in the

construction business in many different aspects and many different phases, not only in Alaska, but New Mexico, California, Arizona.

And I've never seen a site -- I've had the privilege of visiting this site last year. I want to compliment the Teck people and Sumitomo who financed it. You've got a project here that's financed strongly, and it's an industry -- and this partnership should be invited into the state. They've run a very professional operation. I've never seen a cleaner mine. I went up there with a picture of this big open pit thing, and went down into the mine itself. It's very, very clean. I cleaned up sewer and water traps on the pipeline when we built it in the '70s, camps that were almost ready to shut down because the effluent was so bad. You could drink the effluent from this wonderful water treat plant in this mine; very, very impressed. The creek was clear. You could grayling fish out there and you'd never have to worry about it; it's absolutely phenomenal.

I come from Nenana downriver. It's amazing to me that the villages all up and down the river have been asked to comment on the water clarity for this project. I can testify to you tonight that it is the cleanest site I've ever visited in construction.

But Doyon is Alaska Native Claim Settlement Act Regional Corporation for Interior of Alaska. Our headquarters

are here in Fairbanks and we represent -- we're 14,000 shareholders of Athabascan, Eskimo, and Aleut descent. I personally am a tribal member of the Village of Nenana, Alaska, and a shareholder of Doyon, Limited. Most of our members reside in Alaska. Doyon is the largest private land owner in the State of Alaska. We currently hold title to and actively manage over 10 million acres, including extensive land interests in the vicinity of the Pogo Gold Mine project. Doyon owns and operates businesses in several sectors, including tourism, oil, oil and gas drilling, remote site catering and housekeeping, security, construction, and commercial real estate. These businesses employ over 1,000 people here in Alaska. Many of these employees are our own shareholders.

I have come here tonight to endorse the preferred alternative identified in the Draft Environmental Impact Statement for the Pogo Gold Mine project, and thank the project developer, Teck Cominco, for the good corporate citizen we know them to be. Doyon has followed this project closely over the last several years, because Doyon owns lands in the general vicinity of Pogo, because we have shareholders that reside in nearby villages, and because we want to participate in the development of Pogo through the provision of needed services. AA-1

Pogo project managers have met often with a wide spectrum of individuals and groups who have various interests that could be affected by the development of this mine. We

believe that Teck Cominco employees have worked hard and in good faith to accommodate those interests as best they could, while preserving the necessary elements for a long-term economically viable project that will provide good jobs for hundreds of Alaskans.

Just a few examples of these efforts that we are familiar with include close cooperation with the Fortymile Caribou Herd planning team to avoid disturbance to the herd near the critical calving period in May and June of each year; proposals to manage road access as industrial use only and then decommission the road when mining concludes. Sponsorship of a recently completed prototype training program in Delta for mine workers has focused on recruitment from nearby upper Tanana Valley communities; mine facilities designed with a small footprint and preservation of Goodpaster River water quality.

Doyon endorses the preferred alternative identified in the Draft Environmental Impact Statement on the condition that the Alaska Department of Natural Resources adopt the alternative management option for the Shaw Creek Hillside access road. Under the alternative road management option, public uses would be allowed for the first half of the road; the last half would be reserved for industrial use only. While we prefer the entire length of the proposed road be restricted solely to industrial uses, the alternative management option is a workable -- the alternative road management option will still

A44-2

result in increased public safety, reduced impacts on subsistence and recreation, reduced impacts to wetlands from overuse.

A44-2 cont'd.

The Pogo project will be a major contributor to the economy of Interior Alaska and it will provide hundreds of good jobs for many years. Development of a well-designed project like Pogo, including issuance of all needed governmental approvals and permits without unnecessary delay, is important to growing mining industry in our state. Again, besides creating new opportunities for Alaskan business and residents, the success of projects like Pogo will help attract new high risk investment capital from around the world. This team is to be complimented on their financial investment in our state. Responsible companies need to know that if they take the huge financial risks of exploring in Alaska, that they will be able to timely develop their projects if they are so fortunate to find economically viable deposits.

We wish Teck Cominco great success with the Pogo Gold Mine project. Thank you for the opportunity to provide these comments. And, again, like many others have done tonight, I want to thank this consortium for hiring the local people they have, especially Karl, whose family comes from here also, and his grandchildren will be here to see the results of this activity. The environmental safety and the impact and success of this program demonstrated by this team is phenomenal. We

greatly and wholeheartedly endorse it. Thank you.

MR. RILEY: Thank you. Dave Cruz, to be followed by Danny Wood.

A45 STATEMENT BY MR. DAVE CRUZ

MR. CRUZ: My name is Dave Cruz. I'm president of Cruz Construction. Most recently our company has been involved with the Northern Intertie for the last two years. We did a portion of the clearing two years ago, and then we've constructed the winter road, 78 miles each year for the last two years. I am speaking that I'm very in favor of the Pogo project. I think it's well thought out and well planned. I do have some comments, though, that are more technical, because I have been in the field with agencies and they've said, you need to be involved in the public process. We have stipulations we have to go by. Well, when do I do that? Well, you've got to come and testify at these EIS hearings. A45-1

And some of my big concerns are Pogo is again trying to meet a market date. Gold is fluctuating in price, and their winter road, of which we experienced in Fairbanks here this year, we had freeze/thaw, freeze/thaw cycles which affected us constructing this road. The Department of Natural Resources, Bureau of Land Management, and US Army had on the northern intertie 12 inches of snow and 12 inches of frost to protect the vegetative mat. That's, you know, a good idea. What I saw and experienced firsthand is, how do you determine what 12 A45-2

inches of snow is? You folks have 12 inches of snow in your EIS right now. It's been proven on the North Slope that 6 inches of snow is adequate, as long as you have 12 inches of frost to construct ice roads.

This might seem like a minor thing until you have, you know, agencies you're trying to deal with, and they're trying to measure snow out there, and you don't have it, and these people need to get their road built. So I would like to have the consideration to adopt the North Slope guidelines for this winter road; that is, 6 inches of snowfall and 12 inches of frost. And I think this is very important, because the Shaw Creek Flats does not historically receive 12 inches of snow continually, if you look back over the last 20 years. So this is something that's very important, and I'd like to get my two cents out about that now rather than looking at a stipulation, like I have over the last two years, and trying to make it snow, and actually having to go to the expense of building a mobile snow maker to satisfy these stipulations. A45-2 Cont'd.

The second thing that is probably a big concern to the success of the project is the harvest of timber off the road and power line right-of-way. In Alaska here we have some nice small sawmills. We have a good one here in Fairbanks, several of them, but we don't have pulp mills that can take any kind of wood fiber. And traditionally, DNR has used a forest service application, which is 4-1/2 inch dbh, diameter at breast A45-3

height, as a merchantable piece of wood. My experience in over 20 years in the clearing and road building industry is that it's not. And I think that we need to relook at this and see what is merchantable that needs to be removed off that right-of-way and salvaged, and what isn't.

And I would contend that we need to have something in the 9 inch dbh and a 6 inch top. It doesn't seem like much now, until you look at, you know, 7, 800 acres and how you've got to handle this. There's many things the other wood can be used for; it can be chipped, it can be used for slope stabilization, but it should not be required to be removed if we can't do anything with it. The firewood market is, you know, dwindled down to where people would rather plug in their Monitors than go out and split wood, and I don't blame them, you know, but that's natural gas coming in. A45-3 Cont'd.

Those are some real important things. The other thing that I see, and I don't quite understand, but I support the preferred alternative route, but I'm wondering why we're varying the power line and it doesn't follow the road all the way along. And I think that you should reconsider that, that it's a lot cheaper, it's better for access, and less impact to the environment if we keep this power line right on the road right-of-way. So most of my comments are technical tonight, but I appreciate the time that you guys have put in and I think that Teck has done an excellent job in presenting their plan. A45-4

Thank you.

MR. RILEY: Thank you. Danny Wood?

MR. WOOD: The Goodpaster Association is going to submit in writing, so I'll pass right now.

MR. RILEY: Thank you. Next up then would be R.L. Odsather. I'm not sure I pronounced that right. He does not appear to be present, or else I've really botched that name. Then we would proceed to Rudolph Vetter.

A46 STATEMENT BY MR. RUDOLPH VETTER

MR. VETTER: I'm Rudolph Vetter. I think that there been a good job done by the Teck people, and also by the state agencies. I favor the Shaw Creek Hillside route; in fact, I think I was probably one of the first people to suggest that. A46-1 I'm not going to say too much, because all of the things have been talked about, about the economic conditions. We all know that we need jobs and we need more development of our natural resources. And I think what we should do is do the job and get it done, do it now and as soon as possible, and don't place any restrictions that might in the future prevent access, because there's going to be a number of satellite deposits come there in the very near future. A46-2

MR. RILEY: Thank you very much. Next up would be Andy Miscovich, to be followed by Barry Donnellan.

A47 STATEMENT BY MR. ANDY MISCOVICH

MR. MISCOVICH: My name is Andy Miscovich. I'm a

life-long gold miner and born in Flat, Alaska. And it's a pleasure to come to one of these meetings with such positive testimony and the crowd. One can tell that they're for this project. All the good points have been covered here so I won't dwell a bit on them. I like the preferred route. I know an oldtimer that had a hard rock mine up there 50, 60 years ago, Carl Tweiten, and when this job come up he told me where the road should go, and you're following that route. A47-1

Anyway, I just wanted to say that it's been a learning process, and I want to commend all the people involved in this permitting process. And as something that we should consider for the future, I would suggest that the length of the permitting process should be shortened as much as possible. A47-2 Now that you've learned the ropes on this project and you have Donna Creek and Rock Creek, and there's many other potential hard rock properties in Alaska that can be developed. And I know our governor is for developing all mining properties. Well, that's about all I had to say, and just good luck on your project and it's certainly a good job.

MR. RILEY: Thank you. Barry Donnellan, to be followed by Paul Barrett.

A48 STATEMENT BY MR. BARRY DONNELLAN

MR. DONNELLAN: I'm Barry Donnellan. The Rudy and Andy show is a hard act to follow. I don't have any specific comments about the Draft Environmental Impact Statement, but I

would like to make a few philosophic comments. As long as there are people in the world, we're going to need economic development, and as long as we have economic development, we're going to have natural resource development. We have natural resources here in the State of Alaska, and I believe it behooves the State of Alaska to foster development, and that can best be done by streamlining the permitting process. It may be difficult for somebody sitting at a bureaucrats desk to understand that delay translates into money to the mining company, and let's also remember that the entire mining industry is looking at the manner in which the State of Alaska conducts itself in this permitting process. Thank you very much. A48-1

MR. RILEY: Thank you. Paul Barrett, to be followed by Craig Gardner.

A49 STATEMENT BY MR. PAUL BARRETT

MR. BARRETT: Thank you. My name is Paul Barrett. I'm a resident of Fairbanks. I have no economic interest in the mining industry, or the construction industry, or any other industry. But having said that, it's apparent to me that this is a wonderful project. It clearly should go forward. It promises to bring a lot of economic opportunity to the area. A49-1 But, you know, Alaska is a very special place in which to live. There are a lot of places in the country that offer good economic opportunities, but Alaska is unique, because

simultaneous with the economic opportunities that we are offered, we have fabulous recreational opportunities, and we have to be mindful of those and to preserve those.

This road, as I understand it, as Mr. Fogels has explained, every inch of it is going to go across state land. That's my land, and that's your land, and that's the land of every sportsman and outdoors person in this state. And if it's going to be built across state land, as I believe it should be, it should be open to state residents for recreational uses. When this road is built, it will be the first real road to be built in the interior in about 30 years. It will be the first opportunity to expand recreational opportunities in that same 30 years. The irony of living in Alaska, at least in the Interior right now, is that our population is growing, but recreational opportunities are shrinking. And we have more and more people competing for a smaller and smaller recreational pie, and it's deteriorating the quality of the recreational experience. And, you know, we see it in just lots of places.

A49-2

Not only will this be the first new road, this will be the first new river access opportunity since the lower end of the Dalton Highway was opened in about 1983, and, accordingly, this will be the first opportunity to add to the very small inventory of affordable float trips that people can take with their families without having to pay the horrendous cost of flying into some remote place.

Mr. Fogels mentioned that he appreciates that there are differing views on the extent to which public access is desirable here, and that the compromise approach may be to open the first 23 miles. Well, I would suggest to you that that's really not much of a compromise, because without the river access, what you have is a dead-end road going off into the forest. That has some recreational value, but it's not much of a compromise from the recreational user standpoint.

Now, the arguments that I've heard tonight and before tonight for denying public access I don't think are well founded. First off, we always hear the public safety argument. Well, my understanding, and in fact I think Mr. Fogels mentioned this in his opening remarks, is the mine traffic is going to be spread over a 24-hour period. It's going to be about ten vehicles a day. I mean, on average, you could take a pretty lengthy nap on the centerline of this road without much concern of being disturbed.

A49-2 cont'd

Furthermore, I also understand all the ore is going to be processed on site, so those of us that have been to Fort Knox Mine, and I'd suggest probably most of the people in this room, you have this vision of these huge ore trucks come rumbling down the road. That's not going to happen with this road; that's just not going to happen. There are lots and lots of very narrow roads, way inferior to this road, that are in daily use by sportsmen in the Interior. The Division of

Forestry roads are commonly used by sportsmen and they're shared with large log trucks. And I'm not aware of any serious conflict between small vehicles and large logging trucks on those roads.

There was a mention of some liability concerns. The way you deal with liability concerns is you purchase liability insurance. I'm sure that an organization as responsible as this one is going to have more than adequate liability insurance. I would submit to you that to flat out deny public access over public land would be just a travesty, and it would be an affront to the public, and it would be terrible public policy, in that you would deny the people of this state an opportunity to which they should be entitled, in deference to what is clearly a special interest. A19-2 Cont'd

If there is to be a compromise in this area, what I would suggest, the more prudent and reasonable compromise is to allow public access but with reasonable restrictions. Perhaps allow for a limited number of permits, maybe four or five or six a day. Put some limitations on vehicle size so you don't have the large Winnebagos going over there. Restrict it to daylight hours. These are all things that are reasonable and would accommodate the recreational users without unduly hindering the legitimate interests of the mine.

In closing, again, I think this is a wonderful project. I would hate to see it get derailed, and I cannot in my wildest

imagination believe that reasonable public access is going to slow this project down one minute. Thank you very much.

MR. RILEY: Thank you. Craig Gardner?

A50 STATEMENT BY MR. CRAIG GARDNER

MR. GARDNER: Yes, hello. My name is Craig Gardner. I've been the primary manager of the Fortymile Caribou Herd for the past 12 years. I worked for Fish and Game out of Tok and I was on the Fortymile Caribou management team. And first, actually it sounds like maybe a broken record, but I do comment Teck and actually all the mining companies in the Goodpaster and the Fortymile country, in the last three or four years they've worked I think really hard and come up with some very innovative ways to allow mining and wildlife to both use the same piece of real estate, and it's been incredibly successful.

But really the point I wanted to make tonight was actually something that DNR said a little earlier in their opening comments, was that there are quite a bit of, you know, other development or other exploration going on in this country, and I have no doubt that possibly something is going to be found. And then what you were saying, that they would be looked at, you know, and judged on their own merit as their project. Well, you know, wildlife is dynamic, you know, the industry is dynamic, and I really support that, but I also think that we also have to realize that any kind of development, you know, be it mining or logging or what have A50-1

you, its effects are cumulative on wildlife, and so I think we also have to very much look at that.

And, you know, Pogo I think will be a success. I think this has been designed to benefit for both their interests and also wildlife, but if you start adding something on top of that and something on top of that and something on top of that, I think we really have to slow down and look at, you know, the cumulative effects and not just the individual effects. A50-1 CONT'D.

And then the last thing -- I am actually going to write some written comments also on the EIS. I was impressed by it; it's a pretty amazing document. I think there were some areas of the Fortymile Caribou that I'll send some on to you, but overall I think it's been a good process. Thank you. A50-2

MR. RILEY: Thank you very much. I apologize if I butcher this name. Tom Bundtzen, to be followed by Rex Fisher.

A51 STATEMENT BY MR. TOM BUNDTZEN

MR. BUNDTZEN: Well, thank you. The way it's spelled it's hard to -- it's hard to pronounce anyway, my name. So anyway, I've been in Fairbanks 43 years. I'm a professional geologist. I operate my firm, Pacific Rim Geological Consulting, Inc. I'm involved in mineral exploration and industrial mineral analysis, and actually geological sciences in general. I want to just commend Teck Cominco for really an outstanding job with this Draft EIS, along with the federal and state agencies that have worked with it. I'm going to keep my

comments very short, because what you'll hear is mostly what you've already heard.

A few personal comments. This road route and this mine development is on State of Alaska lands that are open to mineral resource development and multiple use, and yet care was taken as if it was through a conservation area. And the reason being is that there are other issues at stake here. There are people in the lower Goodpaster, Volkmar Lake area that have concerns about the wild values of these lands. And I think that Karl Hanneman and others have gone out of their way to try to address these issues, which is really why we have this Shaw Creek alternative road access, which does not directly impact those wild and scenic lands issues of the lower Goodpaster River. Congratulations on that. Getting the support of other people that look on the lands differently than a mining geologist like myself, so I really support that. And I also think they did an excellent job of the water quality alternatives and making it a cleaner operation, and explaining to the general public exactly how this mining development will occur, which after 12 or 13 years of resource extraction, or a few more if they find a few more years of reserves, will practically look like it was never there in the latter part of the 21st Century.

However, I put in another hat as an exploration geologist. I want to tell the state DNR and other groups to A51-1

1 provide some sort of use of that road for additional
2 exploration on those state lands. Being somewhat involved in
3 mineral exploration in the Goodpaster mining district, it's
4 awfully expensive to sling those drill rigs up in that area.
5 And if we can have staging areas where we can bring -- drill
6 rigs can be brought in along that road, with the proper permits
7 and restrictions, we can really cut the cost of doing
8 additional diligent mineral exploration, and see if we can't
9 find another Pogo deposit or two.

A51-1 Cont'd.

10 To my knowledge, and I could be wrong, I don't think
11 another Pogo has been found in that area, despite five or six
12 or seven years of fairly intensive exploration, but there's
13 always a chance of finding another one and to cut the cost of
14 exploration. To really see if there's another high quality
15 outstanding deposit like that, or something that's economically
16 viable would be good for not only the mining industry, but good
17 for the people of Alaska.
18 We've already heard how it's going to generate hundreds
19 of new jobs, high quality jobs, but that's just going to be
20 good for the state; good for the Interior, good for the
21 diversity of the economy of Delta Junction and Fairbanks. We
22 all want -- just like Rudy said, there may be dozens up there,
23 but there may not be one more, but if we can find a few more,
24 or get lucky enough to find another one or two, it would be
25 good for the State of Alaska.

1 So, again, I compliment the federal and state agencies,
2 and also the mining company for doing an excellent job,
3 probably the best job ever in Alaska for putting together a
4 draft EIS and getting all the players to be involved in this
5 thing so that the least impact is presented to the general
6 public. Thank you.

A51-2

7 MR. RILEY: Thank you very much. Rex Fisher, to be
8 followed Ben Otis.
9 A52 STATEMENT BY MR. REX FISHER
10 MR. FISHER: I'm Rex Fisher. I came to Fairbanks 40
11 years ago to teach American history at Lathrop High School,
12 where I taught about 3,000 students in the '60s and '70s. I
13 have also taught hundreds of University of Alaska students in
14 the '60s and '70s, American history at Eielson and Wainwright.
15 I think that to really intelligently act on the
16 present, we need to know our history. And this past year I've
17 written a book called Dying for Alaska Gold, and it's got a
18 double-edged meaning to it. People wanted gold when they came
19 here, and, by the way, Fairbanks in 1902 and years following
20 was the last major gold rush in the United States. And I found
21 that there was a great social cost paid in those days for gold
22 mining. Between 1905 and 1916, a 12-year period, there were 83
23 miners who died here in the Fairbanks mining district, and this
24 includes 8 miners who died between the Salcha River and
25 Tenderfoot Creek. Three died at Tenderfoot, three died at

Caribou Creek, one at Flat Creek, in that area, and one at Kogruk Creek.

Also, this is a story of 400 miners who were injured. We had no mining inspectors in those days. And tonight I've heard a lot about the environment, I've heard about safety on the road, but I haven't heard a word about the most precious person involved here, and that's the worker. And I should say that of these 83 who died here in the early days -- and I realize things have changed. Once hydraulics -- it was all placer mining. There was very little underground mining prior to World War I, a little bit here in the Fairbanks area, very little open cut mining above ground; it was almost all underground mining. And it was frozen ground except at the Ester area. They called that wet ground out there because there wasn't a lot of permafrost then.

There were about 22 miners who died in the Ester Creek area; Ester Creek, Goldstream, Eva. And most of these miners died from cave-ins and the drifts, the majority of them. And it was a little scary to me, too, to hear about -- the gentleman here was from Juneau, and Juneau was established by gold, too. I've been researching the other areas of the state, and the Treadwell Mines in Douglas Island, Juneau area, it was a slaughterhouse for the miners down there. I've identified about 200 miners who died there in the underground mines, and often through dynamite blasts. There was one powder magazine

exploded and about 15 miners were killed in one incident. And the next day or two the Celtic Church had buried all the Catholics, and they buried the Scandinavian miners, and the Serbian Church buried the Slavonians in Juneau. But that's an untold story.

And like I say, I know things have changed, but what are the dangers in this project and are they being addressed? I know they're a lot less, much, much less than they were then. I'm also aware that when Fort Knox was first developed there were two men killed there in truck accidents, I believe, at the very beginning. So I'm not testifying for or against this project, because I think it's a foregone conclusion it's going to happen, but I think everyone should always be aware of safety, and of these 83 men who died, 70 of them are buried right over here next door in the Clay Street Cemetery. Thank you. 152-1

MR. RILEY: Thank you.

MR. FISHER: And I brought a few extra copies. I think the state agencies should have this and read it, though, and the Pogo Mine people. I'm selling it basically at cost for 10 bucks, so it's a bargain.

MR. RILEY: Next up is Ben Otis, to be followed by Ron Davis.

153 STATEMENT BY MR. BEN OTIS

MR. OTIS: Hi. My name is Ben Otis and I go to Monroe.

I'm in eighth grade. I plan to have a future in Alaska, pretty much like a lot of kids I know. If this did go through, I'd like to see it so maybe I could get a job. I don't know, it's going to help out 300 people. That's a good thing for Alaska and the Interior. Also, if this went through and the state got revenue for it, the oil isn't going to last forever, so this would also be another way to generate money for Alaska. And then also the Goodpaster River and the people that use it and that road, it shouldn't be open to tourists, because people don't care. Those people from the south, they don't care about Alaska like we do, and they're going to put all of their trash and nobody wants to see that. We want to keep it a good place. That's all. Thanks. A53-1 A53-2

MR. RILEY: Thank you very much. Ron Davis, to be followed by Ivar Halvarson.

A54 STATEMENT BY MR. RON DAVIS

MR. DAVIS: Hi, I'm Ron Davis. I'm a resident of Alaska for the last 50 years, having lived in Fairbanks most of that time, but I lived in the Yukon for a few years as well. And I'm certainly in support of the project as outlined here today, and of course the Shaw Creek Hillside access road as well seems to be the best alternative, as pointed out, and it seems to be favorable to everyone here and I favor that as well. A54-1 A54-2

I'm speaking to the whole project as a recreational A54-3

user. And I've been canoeing in Alaska for about 30 years and have traveled most of the rivers of the Interior and some of the Brooks Range. Some of those I've flown into. Most of them are accessible by road. But by developing this road it would seem to me it would give me and all the other recreational users access both for hunting, fishing, and as for personal use, a float trip down that particular river that I really do not have access to at this time. A54-3 CONT'D.

When we think about the road itself, and some remarked about the potential danger of accidents and things, I've traveled the Steese Highway in the days when it was still just a little twisty, windy road. I've traveled the Denali Highway, the Fortymile Road, and now the Taylor Highway. And those of you who have traveled the Taylor Highway know how twisty and windy that road can be. I know there was a bus accident a few years ago.

But in terms of accidents, I would think with the minimal amount of traffic that's being proposed after the construction of the project, that we ought to be able to use it. And I think it was mentioned by someone here, and it occurred to me tonight as I heard people speaking, that maybe we ought to consider some type of a permit system, because I would agree with some people that spoke tonight that some of the users of the road might be inexperienced people from perhaps outside, or even within the State of Alaska, and A54-4

driving their motorhomes on a gravel road, and, yes, there could be an incident. However, I think that a permit system might help that process, all those of us who would like to access the area for a float trip, hunting, fishing, whatever, in that area. A54-4

I wouldn't want to see us close the road entirely, even after the road is completely -- or after the mine is closed down. As someone else said, it's on state land; it ought to be available to all of us as residents of the state that we can go in there, use the recreational opportunities that it affords. I think of a situation in the Yukon. Many of you will know of the Clinton Creek Mine that was developed just on this side of the Yukon River about 60 miles, and there's about a 30-mile road across the Fortymile River. When the asbestos became a big issue, they closed the mine, but they left the road open, both for mineral exploration, which there's some going on over there, but also for recreational use, and I see that same parallel. I'm talking about a Canadian government, so it's a whole different deal, but I think the parallel is similar and I'd like to see us have the road available for recreational use. And with that I'll thank you very much. A54-5

MR. RILEY: Thank you. Next we have Ivar Halvarson, to be followed by Rick Solie. Is Ivar here? Apparently not. Rick Solie?

UNIDENTIFIED VOICE: Rick had to leave.

MR. RILEY: Rick had to leave, too. Well, that's everyone that I had on our list who had indicated a desire to provide some testimony. Is there anyone else who has decided he or she would like to say something?

A55 STATEMENT BY MR. KEVIN KRAUKLIS

MR. KRAUKLIS: Yeah, my name is Kevin Krauklis. I'm a former chair of the board of the Fairbanks Chamber of Commerce, also former co-chair of the Fairbanks Economic Development Corporation. I got here just before 7:00 and thought it was going to go for awhile. But listening to my fellow Fairbanksans and Interior residents, I just couldn't help myself, had to come up here and say kind of, let's review. I didn't hear one complaint about the mine, about the mine coming in and being developed. It's down to the details, in particular on the road. And I think that that is -- I really want to congratulate the community for coming out and standing with Teck-Pogo in favor of the development of the mine.

I also was very much impressed with how many people had to say positive things about Teck-Pogo, Inc. and Karl Hanneman with regard to incorporating all the input and the view of the community, and I think it's really substantial. Having lived in this community for 18 years now, 25 years in Alaska, I think it's really substantial. Thank you. A55-1

MR. RILEY: Thank you very much. Anyone else care to share some thoughts? Well, I want to thank everyone very much

for the fine testimony and participation, and we're adjourned. Thank you very much.

(Off record; 9:00 p.m.)

END OF PROCEEDINGS

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* * * *

C E R T I F I C A T E

UNITED STATES OF AMERICA)
) ss.
STATE OF ALASKA)

I, Sharon D. Gaunt, Notary Public in and for the State of Alaska and Reporter with Liz D'Amour & Associates, do hereby certify:

THAT this transcript, as heretofore annexed, is a true and correct transcription from an audiotape recorded by me;

THAT I am not a relative, employee or attorney of any of the parties, nor am I financially interested in this action.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal this 12th day of May, 2003.

Sharon D. Gaunt
Notary Public in and for Alaska
My Commission Expires: 09/03/04

COMMENT RESPONSE:

A21-1 **Kniffen, Margery:** Thank you for your comment.

A22-1 **Fowler-Morris, Judy:** Thank you for your comment.

A23-1 **Hall, Ken:** Thank you for your comment.

A23-2 Thank you for your comment.

A24-1 **Milne, Clark:** Thank you for your comment.

A24-2 Thank you for your comment.

A24-3 Thank you for your comment.

A24-4 Thank you for your comment.

A24-5 Thank you for your comment.

A24-6 Thank you for your comment.

A25-1 **Unidentified:**The reader is directed to Sections 2.3.4 and 2.3.5.

A26-1 **Unidentified:** The reader is directed to Section 2.3.4.

A27-1 **Unidentified:** This issue will be considered by ADNR during its process of developing mitigation measures for reducing impacts on Shaw Creek Road as part of its final decision for issuance of the ROW, which will be issued after publication of this FEIS.

A28-1 **Unidentified:** There are no plans for the road to be open to the public past Gilles Creek. If it eventually were to be opened after Pogo Mine closure, the Applicant would have no maintenance responsibility.

A28-2 If a segment of the road were open to the public during mine operations, the State and the Applicant would develop a road maintenance agreement that would define to roles of both entities.

A29-1 **Unidentified:** Non-public segments of the road would be available for other resource development purposes on a case-by-case basis that would include a public notice and review process conducted by ADNR.

A30-1 **Nason, Wesley:** Thank you for your comment.

A30-2 Thank you for your comment.

A31-1 **Anderson, Mark:** Thank you for your comment.

A32-1 **St. John, Jeanine:** Thank you for your comment.

A33-1 **Borell, Steve:** Thank you for your comment.

A33-2 Thank you for your comment.

A34-1 **Mittlestadt, Cindy:** Thank you for your comment.

A34-2 Thank you for your comment.

A35-1 **Huber, Mark:** Thank you for your comment.

A36-1 **Kupiszewski, Dan:** Thank you for your comment.

A36-2 Thank you for your comment.

A36-3 Thank you for your comment.

A37-1 **Moriarty, Kara:** Thank you for your comment.

A37-2 Thank you for your comment.

A37-3 Thank you for your comment.

A38-1 **Otis, Buzz:** Thank you for your comment.

A38-2 Thank you for your comment.

A39-1 **Brophy, Bill:** Thank you for your comment.

A39-2 Thank you for your comment.

A39-3 Thank you for your comment.

A40-1 **Beedle, Joe:** Thank you for your comment.

A41-1 **Matthews, James:** Thank you for your comment.

A42-1 **Freeman, Curt:** Thank you for your comment.

A43-1 **Wright, David:** Thank you for your comment.

A43-2 Thank you for your comment.

A43-3 Non-public segments of the road would be available for other resource development purposes on a case-by-case basis that would include a public notice and review process conducted by ADNR. It would be impractical at this time to anticipate the laydown area or other needs of such speculative users.

A44-1 **Williams, Orie:** Thank you for your comment.

A45-1 **Cruz, Dave:** Thank you for your comment.

A45-2 These suggestions will be considered by ADNR for its final decision for the winter road permit, which will be issued after publication of this FEIS.

A45-3 This suggestion will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

A45-4 As a result of this and two similar comments, the Applicant has decided to reroute the power line corridor out of the Sutton Creek drainage and follow the road alignment across the Shaw Creek and Goodpaster divide.

A46-1 **Vetter, Rudolph:** Thank you for your comment.

A46-2 Thank you for your comment.

A47-1 **Miscovich, Andy:** Thank you for your comment.

A47-2 Thank you for your comment.

A48-1 **Donnellan, Barry:** Thank you for your comment.

A49-1 **Barrett, Paul:** Thank you for your comment.

A49-2 Thank you for your comment.

A50-1 **Gardner, Craig:** The reader is directed to Section 4.9.5.

A50-2 Thank you for your comment.

A51-1 **Bundtzen, Tom:** Thank you for your comment.

A51-2 Thank you for your comment.

A52-1 **Fisher, Rex:** Thank you for your comment.

A53-1 **Otis, Ben:** Thank you for your comment.

A53-2 Thank you for your comment.

A54-1 **Davis, Ron:** Thank you for your comment.

A54-2 Thank you for your comment.

A54-3 Thank you for your comment.

A54-4 Thank you for your comment.

A54-5 Thank you for your comment.

A55-1 **Krauklis, Kevin:** Thank you for your comment.

Appendix E.B

Response to Comments on Draft EIS

Public Written Comments

B1

Alyeska pipeline SERVICE COMPANY
P.O. Box 196660 ANCHORAGE, ALASKA 99519-6660 TELEPHONE (907) 278-1611 FAX 787-8611

May 7, 2003 APSC Letter No. 03-19844

Mr. Ed Fogels, Pogo Project Manager
Alaska Department of Natural Resources
550 W. 7th Avenue, Suite 900D
Anchorage, Alaska 99501-3577

RE: Pogo Mine Proposed Access and Trans-Alaska Pipeline System (ADL 63574)
Preliminary Decision to Issue Road Right-of-Way
Public Notice Dated April 4, 2003

Dear Mr. Fogels:

Thank you for the opportunity to comment on this important project. Alyeska Pipeline Service Company, agent for the owners of the Trans Alaska Pipeline System, has signed a letter of non-objection agreement with Teck-Pogo, Incorporated for a controlled-access industrial road crossing at pipeline milepost 517.24. The crossing location is within the NE1/4 of Section 15, Township 7 South, Range 8 East (Fairbanks). Both the ADNR Proposed Decision and Alternative Management Option follow a route that crosses the pipeline at this location. B1-1

Alyeska recommends that the Department adopt the "Alternative Management Option" described in the preliminary decision, thereby bringing the Alyeska non-objection into alignment with the ADNR decision. During our discussions with Teck-Pogo representatives concerning the pipeline crossing, Alyeska Security managers recommended that the road be gated on the Richardson Highway side of the pipeline based on the current Security environment in which TAPS operates. B1-2

Also, We agree that the Winter Trail alternative considered in the preliminary decision is not a viable option for long-term mine access because it would pose an unacceptable threat to pipeline integrity from significant industrial loads crossing the above-ground pipeline. We do have additional concerns related to the temporary use of the TAPS rights-of-way in this vicinity for the proposed mine road construction activities, and are available to discuss these concerns further if requested. B1-3

B1

Please call me at 787-8170 if we can provide additional information.

Sincerely,

Peter C. Nagel, SR/WA
Land and Right-of-Way

CC: John Kerrigan, State Pipeline Coordinator

COMMENT RESPONSE:

B1-1 Thank you for your comment.

B1-2 Thank you for your comment.

B1-3 Thank you for your comment.

ogo mine comments

B2

Subject: Pogo mine comments
Date: Tue, 13 May 2003 19:31:03 +0000
From: "Sally Andersen" <sally_andersen@hotmail.com>
To: ed_fogels@dnr.state.ak.us

Ed Fogels

Department of Natural Resources<?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

<?xml:namespace prefix = st1 ns = "urn:schemas-microsoft-com:office:smarttags" />550 West 7th Ave., Suite 900D

Anchorage, AK 99501

ed_fogels@dnr.state.ak.us

Dear Mr. Fogels;

We are writing to comment on the issue of road access to the Pogo gold mine on the Goodpaster River. As you know, this mine is truly a watershed event not only for the Goodpaster River, but given the almost inevitable expansion and associated developments of a pioneer road corridor, for the entire region surrounding the mine.

This is why there has been a consistent, broad based expression by residents of the Interior that the road should be removed when mining is finished. For us as hunters this is especially so, as we place a very high value on a thriving Fortymile caribou herd to help put meat on our table. A third major access corridor into the heart of the Fortymile's range would be a major mistake, increasing hunting pressures on these animals immensely. It behooves the State to act judiciously. B2-1

The draft document is a good step in this direction. Your proposed decision reaches a good compromise between the dual needs of access to our forestry resources and protection of the Goodpaster River and high country beyond. Our biggest fear is about the future and making sure that the provisions about road reclamation and additional uses of the road past Gilles Creek have enough muscle to stand the test of time. We believe that the procedures listed on page 37 of the draft should be worded so as to make them mandatory, and that DNR should make an express statement that these consultations will be transparent and guarantee genuine public participation and involvement in the decision making process. B2-2

We have an opportunity to get the best of both worlds here--a large mine providing major economic benefits to the Interior which leaves a minor footprint and intact ecosystem when it is done. This project has the potential to be a model and a precedent for the future. We urge you to stay the course and include a strong position on reclamation in the final decision. B2-3

Thank you for this opportunity to comment.

Sally Andersen

Michael Wald

P.O. Box 431

Ester, AK 99725

COMMENT RESPONSE:

B2-1 Thank you for your comment.

B2-2 DNR's Preliminary Decision on the road ROW is clear in its intent that the second half of the road would be reclaimed. The issue of strengthening this intent will be addressed by ADNR in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

B2-3 Thank you for your comment.

05/12/2003 15:07 FAX 3038890707 AngloGold N A Inc. 002

B3

May 9, 2003

Ms. Hanh Gold
Office of Water
U.S. EPA Region 10
1200 Sixth Avenue, OW-130
Seattle, Washington 98101

anglogold
(U.S.A.) Exploration Inc.

Re: Pogo Gold Mine Project Draft Environmental Impact Statement

Dear Ms. Gold:

AngloGold (U.S.A) Exploration Inc. ("AngloGold") appreciates the opportunity to submit comments on the referenced matter as noticed in the *Federal Register* on March 14, 2003. *See* 68 F.R. 12348. These comments are being submitted before the close of the public comment period of May 13, 2003. AngloGold supports issuance of the necessary authorizations for the Pogo Gold Mine Project ("Pogo Project") as proposed by Teck-Pogo Inc. and addressed by the thorough Draft Environmental Impact Statement ("DEIS"). We request, however, that use of the access road be expanded to those entities (such as AngloGold) that hold an ownership interest in the property traversed by the proposed access road. B3-1 B3-2

AngloGold conducts exploration activities throughout the United States, including Alaska. AngloGold has acquired mining claims from the State of Alaska in the general vicinity of the Pogo Project and has commenced exploration activities on these claims. Results of these initial activities are encouraging and AngloGold plans to conduct more extensive exploration activities with the ultimate goal that a viable mining project be developed.

The proposal submitted by Teck-Pogo Inc. related to access is to develop the Shaw Creek Hillside all-season road with egress from the Richardson Highway for the exclusive use of the Pogo Project. Various alternatives were considered in the DIES including alternative routes (*e.g.*, South Ridge all-season, Shaw Creek Flats winter only), various users (*e.g.*, Pogo Project only, Pogo Project and other industrial/commercial users, everyone), and differing final disposition (*e.g.*, reclaim the entire route, reclaim portion of the route, leave a portion open). The identified preferred alternative is to develop the Shaw Creek Hillside all-season road with egress from the Richardson Highway for the exclusive use of the Pogo Project.

The proposed Shaw Creek Hillside road crosses state mining claims controlled by AngloGold. As noted above, AngloGold has conducted initial exploration activities on these claims and plans to conduct more extensive exploration activities this year and potentially in the future. It seems improvident from, among others, environmental and economic standpoints that AngloGold should develop its own road to access these claims when the Shaw Creek Hillside road proposed to be developed for the Pogo Project directly traverses these same claims. AngloGold respectfully requests that the approved final access road allows for use of the Shaw Creek Hillside all-season road with egress from the Richardson Highway by the Pogo Project and by those entities holding an ownership interest in the property traversed by the Shaw Creek Hillside B3-2

ANGLOGOLD (U.S.A.) Exploration Inc.
5251 DTC PARKWAY, SUITE 700 GREENWOOD VILLAGE, COLORADO 80111 PHONE 303-889-0700 FAX 303-889-0707

05/12/2003 15:08 FAX 3038890707 AngloGold N A Inc. 003

B-3

Ms. Hanh Gold
May 9, 2003
Page 2

road. The Shaw Creek Hillside road can have security gate(s) either near the end of the Shaw Creek Hillside road or Gilles Creek, as proposed in the DEIS, to prohibit access by those other than for the Pogo Project and those entities holding an ownership interest in the property traversed by the Shaw Creek Hillside road. B3-2 CONT'D.

Again, we appreciate the opportunity to submit these comments to support development of Alaska's resources, as proposed by the Pogo Project. Should you have any questions on this matter, please do not hesitate to contact me at 303-889-0703.

Sincerely,

ANGLOGOLD (U.S.A) EXPLORATION INC.

Donald J. Birak
Vice President

COMMENT RESPONSE:

B3-1 Thank you for your comment.

B3-2 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B4

Sue Jean
<suejean@gci.net>
03/21/2003 08:11 AM
Please respond to Sue Jean

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: Pogo - Quartz Lake

3-21-3003

Subject: Comments regarding the DEIS on Pogo Gold Mine

Thanks for sending the statement for my review. I own acreage on the east side of Quartz Lake; no house or other improvements are on it.
I have no objection to the development of the mine, powerline and Shaw Creek road access to the project. B4-1
However, IF either the South Ridge or Good Paster routes is seriously considered for possible access, I would have quite a few questions regarding traffic impact so near Quartz Lake. Noise, traffic and dust could ruin the atmosphere of that recreational site. B4-2

I live in Juneau and won't be attending the public meetings. Hopefully you will keep me apprised of developments as they progress.

Again, thanks -

Susan Arthur (widow of Robert Rausch, original land purchaser)
PO Box 32662
Juneau, AK 99803
907 789-3764

COMMENT RESPONSE:

B4-1 Thank you for your comment.

B4-2 Thank you for your comment.

B5

Gregory Austin
<grega@starband.net>

04/29/2003 04:13 PM

To: ed_fogels@dnr.state.ak.us, Hanh Gold/R10/USEPA/US@EPA, luke_boles@dec.state.ak.us
cc: senator_georgianna_lincoln@legis.state.ak.us, representative_carl_morgan@legis.state.ak.us, representative_john_harris@legis.state.ak.us
Subject: Letter of Support for Pogo Mine

To addressees:

I am a contractor and business owner and have lived in Delta Junction for 10 years, and in Alaska for 24 years total. I worked 6 weeks one summer at the Pogo mine. I have boated up the Goodpaster, and been an active hunter and fisherman in the greater Delta area. I have attended some briefings on the Pogo project, as well as reviewed the "DEIS". The impression I have gotten over the past several years is that the Pogo mine project has done an excellent job in answering local concerns and being sensitive to the environment. I would like to voice my wholehearted support for the project, and issuance of necessary permits. B5-1

I would specifically like to voice my support for Teck-Pogo's recommended "Alternative Management Option". The road should not be open to the public as long as the mine project deems necessary. It would not be safe to mix public traffic, motor homes, etc..., on a single lane road with ore trucks and other mine traffic. If the mine is going to pay for the road, let them use it. B5-2

I am against the closure of the road after Pogo has ended. The whole road ALL the way to the mine should become public road once mining activity in the area has ceased to cause heavy traffic. I believe our state should take every opportunity it can to increase the road system in Alaska. We have few enough roads as it is. I appreciate the opportunity to speak up, and I hope you give increased weight to what local people have to say about the project. B5-3

Sincerely,
Greg Austin
Box 309
Delta Junction, AK 99737

COMMENT RESPONSE:

B5-1 Thank you for your comment.

B5-2 Thank you for your comment.

B5-3 Thank you for your comment.

B6

Avalon Development Corp.
P.O. Box 80268
Fairbanks, Alaska 99708
Phone: 907-457-5159
Fax: 907-455-8069
Email: avalon@alaska.net
Web site: www.avalonalaska.com

April 8, 2003

VIA EMAIL: gold.hanh@epa.gov

Ms. Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Ave., OW-130
Seattle, WA 98101

Dear Ms. Gold,

On behalf of Avalon Development Corporation I am submitting these written comments on the draft Environmental Impact Statement (EIS) currently in public review for the proposed Pogo mine project in the Goodpaster Mining District, Alaska. Please accept the following comments for public record:

1. Avalon Development Corp. is an Alaska corporations whose sole business in geological exploration and development consulting for the minerals industry. Avalon has been active in Alaska since 1985.
2. Through numerous clients, some of which still maintain mineral interests in the area, Avalon has worked extensively in the Goodpaster District since 1998.
3. My self and my staff have had the opportunity to observe Teck-Pogo Inc. and its owner companies, operate in the areas since the mid-1990's.
4. Teck-Pogo Inc. has shown itself to be a good Alaska citizen and an exemplary ambassador for the Alaska mining industry.
5. Avalon supports approval of Alternative 2 of the draft EIS with the provision that the state Dept. of Natural Resources adopt the Alternative Management Plan for the Shaw Creek Hillside access road between the mine and the end of Shaw Creek road. As we understand it, this alternative management plan would see the access road open to mine usage but closed to public entry from the end of the current Shaw Creek road to the mine site. At the end of mine life the first half of the road would be opened to public use while the second half (Gilles Creek to the mine) would be reclaimed. B6-1
6. Avalon Development supports issuance of the NPDES permit as proposed in the draft B6-2

B6

2

EIS.

7. Avalon Development supports issuance of the Dept. of Conservation waste disposal permit as proposed in the draft EIS. B6-3

I appreciate the opportunity to supply my comments for your consideration. Please contact me if you have any questions or need further information.

Sincerely,
AVALON DEVELOPMENT CORP.

Curtis J. Freeman
President

CJF:na

Filename: POGO-DraftEIS-EPA-Let1.DOC

COMMENT RESPONSE:

B6-1 Thank you for your comment.

B6-2 Thank you for your comment.

B6-3 Thank you for your comment.

B7

"Ruth G. Benson" <ruthb@mosquitonet.com>
05/11/2003 06:30 PM

To: Hanh Gold/R10/USEPA/US@EPA
cc: ed_fogels@dnr.state.ak.us, luke_boles@dec.state.ak.us
Subject: Teck-Pogo, Inc.

11 May 2003

Mr. Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency (EPA)
1200 Sixth Avenue, OW-130
Seattle, WA 98101

e-mail: gold.hanh@epa.gov

Dear Mr. Hanh,

I am writing to support the Alternative Management Option proposed by Teck-Pogo, Inc. I am a professor of Geology and Geophysics, Emeritus at the Geophysical Institute of the University of Alaska Fairbanks. I have read the "open letter to citizens interested in the Pogo Project" prepared by Karl Hanneman, and am convinced that their Alternative Management Option makes good sense. B7-1

One of the things I like about this proposal is keeping the road closed to public use while the mine is in operation. I have had experience with the opening of the Haul Road on the North Slope where we were doing research beginning in 1980. The complications and abuse by public use of the road were significant.

I urge you to consider carefully the Benefits of the "Alternative

B7

Management Option" listed in the open letter referred to above. B7-1 CONT'D.

Sincerely,

Carl S. Benson

cc:
Ed Fogels, Alaska DNR
Luke Boles, Alaska DEC

--
1551 Farmers Loop
Fairbanks, Alaska 99709
Tel: 907 479-6912

COMMENT RESPONSE:

B7-1 Thank you for your comment.

B8

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I FULLY SUPPORT DEVELOPMENT OF THE POGO MINE.
THE PROJECT HAS BEEN WELL THOUGHT OUT AND ENGINEERED
I HOPE TO SEE THE REQUIRED PERMITS ISSUED SOON - ASAP. B8-1

YOUR NAME: JOHN BERGELIN, MINING ENGINEER

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B8-1 Thank you for your comment.

B9

Subject: Pogo
Date: Sat, 10 May 2003 01:58:07 -0700
From: "Brian Fairbank" <fairbank@intergate.ca>
To: <ed_fogels@dnr.state.ak.us>

Ed Fogels
Alaska Department of Natural Resources,
550 West 7th Avenue, Suite 900D
Anchorage AK 99501-3577

Dear Mr. Fogels:

As a holder of claims in the Pogo area, I am interested in the outcome of the agencies' decision on the Pogo Development Options as outlined in the DEIS.

In general, I support mining as a sustainable resource and an important contributor of necessary material and wealth to society. The mine plan for Pogo appears to very adequately protect the environment, with due regard to other interested stakeholders. I support in particular the "Alternative Management Option" as the best balance of all the interested stakeholders as well as the general public who may not have a direct active interest. B9-1

Blue Desert Mining Inc. (US.) holds mining claims immediately west of the Pogo project. Our Gobi property is optioned to AngloGold who are conducting a drilling program. The final east-west segment of the Pogo access road cuts across the Gobi property. We have a second property, called the Mojave project, in which Blue Desert has a 100% percent interest.

The development at Pogo will help other claim holders in the area and the mining industry in general to undertake the large, high risk investment that it takes to find new mines. This activity contributes greatly to the economy of the region. The granting of the access and mine permits establishes that processes are in place to protect all interests including those of the mining industry who typically must spent tens of millions of dollars in the prefeasibility stage.

The improved access will hopefully lessen the costs for low impact exploration work such as geology and geophysics and for more intensive exploration drilling and may lead to additional successful projects. I say hopefully because it is not clear that third party access will be allowed. I would hope that when the road access is established that we will be able to use it with special permits and restrictions. For example, currently our drills have to be flown in from a staging point on the Alaska highway at a high cost. Hauling the equipment by truck would simplify operations and save money, if strictly controlled, would not have any additional impact on the environment or on other stakeholders. B9-2

Thank you for your consideration of this letter.

Yours truly,
Blue Desert Mining (US.) Inc.
Brian D. Fairbank, P.Eng.
President
Phone (604) 688-1553
Fax (604) 688-5926

COMMENT RESPONSE:

B9-1 Thank you for your comment.

B9-2 Thank you for your comment.

B10

Marty <owlfin@mosquitonet.com>
05/12/2003 11:16 PM

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: Pogo Gold Mine Draft EIS

As property owners and as a family that has in the past made its' residence on the Goodpaster River and may again we believe the Pogo Gold Mine must be carefully monitored. We endorse the comments made by the Goodpaster River Property Owners Association and add an additional concern that due to our location on the river may be more severe than at other locations. B10-1

That concern is noise pollution. In the Draft EIS noise pollution is downplayed since there is jet boat and snowmachine traffic. The fact is that in the past aircraft support for the Pogo mine has flown directly over our residence as often as every half hour all day long. That is a lot of noise pollutiion that strains the nerves Whereas, boat and snowmachine traffic makes so much less noise that often we don't even hear them. Plus the ground traffic volume is so small it is easy to ignore.

On the other hand the aircraft make more noise, fly more regularly and can't be ignored. If I were listening to the same noise in town it wouldn't be nearly as bothersome because of the general city background noise. On the river the amount of noise is much more irritating against the general quiet. Plus, I've noticed that since Pogo has been flying airplanes we no longer have the moose and owls in our area of the river that used to be there. B10-2

What do we want? We want any aircraft support for Pogo mine to fly a route that avoids our and any other routinely occupied cabin. There are some folks who seldom use their cabins. So, for them the problem is nonexistent. But, for us who spend either full time, or substantial time on the river noise pollution is a real issue.

When we discussed this with the Pogo mine representative he indicated no objection to flight route restrictions. He also indicated the problem would be much smaller in the future. But to protect us against personnel,attitude and flight schedule changes flight route restrictions to minimize noise pollution to the residence areas must be in the final permit. Of course flight restrictions should not affect aircraft on life safety missions such as medical evacuations.

Fred & Marty Brantingham

COMMENT RESPONSE:

B10-1 Thank you for your comment.

B10-2 Air access noise impacts are discussed in Section 4.5. A new discussion of Construction Impacts common to all alternatives has been added to Section 4.5.2. No agency providing authorizations for construction and operation of the Pogo project has the authority to regulate flight paths for project-related aircraft. The Applicant, however, has indicated a willingness to alter flight paths to reduce noise impacts to cabins.

B11

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

After Reviewing the Information I've seen, I believe that this is Environmentally sound. The plans presented by pogo seem to be well planned. B11-1

The Boost to the local Economy will be a good thing. B11-2

YOUR NAME: Mark Bridges

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B11-1 Thank you for your comment.

B11-2 Thank you for your comment.

B12

William S. Brophy
301 Snowy Owl Lane
Fairbanks, AK 99712

Mr. Hahn Gold
Pogo DEIS Project Manager
U.S. Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101

Mr. Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

4-30-03

Dear Messrs. Gold and Fogels,

I submit the following comments regarding the Draft EIS report for the Pogo Gold Mining Project.

I support the Preferred Alternative identified in the DEIS report with the provision that the AKDNR adopts the Alternative Management Option for the Shaw Creek Hillside access road. B12-1 I support the option to allow public access to the road after the mine life. B12-2 This will provide safety to the public, reduce impacts to subsistence, trapping, commercial, and recreational use of the land.

I also endorse the draft NPDES permit and the draft AKDEC waste disposal permit. B12-3

Teck-Pogo Inc. has been a model steward of Alaska's resources. The project will be a tremendous boost to economic development and create numerous high-paying skilled jobs for Alaskans during construction and operations. B12-4

Let's get moving on the permit process and get to work.

Thank you for your time and attention in this regard.

Sincerely,

William S. Brophy

COMMENT RESPONSE:

B12-1 Thank you for your comment.

B12-2 Thank you for your comment.

B12-3 Thank you for your comment.

B12-4 Thank you for your comment.

B13

From: Lou Brown and Jon Miller
[loubrown@gci.net]
Sent: Thursday, May 22, 2003 6:37 PM
To: ed_fogels@dnr.state.ak.us
Subject: Pogo Mine comments

Dear Mr. Fogles,

We are submitting comments on the proposed road to the Pogo mine. As a couple who relies heavily on game every year, we consider it most important that another avenue of permanent access not be opened into the range of the Fortymile Caribou Herd. Caribou need large chunks of healthy, undisturbed habitat, and the Pogo road would set the stage for an ever spreading network of roads throughout that region. We don't want to see the excellent work which has been done to help that herd recover be compromised in the future. B13-1

Thank you for incorporating the public's concerns on this issue into the Proposed Decision. After the unpleasant Intertie controversy, we frankly did not have high expectations. It is good to see that cooperation between industry, agencies and public can bear fruit. We think that the balance you have struck between permanent road development and road removal is a reasonable one. Our biggest concern is that the policies regarding additional uses of the second portion of the road and reclamation after mine closure need to be "written in stone" to prevent them from being rendered ineffective in the future. We urge you to strengthen these sections to ensure that aim is acheived. Specifically, the word "will" on page 37 should be changed to "shall", and the subsequent bullet points should be expanded to elaborate upon the procedures that will be used to ensure an open, fair and thorough process to examine any such uses. B13-2

Lastly, we believe that the portion of road in the State Forest should be kept closed for the duration of mining, and encourage you to adopt the relevant Alternative Management Option. B13-3

Sincerely,

Linda S. Brown
Jon H. Miller
2630 Home Run
Fairbanks, AK 99709

COMMENT RESPONSE:

B13-1 Thank you for your comment.

B13-2 Thank you for your comment.

B13-3 Thank you for your comment.

B14

Sue Brown
<alaskasuebrown@yahoo.com>
04/29/2003 01:56 PM

To: ed_fogels@dnr.state.ak.us, Hanh Gold/R10/USEPA/US@EPA
cc: senator_georgianna_lincoln@legis.state.ak.us, representative_carl_morgan@legis.state.ak.us, representative_john_harris@legis.state.ak.us
Subject: Pogo Mine

April 29, 2003
<?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />
Dear Mr. Fogels and Mr. Gold,

I came to live in Delta Junction four years ago. I am recently widowed, and plan to remain in Delta Junction. I have a BS degree in Recreation Administration. I am an avid fisherman, and outdoor woman. I plan to take a trip up the Good Pasture River this summer with friends who a familiar with the area. I am finding that this whole area has much to offer for Alaskans both now and in the future.
I am aware of the development of the Pogo Mine Project and I support the "Alternative Management Option" for the access road for the following reasons:

1. I think it would be wise to have the road closed to public use for safety reasons such as, substandard road construction and lack of service to the area.
2. In order to better facilitate the mining project. They don't need extra traffic on the road while they are trying to get the work done.
3. Since the mine would pay for the road they should be the primary ones using it.

B14-1

I would like to see the State upgrade the road after mine life rather than closing it, to open the area up to public recreational pursuits, and possible further resource exploration. B14-2

Thank you for considering my comments in this matter,
Sincerely, Sue Ann Brown

HC 62 Box 5778
Delta Junction, Ak 99737
907-895-4644

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COMMENT RESPONSE:

B14-1 Thank you for your comment.

B14-2 Thank you for your comment.

B15

Calista Corporation

301 Calista Court, Suite A • Anchorage, Alaska 99518-3028 • (907) 279-5516 • Facsimile (907) 272-5060 • Website: www.calistacorp.com

Hahn Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

RECEIVED
U.S. EPA REGION 10
OFFICE OF WATER

Ed Fogels
Alaska Department of Natural Resources
550 West Seventh Avenue, Suite 900D
Anchorage, AK 99501-3577

May 8, 2003

Dear Gentlemen:

Calista Corporation supports natural resource and economic development in Alaska, especially in rural areas of the state. Diversification and development of rural economies is the most important step towards local autonomy and allowing local residents to participate in and contribute to the state's economic well-being. For these reasons, Calista endorses the Preferred Alternative identified in the Pogo Project Draft Environmental Impact Statement, with the provision that the State adopt the Alternative Management Option for the Shaw Creek Hillside access road. It is important that the environmental Protection Agency and the Alaska Department of Natural Resources complete the permitting process for the Pogo Project in a timely manner. B15-1

Teck-Cominco operates numerous mines around the world in environmentally responsible fashion and has an excellent reputation for commitment to local communities. During the evaluation and design stages of the Pogo Project, the company has demonstrated a commitment to local residents in their planning, permitting and operation of the mine.

Teck-Cominco has designed an advanced mining operation that will minimize footprint and impact on the environment. The operation will meet Alaska water quality and other environmental standards and will not degrade the quality of the Goodpaster River. Environmental impact as described in the DEIS will be far outweighed by the socio-economic benefits.

Benefits of the project will include:

- Teck-Cominco plans to invest about $250 million capital into an undeveloped area of the Alaska.

B15

- The State will realize increased revenues, providing a new source of relief to the State's burdened finances.
- Numerous local businesses will benefit from the increased opportunities.
- Hundreds of new jobs during construction and mine operation will have enormous positive effect on the local economy.

Implementation of the Alternative Management Option for the Shaw Creek Hillside Road will:

- Increase State revenues for right-of-way fees, material and timber sales.
- Optimize public safety during the course of the mine operation.
- Minimize impact from off-road vehicles.
- Ensure minimum impact on subsistence resources.
- Assure return of the environment to a more natural state following completion of mine operation.

Thank you for the opportunity to comment on this important project.

Sincerely,

Matthew Nicolai
President and Chief Executive Officer

COMMENT RESPONSE:

B15-1 Thank you for your comment.

B16

I (PRINT YOUR NAME) Travis Capps FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

POGO PROJECT

GOODPASTER ACCESS / NO CHANGE TO EXISTING ACCESS TO THE GOOD PASTER RIVER

LIABILITY / THE POTENTIAL FOR LOOTING FROM PEOPLE WITH PRIVATE PROPERTY IF THE ROAD IS OPEN TO THE PUBLIC

EXISTING SHAW CREEK ROAD/ BY NOT OPENING THE ROAD TO THE PUBLIC THERE WILL NOT BE A LOT OF TRAFFIC ON THE SHAW CREEK ROAD OTHER THEN MINING EQUIPMENT COMING AND GOING TO THE MINE

RECREATION/ BY NOT OPENING THE ROAD TO THE PUBLIC EXISTING RECREATION IN THE AREA WOULD NOT BE AFFECTED, THAT AND THE ALASKA DEPT. OF FISH AND GAME WOULD NOT MAKE THE AREA A SPIKE FORK FIFTY AREA FOR MOOSE. WITCH WOULD BE A HARDSHIP ON THE PEOPLE THAT DEPEND ON MOOSE MEAT TO FEED THEIR FAMILIES B16-1

SAFETY/ BY NOT OPENING ACCESS TO THE PUBLIC WOULD SAVE LIVES AND HELP THE MINE RUN WITH OUT HAVING PEOPLE IN THE WAY

COMMERCIAL RECREATION/ ACCESS TO SHAW CREEK VALLEY WOULD NOT BE AFFECTED BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS AND WOULD KEEP UNWANTED LOOTERS OUT OF THE AREA

TRAPPING / BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS YOU WOULD NOT HAVE ANY PROBLEMS WITH TRAPPERS, PEOPLE WOULD NOT BE OUT THERE STEALING THE CATCH AND DESTROYING THEIR TRAP LINES

SUBSISTENCE/ IF THE MINE ROAD WAS OPENED YOU WOULD RUIN THE HUNTING FOR A LOT OF PEOPLE BECAUSE THE ALASKA DEPT. OF FISH AND GAME HAS ALL READY SAID THAT THEY WOULD MAKE THE AREA SPIKE FORK FIFTY INSTEAD OF ANY BULL WITCH WOULD MAKE A HARD SHIP ON PEOPLE THAT HUNT MOOSE TO FEED THERE FAMILIES

ORV USE OF THE SHAW CREEK VALLEY / WOULD NOT BE AFFECTED THEY COULD STILL GO WHERE THEY GO KNOW BY LEAVING THE MINE ROAD CLOSED TO THE PUBLIC, AND KEEP FROM HAVING A BIG SURGE OF PEOPLE IN THE AREA

B16

TIMBER / THE TIMBER IN THE AREA COULD BE LOGGED BY WORKING WITH THE MINE TO USE TO ROAD FOR ACCESS TO THE TIMBER AND ANY ROADS THE LOGGERS MAKE MUST BE RECLAIMED WHEN THEY ARE FINISHED LOGGING

MANAGEMENT OF THE WHOLE ROAD BY THE TECH -POGO INC./ THE MINE SHOULD MANAGE THE WHOLE ROAD AS FAR AS ACCESS FOR SAFETY SO THERE IS NO ONE GETTING RUN OVER AND IN THE WAY OF MINING TRUCKS AND EQUIPMENT, AND TO OF UNWANTED PEOPLE IN THE AREA WHERE WE WILL HAVE PEOPLE STEALING AND LOOTING PRIVATE PROPERTY IN THE AREA, AND WHEN THE MINE IS FINISHED IN THE AREA, THEY RECLAIM THE ROAD BACK TO THE START OF IT AT THE FOWLER DAIRY B16-1 CONT'D.

NAME: Travis Capps
ADDRESS: 3841 Tanadla Rd
PHONE : 488-3002
DATE: 4-30-03

COMMENT RESPONSE:

B16-1 Thank you for your comment.

B17

CARLILE TRANSPORTATION SYSTEMS, INC.
1800 East 1st Avenue • Anchorage, AK 99501
(907) 276-7797 • FAX (907) 278-7301

April 3, 2003

Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite #900D
Anchorage, Alaska 99501-3577

Dear Mr. Fogels,

This letter is a statement of support for the construction of an access road adjacent to Shaw Creek located south of Fairbanks and 38 miles northeast of Delta Junction. The monetary investment by Tech-Pogo and new job opportunities generated by the mine startup will be a boon to the region as well as a needed spike in the economy of the State of Alaska. We highly recommend the "ALTERNATIVE MANAGEMENT OPTION" for the proposed road, as this option would result in the least environmental disruption over the period of mine development and optimum safety of project personnel. We hope you will consider this letter of support in your decision to support expedited permitting for the road so the Pogo Mine Project may become a reality in 2003. B17-1 B17-2 B17-3

Sincerely,

Harry McDonald
President

Cc: Eddie O'Rear – Carlile Fairbanks

COMMENT RESPONSE:

B17-1 Thank you for your comment.
B17-2 Thank you for your comment.
B17-3 Thank you for your comment.

Seattle • Anchorage • Kenai • Seward • Fairbanks • Prudhoe Bay

B18

Fred L. Coffield
P.O. Box 893
Delta Junction, Ak. 99737

[Put your name and address here]

April 30, 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

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MAY 12 2003
U.S. EPA REGION 10
OFFICE OF WATER

Dear Ms. Gold

I am a resident of the Delta Junction area and strongly support Teck-Pogo's development of the Pogo mine and the economic growth that it will bring to the area. I firmly believe that the economic benefit the mine will provide will easily outweigh the perceived environmental impacts, if any. B18-1 B18-2

Furthermore, I support the preferred alternative to construct an all-season access road to the mine facility. B18-3

Please include me on any future mailings pertaining to the Pogo mine project.

Sincerely,

[Your name]

COMMENT RESPONSE:

B18-1 Thank you for your comment.
B18-2 Thank you for your comment.
B18-3 Thank you for your comment.

B19

Cross Town Insurance

P O Box 71410
Fairbanks, AK 99707
907/452-6891
fax:45

2-4858
E-MAIL: cross-town@gci.net

April , 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Ave. OW – 130
Seattle, WA. 98101

RE: Pogo Gold Mine Project

After reviewing the DNR summary of the environmental impact statement and the four alternatives to be considered, I would like to comment.

The agency Preferred Alternative would seem to be the choice that makes the most sense. If the final recommendation must be one of the alternatives listed than of course we support the preferred one. B19-1

However we would like to add the comment that to destroy or re-claim the last 26 miles of road as part of the agreement 11 years before the mine life is over is both short sighted and premature. This is state land and who can tell what future mineral development will take place during the next 11 years. Why should we make a hasty decision now? We may face a number of right away problems that will add millions in future costs. B19-2

We might be wiser to hold our options open in 2003 and look at the situation in 2014.

Sincerely;

Gordon E. Depue

Gordon E. Depue

CC: Department of Natural Resources
550 West 7th Ave., Suite 900 D
Anchorage, AK 99501-3577

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COMMENT RESPONSE:

B19-1 Thank you for your comment.

B19-2 Thank you for your comment.

B20

Mike Crouch
<mikeatdis@hotmail.com>
04/25/2003 08:20 PM

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: pogo

I have reveiwed the DEIS for the Pogo Mine Project, including the DNR and DEC appendices, and enthusiasticly support this project.

My only other comment would be that the alternative option would be used for road management due to increased public safety. B20-1

I am a 26 year Alaskan resident and have lived in Delta Junction the last 10 years.

Thank You

Mike Crouch
Delta Industrial Services, Inc.
mikeatdis@hotmail.com
Phone:907-895-5053
Fax: 907-895-6205
Website: deltaindustrial.com

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COMMENT RESPONSE:

B20-1 Thank you for your comment.

B21

Subject: pogo
Date: Fri, 25 Apr 2003 19:07:23 -0800
From: "Mike Crouch" <mikeatdis@hotmail.com>
To: ed_fogels@dnr.state.ak.us

After reveiwing the options for road management to the proposed Pogo Mine Project, I support the alternative option. I believe the main issue would be the problems the commercial traffic would have with the private traffic and the safety issues involved. B21-1

I am a 26 year Alaskan resident and have lived in Delta Junction for 10 years. The Pogo Mine Project has my enthusiastic support.

Thank you

Mike Crouch
Delta Industrial Services, Inc.
mikeatdis@hotmail.com
Phone:907-895-5053
Fax: 907-895-6205
Website: deltaindustrial.com

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COMMENT RESPONSE:

B21-1 Thank you for your comment.

B22

Subject: FW: pogo
Date: Mon, 12 May 2003 13:04:46 -0800
From: "Boles, Luke" <Luke_Boles@dec.state.ak.us>
To: "Ed Fogels (E-mail)" <ed_fogels@dnr.state.ak.us>

Ed, Here is the only comment I've received that I didn't see you copied on. I'll fwd any more along that come in that you're not copied on.

Luke

-----Original Message-----
From: Mike Crouch [mailto:mikeatdis@hotmail.com]
Sent: Friday, April 25, 2003 7:14 PM
To: luke_boles@dec.state.ak.us
Cc: mike@deltaindustrial.com
Subject: pogo

After reveiwing the DEIS for the Pogo Mine Project, including the Waste Disposal Permit from DEC, I enthusiasticly support this project. B22-1

I am a 26 year resident of Alaska and have lived in Delta Junction the last 10 years.

Yhank You

Mike Crouch
Delta Industrial Services, Inc.
mikeatdis@hotmail.com
Phone:907-895-5053
Fax: 907-895-6205
Website: deltaindustrial.com

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COMMENT RESPONSE:

B22-1 Thank you for your comment.

B23

Subject: Pogo Mine
Date: Thu, 3 Apr 2003 9:4:16 -0800
From: "Patti Degenhart" <clintandpatti@earthlink.net>
To: edf@dnr.state.ak.us

I am strongly in favor of the Pogo mine reaching production as soon as possible. B23-1
Clint Degenhart
--- Patti Degenhart
--- clintandpatti@earthlink.net
--- EarthLink: The #1 provider of the Real Internet.

COMMENT RESPONSE:

B23-1 Thank you for your comment.

B24

Steve Denton
PO Box 149
Healy, Alaska 99743

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May 7, 2003

Mr. Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Mr. Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

Re: Pogo Mine Project, Draft EIS

This letter is written in support of the Pogo Mine Project and to provide comments on the Draft EIS (DEIS).

The DEIS does a thorough job of evaluating all reasonable alternatives to the project and therefore provides a complete statement upon which to base project permitting decisions. The agencies' Preferred Alternative should be accepted as the preferred alternative and the basis for project development and permitting. On the basis of the DEIS, the water discharge (NPDES) and waste disposal permits should be issued as proposed in the respective draft permits. B24-1 B24-2

Regarding access and use of the road by the general public. Requiring the mine operator to maintain the first half of the access road for general public use is unduly burdensome and a potential safety hazard to persons not familiar with activities associated with mine use of the road. A better alternative is the Alternative Management Option described by DNR, which opens the road to public use after completion of mining. B24-3

The Pogo Mine project is a win-win project for Alaska. Alaska will reap the rewards of new resource jobs, general stimulation of our economy and new infrastructure to enhance long term prospects for additional future resource development. TeckCominco has demonstrated itself as an excellent corporate citizen in its past endeavors in Alaska, such as the Red Dog Mine, and the Pogo Mine is certain to provide lasting benefits to Alaska and its citizens.

Alaska sees a precious few opportunities such as this, which can provide good jobs for Alaska's future generations. This is an important issue for a grandfather such as me, who would like to see his grandkids have the opportunity to stay in Alaska. I urge you to approve the DEIS and the agencies' Preferred Alternative and provide for timely completion of the permitting process so the project's benefits can begin to accrue as soon as possible.

Sincerely

Steve W. Denton

COMMENT RESPONSE:

B24-1 Thank you for your comment.
B24-2 Thank you for your comment.
B24-3 Thank you for your comment.

MAY-09-2003 FRI 04:31 PM DOYON UNIVERSAL SERVICES FAX NO. 9075223531 P. 01

B25

DOYON UNIVERSAL SERVICES
JOINT VENTURE

701 WEST 8TH AVENUE, SUITE 500 ANCHORAGE, ALASKA 99501
(907)522-1300 • FAX(907)522-3531

May 9, 2003

Mr. Hahn Gold
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Dear Mr. Gold:

Doyon Universal Services supports the Preferred Alternative identified in the Tech-Pogo Mine Draft Environmental Impact Statement, with the provision that the Alaska-Department of Natural Resources adopt the Alternative Management Option for the Shaw Creek Hillside access road B25-1 B25-2

Doyon Universal Services (DUS) is a partnership of Doyon Limited and Universal Services. DUS employs 750 individuals and primarily providing catering, security, and maintenance services to remote site locations in support of the Oil & Gas, Mining and Construction industries. DUS has provided catering and housekeeping services for the Pogo Gold Mine project since 1997. One of the priorities of working with Tech-Pogo has been the support of interior Alaska businesses and employees. We have worked cooperatively with Pogo to support the exploration phase of the project with local Alaska vendors and employees.

Adoption of the Alaska Department of Natural Resources Alternative Management Option for the Shaw Creek Hillside access road will allow for the following advantages for the Pogo Mine Project B25-2

- Increase safety for the public,
- Reduce short term impacts to subsistence, trapping and commercial recreation,
- Reduce short-term impacts to wetlands from ORV use, and
- Increase revenue to the State from right-of-way fees, material sales and timber sales receipts.

We suggest that the EPA and the Alaska Department of Natural Resources resolve the permitting issues for timely construction of the Pogo Mine project. There is tremendous up side from granting Pogo Mine its necessary operating permits: B25-3

1. Approximately $250 million investment by Teck-Pogo to begin construction;
2. **500 new jobs** during the first two years of construction and **300 permanent year round jobs** during the gold mine's operation;
3. Increased revenues to the state; and
4. Economic stimulation to interior Alaska and surrounding communities.

DUS look forward to the successful development of the Tech-Pogo mine. Please contact me if you have any questions.

Very truly yours,

Mark G. Huber
Vice President

COMMENT RESPONSE:

B25-1 Thank you for your comment.

B25-2 Thank you for your comment.

B25-3 Thank you for your comment.

B26

Subject: Pogo Project
Date: Tue, 29 Apr 2003 21:42:28 -0800
From: Jim Drew <jimd@gci.net>
To: ed_fogels@dnr.state.ak.us

Mr. Fogels:

The purpose of this letter is to express support for the "Agency Preferred Alternative" in the Draft EIS for the Pogo Project with the stipulation that DNR adopt the "Alternative Management Option" for management of the access road. In my judgment, the "Preferred Alternative with the "Alternative Management Option" gives the best opportunity to derive economic growth and jobs for people in the mining project and, at the same time, provides protection for elements of the environment that would be more severely impacted by fewer restrictions on the operation of the access road. B26-1

In addition, I also support the draft permit for the National Pollution Discharge Elimination System (NPDES) and the draft Department of Environmental Conservation (DEC) waste disposal permit. The steps defined in these permits will permit the mining operation to operate in an economically feasible manner and will also provide reasonable protection of water quality in the Pogo Project watershed. B26-2

In summary, I fully support the "Alternative Management Option" in the "Agency Preferred Alternative" and the draft NPDES permit and draft DEC waste disposal permit for the Pogo Project.

James V. Drew
4725 Villanova Drive
Fairbanks, Alaska 99709

COMMENT RESPONSE:

B26-1 Thank you for your comment.

B26-2 Thank you for your comment.

B27

carol dufendach
<cdufendach@hotmail.com>
04/29/2003 12:00 PM

To: ed_fogels@dnr.state.ak.us, Hanh Gold/R10/USEPA/US@EPA
cc: senator_georgianna_lincoln@legis.state.ak.us, representative_carl_morgan@legis.state.ak.us, representative_john_harris@legis.state.ak.us
Subject: Pogo Mine

April 29, 2003
Dear Mr. Fogels and Mr. Gold,
I am a 35 year Delta Junction resident. My husband and I have been land owners in the Delta area and have enjoyed the wonders of the Good Pasture River. Our children have fond memories of many successful camping trips in the Central Creek area via our river boat.

I have followed with great interest the development of the Pogo Mine project. I support the "Alternative Management Option " for the access road. My concerns in having the road open during the active phase of the mine are:
1. Roadway construction not to public use standards thereby creating un safe driving conditions.
2. To respect the privacy of the local population.
3. To limit general public motor vehicle access to a fragile environmental area. B27-1

I think the management of the Pogo Mine project, specifically Mr. Karl Hanneman and Mr. Bill Bieber have been very sensitive to the needs of the Delta Community and are to be commended to you. B27-2

Thank you for considering my opinion in this matter.
Carol Dufendach
PO Box 309
Delta Junction, Alaska 99737
907 895-4309

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COMMENT RESPONSE:

B27-1 Thank you for your comment.

B27-2 Thank you for your comment.

B28

Subject: **pogo road permit**
Date: Thu, 1 May 2003 08:23:11 -0800
From: "Curtis Dufendach" <cd@deltaindustrial.com>
Organization: Delta Industrial Services
To: <ed_fogels@dnr.state.ak.us>

I am writing to express my support for the pogo road permit.
I this mine will have a large positive impact on the community of Delta Junction and I recommend that you approve the permit to construct the road. B28-1

sincerely,
Curt Dufendach
Delta Industrial Services

Curtis Dufendach <cd@deltaindustrial.com>

COMMENT RESPONSE:

B28-1 Thank you for your comment.

B27

Jon Dufendach
<jwd@deltaindustrial.com>

04/18/2003 01:38 PM
Please respond to Jon Dufendach

To: ed_fogels@dnr.state.ak.us, Hanh Gold/R10/USEPA/US@EPA
cc: senator_georgianna_lincoln@legis.state.ak.us, representative_carl_morgan@legis.state.ak.us, representative_john_harris@legis.state.ak.us
Subject: Letter of Support for Pogo Mine

Dear addressees, I am a business owner and farmer who has resided in the Delta area since 1962. I have had pack strings in the past and rode the trails with my family in the Goodpaster, Campbell Lake, and Rosa Ridge, etc. areas over the years. I own a river boat as I have for over 40 years and regularly run the Goodpaster River. I have done contracting work on site at the Pogo mine, attended numerous briefings on the project, flown the proposed route to the mine and attended mining conferences including a seminar on the Tintina Gold Belt in Vancouver. I have recieved and reviewed the Executive Summary, Draft EIS for the above project. For these reasons I can state that I am intimately familiar with the project, the area and within the limitations of the executive summary, the EIS.

I believe that the sensitivity to local concerns and environmental issues demonstrated by the senior management of the Pogo Mine (Teck Corporation), specifically Karl Hannemann and Bill Bieber, have been exemplary. They have done their homework and are proceeding with a project which is extremely well-managed and planned. I support project in general and the "Alternative Management Option" for the haul road for the following reasons: B29-1

1. Although the road will be constructed above forestry standards, it will not meet secondary road standards normally required for a public road.
2. The purpose and cost of the road is supported by the mine and the public should not use it until either the road is upgraded to meet secondary or better standards, at public expense. B29-2
3. Although I have no objection to other commercial uses such as logging, general public use means other than commercial drivers will be on the road which could present an undue hazard to the business at hand: transport of mine supplies and personnel by large vehicles on a narrow, winding, hilly road without emergency or public safety support. I therefore do not favor general public use under the proposed road scenario.

One further comment: I disagree with the statement in draft EIS Summary, pg S-23, as follows: "The probability of another mine or other large development occurring in the area prior to the closure of the Pogo Mine is low". This statement reflects a complete lack of economic information on the part of the writer. The huge mineral potential in the Pogo-area portion of the Tintina Gold Belt is documented and readily available; two of many references are cited below. I am therefore opposed to any plan involving closure of the road after completion of the project; to the contrary, I believe the State should plan to upgrade the road to secondary standards and thereby assist exploration and development of the area post-Pogo. Precedent for this was established by the state take-over and upgrade of the North Slope Haul Road. B29-3 B29-4

Thank you for the opportunity to comment. References are: 1) Alaska Mineral Exploration Activity Map,1999, Enersource, Calgary AB, 403-269-7877; 2) The Tintina Gold Belt: Concepts, Exploration, and Discoveries, Special Volume 2, BC and Yukon Chamber of Mines, Cordilleran Roundup, January 2000.

Sincerely, Jon Dufendach, Box 309, Delta Jct AK, 99737, 907-895-5053

COMMENT RESPONSE:

B29-1 Thank you for your comment.

B29-2 Thank you for your comment.

B29-3 Typically, from initial discovery to mine production normally takes between 10 to 15 years in Alaska. Today, there is no known discovery in the Pogo project area. While there could be a new discovery during the life of the Pogo mine, the probability of a mine going to production during this period is low.

B29-4 Thank you for your comment.

B30

Julia Dufendach
<julia@deltaindustrial.com>

05/13/2003 03:34 PM
Please respond to Julia Dufendach

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: Fw: Comment Re: Pogo Gold Mine, Delta Junction, Alaska

Ms. Gold:

Please register my support for EPA's DEIS concerning the referenced project. B30-1

Thank you for your time and dedication,

Julia Dufendach
Delta Industrial Services, Inc.

COMMENT RESPONSE:

B30-1 Thank you for your comment.

t Re: Tech-Pogo, Inc.

B31

Subject: Comment Re: Tech-Pogo, Inc.
Date: Tue, 13 May 2003 11:02:55 -0800
From: "Julia Dufendach" <julia@deltaindustrial.com>
Organization: Delta Industrial Services, Inc.
To: <ed_fogels@dnr.state.ak.us>

Dear Mr. Fogels:

Please register my support for DNR's "Alternate Management Option." I believe that restricted access to their proposed road will increase security and lower operating costs significantly, therby enhancing the financial viability of this important project. B31-1

Thank you for your time and dedication,

Julia Dufendach
Delta Industrial Services, Inc.

Julia Dufendach <julia@deltaindustrial.com>
Delta Industrial Services, Inc.

COMMENT RESPONSE:

B31-1 Thank you for your comment.

Comment re: Teck-Pogo, Inc.

B32

Subject: FW: Comment re: Teck-Pogo, Inc.
Date: Tue, 13 May 2003 11:35:12 -0800
From: "Boles, Luke" <Luke_Boles@dec.state.ak.us>
To: "Ed Fogels (E-mail)" <ed_fogels@dnr.state.ak.us>

-----Original Message-----
From: Julia Dufendach [mailto:julia@deltaindustrial.com]
Sent: Tuesday, May 13, 2003 11:09 AM
To: luke_boles@dec.state.ak.us
Subject: Comment re: Teck-Pogo, Inc.

Mr. Boles:

Please register my support for Teck-Pogo's proposed mine development plan at Pogo Gold Mine, Delta Junction, Alaska, as well as my support for the issuance of their Waste Disposal Permit and the NPDES permit. B32-1 B32-2

Thank you for your time and dedication,

Julia Dufendach
Delta Industrial Services, Inc.

Julia Dufendach <julia@deltaindustrial.com>
Delta Industrial Services, Inc.

COMMENT RESPONSE:

B32-1 Thank you for your comment.

B32-2 Thank you for your comment.

B33

Subject: Pogo Road - Shaw Creek
Date: Fri, 25 Apr 2003 17:27:31 +0000
From: "Jeffrey Durham" <akdurhams@hotmail.com>
To: ed_fogels@dnr.state.ak.us

Dear Mr. Fogels,

My name is Courtney Durham and I grew up on the dairy at the end of Shaw Creek Road. I would like to state for the record that I support the alternative management option that limits public access on the Pogo Road during the period of time in which the mine is operating. This alternative provides for better public safety and less impact on the area and its residents. I am pro-development and support the mine and the use of the Shaw Creek route, however, I am very concerned about the area being over run by traffic and am concerned for my family and friends who live on Shaw Creek Road. The alternative management option helps address these concerns. B33-1

Thanks You,

Courtney Durham
P.O. Box 815
2630 Hannan Road
Delta Junction, Alaska 99737
(907) 895-2075

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COMMENT RESPONSE:

B33-1 Thank you for your comment.

B34

Subject: Pogo Road - Public Access
Date: Mon, 21 Apr 2003 23:14:52 +0000
From: "Jeffrey Durham" <akdurhams@hotmail.com>
To: ed_fogels@dnr.state.ak.us

Dear Mr. Fogels,

I would like express my support of the Alternative Management Option for the Pogo Mine road in the Shaw Creek area, which would open the 1st half of the road to the public after the mine ceases operation and the 2nd half of the road closed to the public and reclaimed after the mine ceases to operate. B34-1

Thank you,
Jeffrey Durham
PO Box 815
Delta Junction, AK 99737

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http://join.msn.com/?page=features/virus

COMMENT RESPONSE:

B34-1 Thank you for your comment.

B35

To
ED Fogels

I like To MAKE A Comment
About this ROAD going Through SHAW Creek
AND PART of The TRAP Line HILLS of MINE
I run A 100 mile line in THAT AREA
the ROAD crosses lots of my TRAILS. I ALSO
Run A Business CALL Trapline Expeditions
DOG SLED Expeditions Into THAT AREA
your ROAD WILL HAVE A BAD eAfect on B35-1
my Lively Hood (WINTER Employment) I'VE MADE
A living in the WINTER in Tron HILLS SINCE
1968, I HATE TO see you crush ME
so you can prosper, and have no respect
for my Business, THAT road will not
Be of Any Good To me, I Don't KNOW How
you could Compensate or EVEN if you
care to If GATE is open To public
IT will Be disaster for ME The road
will reck DOG SLED EXP No one B35-2
wants a wilderness Experience in A
NOW wilderness AREA. Trapping may
Survive if The road is closed. I HAVE
A Key to The Pipeline PAD THAT WAS They DID
when They came Trough my line
695 4101 Reb Ferguson BOX 190 DELTA AK

COMMENT RESPONSE:

B35-1 Shaw Creek Road is a public road that provides access to a large block of state land managed for multiple concurrent use, including mineral, timber, and other industrial development. It would be unrealistic for residents bordering on wide spreads of state land to expect that such land would not be developed at some point. This is especially true given that resource development for these state lands has been contemplated for many years, beginning with timber planning in the 1970s.

The management intent for these lands was determined, after a public process, by the Tanana Basin Area Plan in 1985. Another public process further refined this management intent when the TBAP was updated in 1991. In addition, the 1988 TVSF Management Plan and its 2001 update also underwent a significant public process to determine management intent for these lands. The existing Shaw Creek Road itself was developed for access to agriculture, and has a history of commercial traffic from the onset.

B35-2 Thank you for your comment.

B36

Tony Follett
<afollett@aeromap.com>

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: Comments on Pogo DEIS

04/15/2003 09:04 AM

Gentlemen:

Regarding the Draft Environmental Impact Statement for the Pogo Gold Mining Project, We support the **Preferred Alternative** and **Alternative Management Option** for road access to the mine site. B36-1

The **Alternative Management Option** will provide a number of significant benefits. In summary, we believe this option will result in increased public safety, lower impact on the environment and other uses of the land, and increased revenue to the State. B36-2

AeroMap U.S. is a full-service photogrammetric firm founded in Anchorage in 1960. In our 40+ year history we have provided aerial photography and mapping services to virtually every natural resource development company that has worked in Alaska. For the Pogo project, we served as a mapping consultant to Teck Cominco and produced photography and contour data for alternative access corridors. Our experience in working with Teck Cominco is that they are very sensitive to environmental and lifestyle issues, and are committed to doing this project right.

Because of our very positive experience of working with Teck Cominco, and because the State needs this mining project, we encourage you to expedite the permitting process for the Pogo Gold Mining Project. Thank you for your consideration of our comments.

Sincerely,

Tony Follett
AeroMap U.S.
2014 Merrill Field Drive
Anchorage, AK 99501
Tel 907-272-4495
Fax 907-274-3265
Cell 907-223-4809

COMMENT RESPONSE:

B36-1 Thank you for your comment.

B36-2 Thank you for your comment.

B37

George Fowler
P.O. Box 56337
North Pole, Alaska
99705

5-3-03

Alaska Dept. of Natural Resources
550 West 7th Ave. Suite 900 D
Anchorage, Alaska 99501-3577

Attention: Ed Fogels
Re: Pogo Mine Road Management Options

I am in favor of the alternative management option as proposed by Pogo-Teck.

My concerns are focused on safety-impact on wildlife—vandalism and theft of private property near the right-of-way.

Private vehicles have no business competing with heavy trucks and equipment on a narrow dangerous winding industrial road.

There is already a problem with theft and vandalism to private cabins in the area without making them even more accessible to perpetrators.

Wildlife is not in great abundance and would be wiped out in short order, especially by unscrupulous Foreign Nationals that live nearby and have no regard for our laws and regulations.

I believe it is in the overall best interest of all concerned that the Pogo Mine road remain closed to the general public at least as long as it is being used for industrial purposes. B37-1

Sincerely,

George Fowler

COMMENT RESPONSE:

B37-1 Thank you for your comment.

B38

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I prefer to see the Shaw Creek Hillside access developed - and would really like to see the road open to the public during mine operation and after. At least open the first half of the road. B38-1

We need more access to recreational areas. Pogo mine & the missile defense project will bring in more people (to the Delta area) B38-2

It would be nice to have more areas open for hiking, camping, whatever.

A road will be built to the mine - why not allow the public to benefit from it.

YOUR NAME: Sandra Garbowski

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B38-1 Thank you for your comment.

B38-2 Thank you for your comment.

B39

Subject: Pogo mine access road
Date: Tue, 13 May 2003 14:22:14 -0800
From: "Mervin Gilbertson" <mervin-bsl@awcable.com>
Organization: Big State Logistics
To: <ed_fogels@dnr.state.ak.us>

Ed:

I would like to see the State adopt the Alternative Management Option on the the road management issue for the Pogo Mine. The road is only being built for one purpose, for industrial traffic to access Pogo mine. For the safety of all, public access should be restricted during the life of the mine. We have seen this before with public access restricted for years on the Dalton Hwy. It made sense then to do it, and it makes sense to do it again. The industrial traffic should not have to concern itself with vehicles that have no radio communication and no real reason to be there. B39-1

Thank You
Mervin Gilbertson
Big State Logistics

COMMENT RESPONSE:

B39-1 Thank you for your comment.

B40

PAUL S. GLAVINOVICH
MINERALS CONSULTANT

P.O. Box 112816
Anchorage, Alaska 99511

Telephone
(907) 345-3646

April 14, 2003

Mr. Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, Alaska 99501

Re: Management of proposed road to Pogo

Dear Mr. Fogels:

For the record I fully support the construction of an all season access road to the Pogo mine per the alignment requested by Teck Comino as their Alternative #2, Shaw Creek Hillside All-Season Road. B40-1

Further, I understand and appreciate their desire to manage the road under their proposed "Alternative Management Option". I feel however that the State's interests will be best served if the road is managed under a plan that opens the entire road on a limited or restricted basis to those locators of valid mining claims in the greater Pogo area. Use of the road would be restricted to such uses as the transport of drilling equipment and etc, to a terminal area for air transport to individual claim groups. B40-2

There are a large number of mining claims in the greater Pogo area that are at the stage where drilling is required to further their exploration. To date all mobilization has been by helicopter from the Delta Junction area; a very pricey up front cost that severely reduces the funds available for actual exploration and consequently has discouraged more than one investor. Restricted use of the Pogo road will greatly reduce such costs and provide an opportunity to accelerate the development of the Pogo district. B40-3

Thank you for the opportunity to comment.

Sincerely,

COMMENT RESPONSE:

B40-1 Thank you for your comment.

B40-2 Thank you for your comment.

B40-3 Thank you for your comment.

B41

04/30/03

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

Shaw Creek Hillside Route

I support the "ALTERNATIVE MANAGEMENT OPTION" (FIRST HALF OF THE ROAD OPEN TO PUBLIC USE AFTER MINE LIFE).

I support this proposal/alternative because of ~~the~~ of allow benefits - Increased safety for Public & Mine Ops.
- Reduced short term impacts to subsistence hunting & recreation
- Reduce short term impacts to wetlands from ORV use
- Increase revenue to state from right-of-way fees
- Increase revenue to state material sales "mineral & forest."
- No change to existing public access.
- No expense to the State. B41-1

I support the opening of the mine for the following:
- $250 million investment into the economy during construction phase. This doesn't include personal employees levy & recreational dollars spent on/in the economy.
- Good employment for 250 Alaskans during construction and an additional 300 Alaskans for mine operation. B41-2
- TECK'S willingness to listen & work with numerous issues of concern citizens. TECK HAS MADE EVERY ATTEMPT POSSIBLE TO ADJUST OPERATIONS TO ENSURE A COHESIVENESS AMONG ALASKANS. TECK HAS WORK A PLAN THAT IS A WIN-WIN Solution FOR THEM & ALL.
- TECK HAS WORKED HARDER & LONGER THAN MOST INVESTORS TO INVEST IN ALASKA. B41-3

(OVER)

YOUR NAME: KARL I. GOHLKE, FRONTIER Plumbing Supply Inc
981 VAN HORN Rd, FAIRBANKS, AK 99701
907-374-3500

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B41-1 Thank you for your comment.

B41-2 Thank you for your comment.

B41-3 Thank you for your comment.

B42

I (PRINT YOUR NAME) William Golding FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

POGO PROJECT

GOODPASTER ACCESS / NO CHANGE TO EXISTING ACCESS TO THE GOOD PASTER RIVER

LIABILITY / THE POTENTIAL FOR LOOTING FROM PEOPLE WITH PRIVATE PROPERTY IF THE ROAD IS OPEN TO THE PUBLIC

EXISTING SHAW CREEK ROAD/ BY NOT OPENING THE ROAD TO THE PUBLIC THERE WILL NOT BE A LOT OF TRAFFIC ON THE SHAW CREEK ROAD OTHER THEN MINING EQUIPMENT COMING AND GOING TO THE MINE

RECREATION/ BY NOT OPENING THE ROAD TO THE PUBLIC EXISTING RECREATION IN THE AREA WOULD NOT BE AFFECTED, THAT AND THE ALASKA DEPT. OF FISH AND GAME WOULD NOT MAKE THE AREA A SPIKE FORK FIFTY AREA FOR MOOSE. WITCH WOULD BE A HARDSHIP ON THE PEOPLE THAT DEPEND ON MOOSE MEAT TO FEED THEIR FAMILIES B42-1

SAFETY/ BY NOT OPENING ACCESS TO THE PUBLIC WOULD SAVE LIVES AND HELP THE MINE RUN WITH OUT HAVING PEOPLE IN THE WAY

COMMERCIAL RECREATION/ ACCESS TO SHAW CREEK VALLEY WOULD NOT BE AFFECTED BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS AND WOULD KEEP UNWANTED LOOTERS OUT OF THE AREA

TRAPPING / BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS YOU WOULD NOT HAVE ANY PROBLEMS WITH TRAPPERS, PEOPLE WOULD NOT BE OUT THERE STEALING THE CATCH AND DESTROYING THEIR TRAP LINES

SUBSISTENCE/ IF THE MINE ROAD WAS OPENED YOU WOULD RUIN THE HUNTING FOR A LOT OF PEOPLE BECAUSE THE ALASKA DEPT. OF FISH AND GAME HAS ALL READY SAID THAT THEY WOULD MAKE THE AREA SPIKE FORK FIFTY INSTEAD OF ANY BULL WITCH WOULD MAKE A HARD SHIP ON PEOPLE THAT HUNT MOOSE TO FEED THERE FAMILIES

ORV USE OF THE SHAW CREEK VALLEY / WOULD NOT BE AFFECTED THEY COULD STILL GO WHERE THEY GO KNOW BY LEAVING THE MINE ROAD CLOSED TO THE PUBLIC, AND KEEP FROM HAVING A BIG SURGE OF PEOPLE IN THE AREA

B42

TIMBER / THE TIMBER IN THE AREA COULD BE LOGGED BY WORKING WITH THE MINE TO USE TO ROAD FOR ACCESS TO THE TIMBER AND ANY ROADS THE LOGGERS MAKE MUST BE RECLAIMED WHEN THEY ARE FINISHED LOGGING

MANAGEMENT OF THE WHOLE ROAD BY THE TECH -POGO INC./ THE MINE SHOULD MANAGE THE WHOLE ROAD AS FAR AS ACCESS FOR SAFETY SO THERE IS NO ONE GETTING RUN OVER AND IN THE WAY OF MINING TRUCKS AND EQUIPMENT, AND TO OF UNWANTED PEOPLE IN THE AREA WHERE WE WILL HAVE PEOPLE STEALING AND LOOTING PRIVATE PROPERTY IN THE AREA, AND WHEN THE MINE IS FINISHED IN THE AREA, THEY RECLAIM THE ROAD BACK TO THE START OF IT AT THE FOWLER DAIRY B42-1 CONT'D.

NAME: William Golding
ADDRESS: 2385 Badger Rd. HC N.P
PHONE (907) 488-2038
DATE: 4-30-03

COMMENT RESPONSE:

B42-1 Thank you for your comment.

B43

Subject: Pogo Road
Date: Mon, 12 May 2003 21:14:48 -0700 (PDT)
From: Paul Greci <paulgreci@yahoo.com>
To: ed_fogels@dnr.state.ak.us

Dear Ed,

Thank you for giving me an opportunity to provide input in the decision making regarding the Pogo Road.

First of all, I want to stress the importance of reclaiming the portion of the road that is not on state land. This reclamation is essential in protecting the Fortymile caribou herd and the Goodpaster River ecosystem. B43-1

Secondly, the portion of the road in the State Forest should be closed during the entire life of the mine. I support the Alternative Management Option. B43-2

Sincerely,

Paul Greci

Do you Yahoo!?
The New Yahoo! Search - Faster. Easier. Bingo.

COMMENT RESPONSE:

B43-1 Thank you for your comment.

B43-2 Thank you for your comment.

B44

CHARLIE GREEN
P. O. Box 71805
Fairbanks, AK 99707-1805

May 9, 2003

Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D, Anchorage, AK 99501-3577

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130, Seattle, WA 98101

Luke Boles
Alaska Dept. of Environmental Conservation
610 University Avenue, Fairbanks, AK 99709

RECEIVED
U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE

Dear Mr. Fogels, Ms. Gold and Mr. Boles,

I am writing to support the "Agency Preferred Alternative" identified in the Draft EIS for the Pogo gold mine project, and to support the issuance of the draft NPDES and ADEC Waste Disposal permits. I would further urge the Alaska Department of Natural Resources to adopt the proposed "Alternative Management Option" for the Shaw Creek Hillside access road. B44-1 B44-2

The Pogo project will create needed jobs in the Interior and provide new opportunities for Alaska businesses and residents. The project has been designed to minimize environmental impacts, meet Alaska water quality standards, and maintain the high quality of the Goodpaster River. B44-3

Implementation of the ADNR's proposed Alternative Management Option for the Shaw Creek Hillside road will maximize public safety during mining operations, minimize short-term environmental impacts, and yet provide for increased public access to state lands when mining is completed.

The State and Federal agencies involved in the project evaluation process have done an excellent job identifying a sound development plan and drafting reasonable project permits. I would urge them to adopt the preferred DEIS alternative and finalize the draft NPDES and Waste Disposal permits.

Sincerely,

Charles B. Green

(907) 479-2489 cgreen@acsalaska.net

COMMENT RESPONSE:

B44-1 Thank you for your comment.

B44-2 Thank you for your comment.

B44-3 Thank you for your comment.

B45

I (PRINT YOUR NAME) Fenton J Grennan FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

POGO PROJECT

GOODPASTER ACCESS / NO CHANGE TO EXISTING ACCESS TO THE GOOD PASTER RIVER

LIABILITY / THE POTENTIAL FOR LOOTING FROM PEOPLE WITH PRIVATE PROPERTY IF THE ROAD IS OPEN TO THE PUBLIC

EXISTING SHAW CREEK ROAD/ BY NOT OPENING THE ROAD TO THE PUBLIC THERE WILL NOT BE A LOT OF TRAFFIC ON THE SHAW CREEK ROAD OTHER THEN MINING EQUIPMENT COMING AND GOING TO THE MINE

RECREATION/ BY NOT OPENING THE ROAD TO THE PUBLIC EXISTING RECREATION IN THE AREA WOULD NOT BE AFFECTED, THAT AND THE ALASKA DEPT. OF FISH AND GAME WOULD NOT MAKE THE AREA A SPIKE FORK FIFTY AREA FOR MOOSE. WITCH WOULD BE A HARDSHIP ON THE PEOPLE THAT DEPEND ON MOOSE MEAT TO FEED THEIR FAMILIES

SAFETY/ BY NOT OPENING ACCESS TO THE PUBLIC WOULD SAVE LIVES AND HELP THE MINE RUN WITH OUT HAVING PEOPLE IN THE WAY B45-1

COMMERCIAL RECREATION/ ACCESS TO SHAW CREEK VALLEY WOULD NOT BE AFFECTED BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS AND WOULD KEEP UNWANTED LOOTERS OUT OF THE AREA

TRAPPING / BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS YOU WOULD NOT HAVE ANY PROBLEMS WITH TRAPPERS, PEOPLE WOULD NOT BE OUT THERE STEALING THE CATCH AND DESTROYING THEIR TRAP LINES

SUBSISTENCE/ IF THE MINE ROAD WAS OPENED YOU WOULD RUIN THE HUNTING FOR A LOT OF PEOPLE BECAUSE THE ALASKA DEPT. OF FISH AND GAME HAS ALL READY SAID THAT THEY WOULD MAKE THE AREA SPIKE FORK FIFTY INSTEAD OF ANY BULL WITCH WOULD MAKE A HARD SHIP ON PEOPLE THAT HUNT MOOSE TO FEED THERE FAMILIES

ORV USE OF THE SHAW CREEK VALLEY / WOULD NOT BE AFFECTED THEY COULD STILL GO WHERE THEY GO KNOW BY LEAVING THE MINE ROAD CLOSED TO THE PUBLIC, AND KEEP FROM HAVING A BIG SURGE OF PEOPLE IN THE AREA

B45

TIMBER / THE TIMBER IN THE AREA COULD BE LOGGED BY WORKING WITH THE MINE TO USE TO ROAD FOR ACCESS TO THE TIMBER AND ANY ROADS THE LOGGERS MAKE MUST BE RECLAIMED WHEN THEY ARE FINISHED LOGGING

MANAGEMENT OF THE WHOLE ROAD BY THE TECH -POGO INC./ THE MINE SHOULD MANAGE THE WHOLE ROAD AS FAR AS ACCESS FOR SAFETY SO THERE IS NO ONE GETTING RUN OVER AND IN THE WAY OF MINING TRUCKS AND EQUIPMENT, AND TO OF UNWANTED PEOPLE IN THE AREA WHERE WE WILL HAVE PEOPLE STEALING AND LOOTING PRIVATE PROPERTY IN THE AREA, AND WHEN THE MINE IS FINISHED IN THE AREA, THEY RECLAIM THE ROAD BACK TO THE START OF IT AT THE FOWLER DAIRY B45-1 CONT'D.

NAME: [illegible]
ADDRESS: 112 Bridgid Ave
PHONE : 451-0860
DATE: 4-30-03

COMMENT RESPONSE:

B45-1 Thank you for your comment.

B46

May 3, 2003

Mr. Ed Fogles
Alaska Department of Natural Resources
550 West 7th Avenue
Anchorage, Alaska

Re: Proposed Pogo Mine

Mr. Fogle

I would like to take the opportunity to comment on the proposed Pogo Mine.

I'm a life long Alaskan born and raised in Fairbanks. I have traveled the Goodpasture River many times. I live in Alaska because I choose to and would like to have my children have the opportunity to live in Alaska if this is where they desire to live.

For the past number of years there has been I believe the message sent from Alaska that we were hostile for any future development. By this message I believe we have discouraged a certain amount of development that would help in diversifying our economy and providing quality employment opportunities for our young. This position I feel is contrary to what many Alaskan residents would want. While it is important we work to develop our resources in a logical and prudent way we must not at the same time destroy the environment or destroy opportunities for future generations. We must have sound logical projects, which provide us the highest and best use of our resources. I believe the Pogo mine is such a project. It has been proposed using sound technical data. A cooperation amongst all impacted parties and consideration for those parties

I have been following proposed development of the Pogo mine and attended the recent public hearings that were held in Fairbanks. I would like to extend my appreciation to those people involved in the proposed development of the Pogo mine both on the Teck side and those agencies that have been involved in the permitting process. Granted I a but an observer and can't possibly realize the amount of work that has gone in to this permitting process. But from my observation it appears that Teck and those governing agencies have been working together to find solutions to the many difficult challenges there must be in developing a project such as this.

With in the literature I have read and during the public meetings I have learned that efforts have been made to treat the water discharges from the mine, to locate the mine in such a way to limit the exposure directly aside the river. And probably the biggest thing for me is that the road preferred is away from the river it self and follows the Shaw Creek ridges to the mine. It appears little of the road will be evident from the river if any. B46-1

For the permitting of the mine I can understand and appreciate Tecks' request to maintain access as a private industrial road even though it is within State lands. Within the permitting documents there are provisions that should there be other resources within the

B46

region that could be developed using the road they should be allowed with compensation to Teck for their cost in constructing the road. This could be an important benefit to other possible future development projects. And will limit possible conflicts during the course of the mine. The State of Alaska can ill afford to maintain this road consequently it is in the best interest to allow Teck to control access and maintain the road during the mine life. I believe the road has a good likelihood of remaining in place for many years but at this point it is logical to have limited access to the road. If after the closure of the mine it proves to be benefit to the State to keep the road open then a separate process should considered in how the road would be keep open and how the State would pay for it's maintence. B46-2 Cont'd.

For issues of power to the mine an overland transmission line is the most logical. Its path should be chosen on the merits of what is best for the line. This means that it is not necessarily always best and the least impact to have the line adjacent to the road. B46-3

Again I would like to thank those people involved in the permitting process. It is important that agencies and industry wok together to find ways to develop Alaska's resources to their highest and best use. I would encourage you to continue to work towards permitting the Pogo mine in an expedient and timely manner.

Thank you
Ken Hall

Ken Hall
2506 Kuskokwim
Fairbanks, Alaska 99709

COMMENT RESPONSE:

B46-1 Thank you for your comment.
B46-2 Thank you for your comment.
B46-3 Thank you for your comment.

MIKE HROMADKA
d.b.a. GYPSY EXPLORATION
FAIRBANKS AK 99706

B47

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

My only disagreement with the mine plan is the decision to reclaim the last 20 miles of road after the mine closes. Why not leave it for access? We have too few roads now. The river rats don't own that land, open it up. B47-1

Other than the massive amount of time needed for these permits, I'd say you have a good operation. Lets go mining! B47-2

MIKE HROMADKA

YOUR NAME:

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B47-1 Thank you for your comment.

B47-2 Thank you for your comment.

B48

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I Support Pogo's Alternative of Road use and access of Shaw Creek B48-1

YOUR NAME: Michael E Jenkins PO Box 1263 Delta Jct 99737

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B48-1 Thank you for your comment.

B49

Subject: Pogo Project
Date: Tue, 13 May 2003 10:17:05 -0800
From: "Chris Johansen" <chris@flowline-alaska.com>
To: <ed_fogels@dnr.state.ak.us>

I support the Alternative Management Option for the Teckcominco Pogo Project road. I have reviewed the project alternatives and believe that this is the best solution for both the mine and the public. The economic stimulus for the Delta region will be a real boost to the local economy. It will lead to long term resource development in that region. As a lifelong Alaskan with ties to the Delta community I can assure you that this project is will supported by both the Fairbanks and Delta public. B49-1 B49-2

The proposed alternative is the best use for this road. Maintenance costs, security, and public access will be limited yet the traditional methods of accessing this area are left intact. B49-3

Thank you,

Chris Johansen, P.E.
1881 Livengood
Fairbanks, AK 99701

COMMENT RESPONSE:

B49-1 Thank you for your comment.

B49-2 Thank you for your comment.

B49-3 Thank you for your comment.

B50

Subject: Pogo Road
Date: Tue, 13 May 2003 15:35:51 -0700 (PDT)
From: Brian Johnson <bt_johnson2003@yahoo.com>
To: ed_fogels@dnr.state.ak.us

<?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

I am writing to express my support for the pogo road permit option to have the road be open to the public after the life of the mine B50-1

I know this mine will have a large positive impact on the community of Delta Junction and I recommend that you approve the permit to construct the road. B50-2

Sincerely,

Brian T. Johnson

Alaskan resident for 23 years, Delta resident for 5

Do you Yahoo!?
The New Yahoo! Search - Faster. Easier. Bingo.

COMMENT RESPONSE:

B50-1 Thank you for your comment.

B50-2 Thank you for your comment.

B51

Subject: FW: Pogo wastewater
Date: Tue, 13 May 2003 15:25:56 -0800
From: "Boles, Luke" <Luke_Boles@dec.state.ak.us>
To: "Ed Fogels (E-mail)" <ed_fogels@dnr.state.ak.us>

-----Original Message-----
From: Brian Johnson [mailto:bt_johnson2003@yahoo.com]
Sent: Tuesday, May 13, 2003 2:34 PM
To: luke_boles@dec.state.ak.us
Subject: Pogo wastewater

After reviewing the DEIS for the Pogo Mine Project, including the Waste Disposal Permit from DEC, I enthusiastically support this project. B51-1

I am a Delta Junction resident of 5 years and an Alaskan resident of 23 years.

Brian Johnson

Do you Yahoo!?
The New <http://us.rd.yahoo.com/search/mailsig/*http://search.yahoo.com>
Yahoo! Search - Faster. Easier. Bingo.

COMMENT RESPONSE:

B51-1 Thank you for your comment.

B52

Subject: pogo road permit
Date: Tue, 13 May 2003 14:17:53 -0800
From: "Martha Johnson" <msj@deltaindustrial.com>
To: <ed_fogels@dnr.state.ak.us>

----- Original Message -----

From: Curtis Dufendach

To: ed_fogels@dnr.state.ak.us

Sent: Thursday, May 01, 2003 8:23 AM

Subject: pogo road permit

I am writing to express my support for the pogo road permit. B52-1

I this mine will have a large positive impact on the community of Delta Junction and I recommend that you approve the permit to construct the road. B52-2

Martha S. Johnson

msj@deltaindustrial.com

Delta Industrial Services, Inc.

Ph. 907-895-5053

Fx. 907-895-6205

Web Page: deltaindustrial.com

COMMENT RESPONSE:

B52-1 Thank you for your comment.

B52-2 Thank you for your comment.

B53

Subject: FW: Pogo project
Date: Tue, 13 May 2003 15:25:34 -0800
From: "Boles, Luke" <Luke_Boles@dec.state.ak.us>
To: "Ed Fogels (E-mail)" <ed_fogels@dnr.state.ak.us>

-----Original Message-----
From: Martha Johnson [mailto:msj@deltaindustrial.com]
Sent: Tuesday, May 13, 2003 2:18 PM
To: luke_boles@dec.state.ak.us
Subject: Pogo project

After reveiwing the DEIS for the Pogo Mine Project, including the Waste Disposal Permit from DEC, I enthusiasticly support this project. B53-1

I am a Delta Junction resident of 7 years and an Alaskan resident of 13 years.

Martha S. Johnson

msj@deltaindustrial.com <mailto:msj@deltaindustrial.com>

Delta Industrial Services, Inc.

Ph. 907-895-5053

Fx. 907-895-6205

Web Page: deltaindustrial.com

COMMENT RESPONSE:

B53-1 Thank you for your comment.

B54

ffdrk@aurora.alaska.edu
04/24/2003 11:15 AM

To: Hanh Gold/R10/USEPA/US@EPA
cc: edf@dnr.state.ak.us
Subject: Pogo Environmental Impact Assessment

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency

I am submitting the following comments on the Pogo Mine Project Environmental Impact Assessment:

1) The Draft Environmental Impact Statement seems comprehensive and reflects the considerable effort expended by state and federal agencies in cooperation with Teck-Pogo Inc. The availability of the draft statement on CD provided to all those who expressed interest in the project greatly facilitated assessment of the project.

2) I strongly support the Agency Preferred Alternative, which among all alternatives assessed most effectively minimizes impact on the extremely important and valuable fishery and other aquatic resources of the Goodpaster River, Shaw Creek, and the Shaw Creek Flats. The fishery and other aquatic resources are the biological resources at greatest risk from the project and are among the most valued by interior Alaska residents for their recreational, subsistence, and commercial uses. B54-1

The 26 mile closure of the road closest to the mine to the general public, and its reclamation and habitat restoration following closure of the mine will protect the sensitive post calving and summering habitat of the Fortymile Caribou Herd from the potential cumulative impacts if the road were to remain as a route of access for the public and for commercial developments within the headwaters of the Goodpaster River. B54-2

3) Teck-Pogo Inc. has indicated their desire to use a winter road across Quartz lake and following the Goodpaster Trail with several crossings the Goodpaster River. The purpose being solely to accelerate mine development by several months to facilitate a more rapid return on their capital investment. This is clearly unacceptable in view of the potential impact on Goodpaster River fishery habitat and similarly but somewhat less severe impact on the Quartz Lake aquatic habitat and winter recreational use. Prior experience with use of the winter road encountered substantial problems with riparian habitat damage, adequate snow and cold temperatures for snow road and river cross preparation with damage to fish spawning and over wintering habitat that was never fully assessed. Now, with global climate change being experienced most profoundly in interior Alaska with continuously warming winters and reduced snowfall, conditions suitable for winter road construction without serious impact on the Goodpaster River and adjacent fish and wildlife habitat no longer exist. B54-3

David R. Klein
1662 Taroka Drive
Fairbanks, AK 99709

COMMENT RESPONSE:

B54-1 Thank you for your comment.

B54-2 Thank you for your comment.

B54-3 In determining whether to permit use of the Goodpaster Winter Road to allow the Applicant to construct its all-season access road faster, ADNR does take into consideration the economic advantages to the Applicant. Regardless of the weather conditions that might exist, however, ADNR would require that specific standards be met (e.g., ground frost depth, ice bridge thickness, stream bank snow ramps) before a winter road could be constructed and continued to be used. Thus, the Applicant would bear the risk of global climate change.

B55

I (PRINT YOUR NAME) Chester J Knowles FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

POGO PROJECT

GOODPASTER ACCESS / NO CHANGE TO EXISTING ACCESS TO THE GOOD PASTER RIVER

LIABILITY / THE POTENTIAL FOR LOOTING FROM PEOPLE WITH PRIVATE PROPERTY IF THE ROAD IS OPEN TO THE PUBLIC

EXISTING SHAW CREEK ROAD/ BY NOT OPENING THE ROAD TO THE PUBLIC THERE WILL NOT BE A LOT OF TRAFFIC ON THE SHAW CREEK ROAD OTHER THEN MINING EQUIPMENT COMING AND GOING TO THE MINE

RECREATION/ BY NOT OPENING THE ROAD TO THE PUBLIC EXISTING RECREATION IN THE AREA WOULD NOT BE AFFECTED, THAT AND THE ALASKA DEPT. OF FISH AND GAME WOULD NOT MAKE THE AREA A SPIKE FORK FIFTY AREA FOR MOOSE. WITCH WOULD BE A HARDSHIP ON THE PEOPLE THAT DEPEND ON MOOSE MEAT TO FEED THEIR FAMILIES

B55-1

SAFETY/ BY NOT OPENING ACCESS TO THE PUBLIC WOULD SAVE LIVES AND HELP THE MINE RUN WITH OUT HAVING PEOPLE IN THE WAY

COMMERCIAL RECREATION/ ACCESS TO SHAW CREEK VALLEY WOULD NOT BE AFFECTED BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS AND WOULD KEEP UNWANTED LOOTERS OUT OF THE AREA

TRAPPING / BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS YOU WOULD NOT HAVE ANY PROBLEMS WITH TRAPPERS, PEOPLE WOULD NOT BE OUT THERE STEALING THE CATCH AND DESTROYING THEIR TRAP LINES

SUBSISTENCE/ IF THE MINE ROAD WAS OPENED YOU WOULD RUIN THE HUNTING FOR A LOT OF PEOPLE BECAUSE THE ALASKA DEPT. OF FISH AND GAME HAS ALL READY SAID THAT THEY WOULD MAKE THE AREA SPIKE FORK FIFTY INSTEAD OF ANY BULL WITCH WOULD MAKE A HARD SHIP ON PEOPLE THAT HUNT MOOSE TO FEED THERE FAMILIES

ORV USE OF THE SHAW CREEK VALLEY / WOULD NOT BE AFFECTED THEY COULD STILL GO WHERE THEY GO KNOW BY LEAVING THE MINE ROAD CLOSED TO THE PUBLIC, AND KEEP FROM HAVING A BIG SURGE OF PEOPLE IN THE AREA

B55

TIMBER / THE TIMBER IN THE AREA COULD BE LOGGED BY WORKING WITH THE MINE TO USE TO ROAD FOR ACCESS TO THE TIMBER AND ANY ROADS THE LOGGERS MAKE MUST BE RECLAIMED WHEN THEY ARE FINISHED LOGGING

MANAGEMENT OF THE WHOLE ROAD BY THE TECH -POGO INC./ THE MINE SHOULD MANAGE THE WHOLE ROAD AS FAR AS ACCESS FOR SAFETY SO THERE IS NO ONE GETTING RUN OVER AND IN THE WAY OF MINING TRUCKS AND EQUIPMENT, AND TO OF UNWANTED PEOPLE IN THE AREA WHERE WE WILL HAVE PEOPLE STEALING AND LOOTING PRIVATE PROPERTY IN THE AREA, AND WHEN THE MINE IS FINISHED IN THE AREA, THEY RECLAIM THE ROAD BACK TO THE START OF IT AT THE FOWLER DAIRY

B55-1 CONT'D.

NAME: Chester J. Knowles
ADDRESS: 752 Barbara Lee Dr. North Pole AK 99705
PHONE : 907 488 2143
DATE: 4/30/03

COMMENT RESPONSE:

B55-1 Thank you for your comment.

B56

Subject: pogo
Date: Tue, 13 May 2003 14:35:42 -0800
From: "jen steitz" <mtavens@hotmail.com>
To: ed_fogels@dnr.state.ak.us

Hello Ed from Larry Landry;

I am of course writing to offer my thoughts on the access component of the draft Pogo EIS/Proposed Decision.

I support the decision to keep the road open to Gilles Creek, reclaim it from there to the mine, with the reclamation obligation and bond running to future owners or other operators and road users which may succeed Teck. This approach initially gave us heartburn, but I believe it is a workable compromise between the competing desires for more access to Alaska resources and public lands and to protect the superb values of the Goodpaster watershed and surrounding regions. B56-1

As you know, I have serious reservations about the wisdom of not using definitive, binding language regarding road reclamation. Nevertheless, I understand DNR's rationale that it does not want to foreclose the options of future administrations regarding use of the road. However, the question of additional uses is so critical to disposition of the access issue that I think it is important that you flesh out the details of the procedures which will be followed regarding them, to provide the agency and the public with a clearer road map. It is my job as an advocate to provide you with good, concise verbage and a penetrating, persuasive analysis why you should use it. But for the fact that I retired to far warmer climes for the second half of winter, I would be attempting to do that just now. Instead, I strongly recommend:

1) These procedures should be mandatory for DNR; "will" should be changed to "shall". B56-2
2) That you elaborate more fully on the procedures DNR will use to tackle these applications, guaranteeing that they will be fully open and participatory. Add more substantive guarantees as well, which will assure us that not only will the public have an opportunity to comment, but that it will be genuinely involved in the decisionmaking process. B56-3
3) The bullet point on p. 37 regarding resources identified in Section IX should be expanded to include an analysis of the cumulative impacts which can reasonably be anticipated with said future development. B56-4
4) That more conservation and nonconsumptive oriented interests be added to the Goodpaster Review Working Group. B56-5

I support Teck's desire for a private exclusive right-of-way on the first half of the road, for two reasons. First, it will obviously simplify managing the attendant impacts of mine development, while allowing for forestry activities, by far the most significant ancillary economic use of the road. Second, in my experiences as a conservationist, I have not seen a company do such an extensive and thorough job in working to accomodate the various public interests which its developments will impact. Given this record, if the company feels strongly that it needs an exclusive right-of-way, then it should get the benefit of the doubt. While there are some undeniable short term costs to the public with this arrangement, the key fact is that Alaskans will get a new road into their State Forest when mining is completed in the not too distant future. B56-6

One question arises in reviewing the draft decision regarding the powerline right-if-way. At one point the route deviates from the road corridor for a considerable distance. I am sure there is a rationale for this move; however, overall impacts of the line would be reduced considerably if the line were to parallel the road. If the additional costs of sticking to the road aren't too great, I would recommend keeping them B56-7

B56

together.

A broad representation of Interior residents and political ideologies have spoken in favor of removing the road when mining is completed. We appreciate your responsiveness in working with those sentiments. I think with some strengthening this decision can function as a good working tool for the future.

Sincerely,
Larry Landry
2240 Railroad Dr.
Fairbanks AK 99709

Add photos to your e-mail with MSN 8. Get 2 months FREE*.

COMMENT RESPONSE:

B56-1 Thank you for your comment.

B56-2 This suggestion will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B56-3 ADNR has committed to a full public process before decision making would occur in the future regarding changes in use of the mine access road. This will be clearly stated in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B56-4 At the time it would make any decision to authorize additional uses of the mine access road, ADNR's decision document would address cumulative impacts.

B56-5 This suggestion will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B56-6 Thank you for your comment.

B56-7 As a result of this and two similar comments, the Applicant has decided to reroute the power line corridor out of the Sutton Creek drainage and follow the road alignment across the Shaw Creek and Goodpaster divide.

B57

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I feel the Shaw Creek Rd should be closed to public access when Teck-Pogo starts mining. B57-1

YOUR NAME: Joni Lee

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B57-1 Thank you for your comment.

B58

LYNDEN LOGISTICS

April 30, 2003

6441 South Airpark Place
Anchorage, Alaska 99502-1809
(907) 245-1544
Fax: (907) 245-1744

Mr. Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

Re: Teck-Pogo DEIS Road Management Comments

Dear Mr. Fogels:

Lynden is a family of transportation companies who have been operating in Alaska since 1954. We have a long history of supporting roads and access to remote sites for resource development. As a transportation company providing commercial services to Alaskan industry, we strongly support resource development and the infrastructure required to extract our State resources that benefit all Alaskans. We further support doing so in a safe and environmentally sound manner.

We have reviewed the DNR plan which specifies the management options for road access to the Pogo Project utilizing the Shaw Creek Hillside corridor as the preferred route. Further review of the Proposed Decision vs. the Alternative Management Option reveals to us that the Alternative Management Option is the option we support. For Lynden, the key issue that we believe supports this option is the safety of the public by restricting public access during the construction and operations of a commercial mine. The history of restricting access for such commercial purposes shows that this does not impinge on the traditional access to the area, yet it allows for safe transport of construction equipment, materials, operational support and resource extraction. As a transportation company, we are always conscience of the traveling public, as well as our employees who make their living in the commercial transportation industry, and the safety of both are our highest priority. B58-1

We believe the agencies involved have done an extremely thorough job with the DEIS, and we particularly applaud DNR for all their work on the access road options. We look forward to this project and the benefits to the State, as well as, the private sector.

We fully support the "Alternative Management Option" for the road access. The exposure reduces risks and provides a well planned approach to Pogo Project development.

Regards,

LYNDEN LOGISTICS

Mark Anderson
President

COMMENT RESPONSE:

B58-1 Thank you for your comment.

B59

LYNDEN LOGISTICS

April 30, 2003

6441 South Airpark Place
Anchorage, Alaska 99502-1809
(907) 245-1544
Fax: (907) 245-1744

Mr. Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

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We believe the agencies involved have done an extremely thorough job with the DEIS, and we particularly applaud DNR for all their work on the access road options. We look forward to this project and the benefits to the State, as well as, the private sector.

We fully support the "Alternative Management Option" for the road access. The exposure reduces risks and provides a well planned approach to Pogo Project development.

Regards,

LYNDEN LOGISTICS

Jeanine St. John
Vice President

COMMENT RESPONSE:

B59-1 Thank you for your comment.

B60

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MAY 15
U.S. FISH & WILDLIFE OFFICE

5-10-03

Dave Hall, NEPA Compliance Coordinator
US Environmental Protection Agency
1200 6th Avenue, OW-130
Seattle, Wa 98101

Sir or Madam;

I strongly support a winter only trail (Alternative #4) with traffic on this trail restricted to vehicles carrying supplies for the mine. Public access of snowmachines, ATVs or 4-wheeldrive vehicles should not be allowed, either during the mine's existence or after the mine is worked out.

If ATV use in the future increases at the rate it has in the past, one can only imagine the damage that will be done. All one needs to do is look at the trails where ATVs have been running for the last 10 to 15 years to give one an idea of what that drainage will become. Since Lawmakers not willing to regulate use, except on Federal grounds, it would be best for longevity of the road were B60-1

B60

p. 2

reregulated at the end of the mine's life and limited to a hiking trail.

Any public road or trail access into the area would be severely detrimental and would take away the value that makes it unique. B60-1 Cont'd.

The Goodpasture River is the only fresh water stream of its kind in the area. 40 miles of it can be navigated by a small boat and, with work, nearly everyone can get there. (The Salcha River is a baby in comparison.) Future generations cannot enjoy the tranquillity and peacefulness of this valley if we ensure it by limiting the accessibility now.

The idea that everyone should be able to visit such little pieces of wilderness sounds great, in theory. In reality, when things are made too easy, when roads and trails are built, soon there are outhouses and public docks, ready-made campfire pits and tent platforms. The people come, at first a trickle, then in droves. The wildlife leave or are shot off and the wilderness, the very B60-2

B60

p. 3

thing that was so attractive for some, is gone. Then comes garbage dumps, bridges over streams that should be left alone, and finally, a corner store selling gasoline and cigarettes.

Many of the newcomers to the Delta area have little regard for management or preservation of land or wildlife. I know of several people that are already drooling over the possibility of having hikers, photographers, or hunting and fishing clients, let alone a good share of the timber people who are feverishly eyeing the last areas of forest land for lumber. The trees up there are 125 years old. Once they are cut we won't see trees that size in our lifetime, nor will our grandchildren likely, in theirs. Somehow we have to see past the short term to see the long term effect. B60-2 Cont'd

Somewhere we, as a people, don't let money control what we do to this land and justify it by shouting, "It's my only way of life." For the sake of a few dollars today, we will take away it's beauty for generations to come,

B60

p. 4

and Maybe Forever.
Please, let's all of us, save our
beautiful Tradpatten River drainage.

B60-2 CONT'D.

Hopefully,

Earl F. Malcolm
Mary B Malcolm
Quinn F. Malcolm
Carolyn Malcolm
PO Box 256
Nenana Jct., Ak. 99737

COMMENT RESPONSE:

B60-1 The bases for selecting the Shaw Creek Hillside Road option (Alternative 2) rather than the winter only access (Alternative 4) are described in Section 5.2.3.

ADNR will seek to minimize inappropriate ATV use and associated damage in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

B60-2 A major factor in selecting the Shaw Creek Hillside road option (Alternative 2) was that it would provide access to a large block of state land managed for multiple concurrent use, including mineral, timber, and other industrial development, which has been contemplated for many years, beginning with timber planning in the 1970s. The management intent for these lands was determined, after a public process, by the Tanana Basin Area Plan in 1985. Another public process further refined this management intent when the TBAP was updated in 1991. In addition, the 1988 TVSF Management Plan and its 2001 update also underwent a significant public process to determine management intent for these lands.

B61

Dan_McCoy@placerdome.com
04/04/2003 10:10 AM

To: ed_fogels@dnr.state.ak.us, Hanh Gold/R10/USEPA/US@EPA
cc: "Senator_Gene_Therriault@legis.state.ak.us" <Senator_Gene_Therriault@legis.state.ak.us>, "Senator_Ralph_Seekins@legis.state.ak.us" <Senator_Ralph_Seekins@legis.state.ak.us>, "Senator_Gary_Wilken@legis.state.ak.us" <Senator_Gary_Wilken@legis.state.ak.us>, "Senator_Georgianna_Lincoln%legis.state.ak.usRepresentative_Beverly_Masek%legis.state.ak.us_Representative_Beverly_Masek%legis.state.ak.us,_Representative_Jim_Whitaker"@legis.state.ak.usRepresentative_Jim_W
Subject: Support for Pogo permits

Dear Sirs:

As someone who has lived and worked in Alaska for 22 years prior to moving to Reno last year (due to job necessities), I encourage the timely resolution of the permit process re: the Pogo mine site and road. I endorse the Agency Preferred Alternative in the Draft EIS, with the provision that DNR adopt the Alternative Management Option. I also endorse the draft NPDES permit and the draft DEC Waste Disposal permit. B61-1

I think that this will encourage both immediate jobs within Interior Alaska and also encourage other major mining companies as to the feasibility of exploring and mining within both Alaska and the United States in general. The plans appear to make sense both from economic and environmental perspectives. B61-2

On a personal basis, the decision will help decide whether or not I can move myself and my family back to Alaska and resume being a productive citizen there.

Dan McCoy
Senior Projects Geologist, Placer Dome Exploration, Inc
240 South Rock Blvd./ Suite 117, Reno NV 89523
Phone: 775-856-5111
Fax: 775-856-3091
cell: 775-233-1378

COMMENT RESPONSE:

B61-1 Thank you for your comment.

B61-2 Thank you for your comment.

B62

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I am In Favor of the Pogo mine & the Shaw Crk Road I think the road should be ~~Closed~~ during the mine life then should be Left alone & Not Reclaimed. so the People can use it B62-1

I Find it hard to believe that this permit has taken this long but I realize who the past administration was Teck should be rewarded ASAP for their Patience in this Project

TIM McKAY
2552 Steese Hwy. North
Fairbanks, Alaska 99712

YOUR NAME: Tim McKay

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B62-1 Thank you for your comment.

B63

Subject: Pogo Gold Mine Project
Date: Tue, 13 May 2003 10:10:37 -0800
From: "carol mcnabb" <clm@wildak.net>
To: <ed_fogels@dnr.state.ak.us>

Dear Mr. Fogels;

We are writing in response to the DEIS on the Pogo Project. As land owners at the end of Shaw Creek Road, we will be highly impacted by this project. We support mining, logging, and agriculture, but also value our way of life where we live. If the option to use the section line easement through the hay field were used, it would impact our farming operation a great deal and cause considerable hardship. We are most definitely against this route. B63-1
The Alternative Management Option proposed by Teck-Pogo is preferred over the Proposed Decision. We especially support the parking for workers down at the Richardson Hwy and the 1st half of the road closed to the public until after the life of the mine. B63-2 The safety of our children for all parents is number one and we feel exercising the Alternative Management Option will reduce the safety risk. B63-3

Sincerely,
Jeff and Carol McNabb

COMMENT RESPONSE:

B63-1 The issue of the section line easement at the end of Shaw Creek Road will be addressed by DNR in its final decision for issuance of the ROW and Land Lease, which will occur after publication of this FEIS.

B63-2 Thank you for your comment.

B63-3 Thank you for your comment.

May 5-03 B64

(1)

Ms. Hanh Gold NEPA Compliance Coordination
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW130
Seattle, Wash 98101

Dear Ms. Gold,

I am writing once again after attending the POGO meeting in Delta Junction.

The thing that strikes me as very odd is the fact that Shaw Ck. Road boarders a prime Grayling Spawning area, a marsh that Ducks, Geese, Swan and Crane nest in, and a Paraguan Falcon family nests on Shaw Ck. Hill above the Road! The area that is known as Shaw Ck. Flats is titled "Wetlands." For any of these factors, our Fish and Game folks would be complaining! Land sales have been stopped in the past, even, because of Falcon nests! I can only surmise that there is a "gag order" on our Game Department. This is not right!

B64-1

I'm the persone that would rather see a railway spur to POGO, after Fort Greely Missile Base gets their Missile components, through Federal Land to the Alaska Hiway and from

B64-2

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B64

2.

There a route could be found for the railway to access the POGO area, thus helping the farmers bring their products to market also. Everyone says that a road is inevitable, we can't stop progress.

B64-2 CONT'D.

If a road is a must — please look at access two miles North of the Shaw Ck., where there is a paved rest area, and state Forestry has already put in graveled roads for timber sales. This is on the lower limit of Tenderfoot Creek which has, by the time it gets to this area — flowed under the Richardson Hiway, through culverts, towards the Tanana River — so there is no Ck., or marshy land.

There are hills in this area, and a road would have some curves, but I am sure a road could be put in and perhaps trucks and buses could travel 25 miles per hour for a short time, as they would also have to do on Shaw Creek Road. This takes the whole construction

B64-3

B64

(3) equipment, Workforce, Trucks and buses away From Shaw Ck., away From home owners, away From a great grayling Fishery and Nesting Falcons and Migratory Birds! Access of the pipeline would be the Same To construct your Shaw Ck. Ridge Road TO POGO. Something is Very Strange that Shaw Creek Road would have ever be considered in the first place, when you already have a possable Route That conserves nature. Something is wrong!

B64-3 CONT'D.

Respectfully
Irene Hansen Mead
907-895-4803

COMMENT RESPONSE:

B64-1 The wildlife baseline descriptions in Section 3.14, and potential impacts to wildlife discussed in Section 4.9, have been reviewed by ADFG, and changes have been made in those sections to reflect its comments.

B64-2 The reader is directed to Appendix A1.2 (Option Screening Process), Surface Access, *Type*, Railroad. (Page A-30).

B64-3 The reader is directed to Section 5.2.3, Surface Access, *Route*, Richardson Highway Egress.

B65

Pogo Compliance Coordinator March 11-03
Alt. Environmental Protection Agency

Dear Madam or Sir,
I have been Resident of Big Delta since birth in 1940. Why the there a designated guide deciding the Pogo on the N.F. Bank Kenicott and Delta Junction water on the Tanana Good pasture Kenicott Creek Creek. I hope I have a good boat.

B65-1 I am very much against a road to Pogo, mind I am not against mining but the upper Shaw pasture for cattle. Twenty years ago the operability of the Shaw pasture becoming a wildland wild life.

B65-1 The Commissioner is concerned and gently persistent. A road will just mean that gradually people will bring over their pasture by ATV's and motorcycles

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19 2003

B65

how the state of PGO can actually keep the public from using the road as proposed electric line for recreation. One thing that I have constantly hoped, is asking PGO to hookup with the Copper Mainline that will be coming to the Delta area to bring the missile components to Fort Greely and eventually down into Canada, helping the farmers in the area. A bridge could be built across the Tanana River at the Delta Barley Project, that could take a spur to PGO or other mines in that area pumping in supplies and their products out. This would be much better than 50 miles of road through Pristine Wilderness and would more than likely help the rail road project start. until such a plan, PGO can successfully use the winter ice road.

B65-1 Cont'd.

Respectfully
Irene Hansen

COMMENT RESPONSE:

B65-1 The reader is directed to Appendix A1.2 (Option Screening Process), Surface Access, *Type*, Railroad. (Page A-30).

B66

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

My folks Bert and Mary Hansen homested on the North Bank of the Tanana Dist in 1939 and opened Bert's Hunting Road house and Bert became a registered guide in the 40's. I am against the road proposed to PGO. I am for the mining industry, people need jobs. I do not want the pristine wilderness of the Shaw Creek Flats and Good Pasture River ruined because of mineral extraction. I feel that the Railroad will take Missile components to Fort Greely, then run to the Barley Project & farming area. So I believe that there is the possibility of a spur off the Railroad going to PGO and other such mines in the future. They can get everything they need & send their product to market this way — investing companies money for the Railroad — helps everyone.

The road proposed immediately prompted a elderly official to demand that we go into a borough 28 miles of public road will be run hunting and trapping as we know it. If you have a road — gate it!

B66-1

YOUR NAME: Irene Hansen Mead

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B66-1 The reader is directed to Appendix A1.2 (Option Screening Process), Surface Access, *Type*, Railroad. (Page A.1-30).

B67

Roger D. Mechon
P.O. Box 222209
Anchorage, Alaska 99522

May 12, 2003

Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, Alaska 99501-3577

Attn: Mr. Ed Fogels

Re: Pogo Mine EIS

I would like to take this opportunity to state that I am in full support of the Pogo Mine Project and encourage the agencies to work with Teck-Pogo to bring the project to completion. B67-1

With regard to the environmental impact, the minerals development industry has demonstrated that a major mining company can and will work with agencies to promote a viable facility which does not produce a negative impact on the environment. Teck-Pogo employs personnel who are capable of continuing this standard.

In reference to the management strategy associated with the management of the access road, I would like to offer comments and experience with such an industrial road. Under the PROPOSED DECISION, the road would be opened to the public immediately. I oppose this decision and would prefer the agencies consider and adopt the **ALTERNATIVE MANAGEMENT OPTION, which calls for the road to be opened to the public " after the mine life."** B67-2

Some of the benefits to the State of Alaska and residents are as follows:

1. One of the problems with an industrial road being opened to the public is the control of traffic and safety to the public. If this road were opened to general traffic, driving safety would be a major issue. The workers would be trained for site (and road) specific safety issues, but the general public would not. It would only be a matter of time before serious accidents occurred.

2. Short term or interim impacts to trapping, subsistence hunting and commercial recreation would be reduced. If the road were opened immediately, each of these users would be severely impacted, in a negative manner.

B67

3. Opening the road to the public will create a major influx of off road traffic, which will lead to increased degradation of the local environment. An open road will encourage such traffic as well as an increase in litter. It should not be the responsibility of the mining company to police such activity if the road is open to the public.

4. Another advantage to having the road in place will be the opening of access to State of Alaska-owned timberlands. This will promote additional revenue to the State of Alaska through timber sales plus provide additional employment opportunity to the local residents. Again, the road should be closed to the public due to safety reasons to avoid accidents with logging trucks.

5. By classifying the road as a "Closed or Private Road," the existing public access will not be changed. In this manner, any cabin owner or recreation user who presently uses the area will not be impacted. B67-2 CONT'D.

I have personal experience with a similar situation, which occurred in Northern Michigan where a private railroad was converted to a logging haul road. Even with an elaborate signage system and restricted access signs it became difficult to restrict the public from the area or to promote safe driving conditions. Every year there were numerous serious accidents caused by someone out for a leisure drive or looking for a Christmas tree. The general public driver was not aware of the danger associated with trying to stop a loaded truck, thus gawking families caused more than one of the accidents on the closed road system. Eventually, due to safety concerns as well as others, a guard post was required to prevent the public from entering the heavy industrial road system.

If I can provide additional information on this subject, please feel free to call me at (907) 348-8981. Again, I encourage the adoption of the **Alternative Management Option where the road would be opened to the public " after mine life."**

Sincerely,

Roger D. Mechon

Roger D. Mechon

COMMENT RESPONSE:

B67-1 Thank you for your comment.

B67-2 Thank you for your comment.

May 13 '03 22:58 JAMES E. MOODY P.E. FAX 1-907-456-3000 P. 1

B-68

JAMES E. MOODY, P.E.
BOX 71932
FAIRBANKS, ALASKA 99707

PH/FAX: (907) 456-3000

May 13, 2003

U. S. Environmental Protection Agency
Region 10
Office of Water, NPDES Permits Unit

Re: Pogo Gold Mine Project
Draft Environmental Impact Statement

Attn.: Ms. Hanh Gold
NEPA Compliance Coordinator

Dear Sirs:

Attached are my comments relative to the Pogo Gold Draft EIS. In summary, I strongly support the project, but have detailed opinions relative to the use of the preferred road access which vary somewhat from the "preferred" option. The attachment's tabular format is used as most of my comments apparently pertain more to the language and conditions of the proposed Alaska Department of Natural Resources permit, (the "Proposed Decision" provided in Volume II, [Appendices] Section D-3, of the Draft EIS) than to environmental details, so a copy will be provided DNR. The format will permit easy reference to the various points. B68-1

However, because there will easily be environmental impacts if the road permit restricts use of portions of the road exclusively to the Pogo operation when other nearby prospects may become ready for development, the comments are appropriate for the EIS. For example, other nearby development that might be satisfactorily served by the "Pogo" road might to have separate access, thus increasing the negative impact on the environment as a whole. In summary, I believe that straightforward provisions should be included in the project and R-O-W permit to allow Pogo greater freedom to permit non-mine access. B68-2

It is well established that authority and responsibility must go hand-in-hand. Thus if Pogo, rather than the State, is to be responsible for the construction and maintenance of (any portion of) the road, then it should have the authority to control the use of that roadbed. But the State has the basic responsibility for the management of State land and the overall development of State lands and resources. B68-3

The attached comments are intended as constructive "tweaking" of the Pogo proposal as presented to date in the Draft EIS. I would have voiced support at the Fairbanks public hearing, but had not read the Draft EIS and wanted to confirm some of details. The other major topics of the report appear adequately represented; and I believe the overall work has been accomplished satisfactorily with a high degree of professionalism.

Sincerely,

James E. Moody

1.

B68

Sincerely,

James E. Moody

[redacted]

COMMENTS ON POGO GOLD DRAFT EIS

A) Introduction:

A(1) These comments are all related to the proposition that the road will be closed to all traffic other than that serving Pogo's operation.

A(2) As stated in the transmittal, "*It is well established that authority and responsibility must go hand-in-hand. Thus if Pogo, rather than the State, is to be responsible for the construction and maintenance of (any portion of) the road, then it should have full authority to control the use of that roadbed.* But the State has the basic responsibility for the management of State land and the overall development of State lands and resources." B68-3

A(3) Means by which Pogo can permit non-Pogo traffic should be worked out and included in the Department of Natural Resources (DNR) permit ("Proposed Decision") relating to the limited or restricted portion(s) of the road. B68-4

A(4) The location of the 'demarcation point' (Gilles Creek) between the "public" and "Pogo" portions of the road should be reviewed. B68-5

A(5) I am strongly opposed to the idea of making Pogo obliterate the east section of the road after 15 years, or when the mine ceases operation. B68-6

A(6) Background -- I am a native Alaskan born, raised, and schooled through the U of A at Fairbanks. I spent many entire summers within about 30 miles of Pogo, and am familiar with the site itself and local transportation, including having worked on the Shaw Creek Road and other Big Delta area projects during 1953. I am a registered civil engineer, and spent over thirty years with the Territory/State locating, planning, designing, and constructing airports and access roads throughout Alaska. After my retirement in 1985 I participated in evaluating mountain top transmitter sites for the Air Force training area from Eielson AFB to 30 miles east of, and overlapping, the Pogo site. I also made a site evaluation/comparison report of two potential airport locations at the Pogo site early in the project evaluation and planning phase. I have no financial interest in the current project; these comments are submitted as a private citizen.

2.

project evaluation and planning phase. I have no financial interest in the current project, these comments are submitted as a private citizen. B68

B) Settlement:

B(1) I support and encourage opening portions of the State land along the road for sale or other methods of transferring ownership to individuals or private concerns. This should not be a wide-open disposal of land, but some areas suitable for residential purposes should be made available. B68-7

B(2) The road will provide not only access to the specific Pogo operation, but also provides a good means of access to the public domain (State) lands along the route. These are excellent lands for disposal under State programs. Their value will be significantly enhanced by the proposed powerline. Basically, I feel the State should actively work to dispose of portions of the land along the route at as early a date as possible. Advantages are to increase the population of the Big Delta area and its tax base -- an important consideration at this time when a move is on to form a new Borough in the region. B68-8

B(3) In addition, there are other known valuable mineral deposits in the area. The road could assist in more economical mining in areas such as Tibbs Creek, about 20 miles further east, which have seen activity since the 1920's or '30's. B68-9

B(4) Settlement along portions of the road -- perhaps restricted to specific areas -- could assist stabilizing the work force at the mine. That is, some of the workers, especially those with families, may elect to develop homes along the road. The Draft EIS (sections 2.3.21 and 2.3.23, pages 2-34 and -35) describes housing workers in a permanent camp at the mine, and also rotating them "in and out on buses or aircraft" according to their shift schedules. B68-10

B(5) The mine's expected life of 15 years (road permit duration) is long enough to encourage workers to build permanent homes -- thereby contributing to the population of this sparsely settled area. Such workers, with a decent investment in their homes, would have an incentive to produce well and maintain constant employment. By alleviating some of Pogo's camp and rotational costs, it could lead to production economies thus allowing for production from less rich ore bodies, and an extended mine life. Permanent families based in the area will also be a stabilizing factor, helping alleviate what many criticize as Alaska's "boom and bust" cycle. B68-11

3.

of Pogo's camp and rotational costs, it could lead to production economies thus allowing for production from less rich ore bodies, and an extended mine life. Permanent families based in the area will also be a stabilizing factor, helping alleviate what many criticize as Alaska's "boom and bust" cycle. B68

B(6) Such residents would fit in with the general lifestyle of the Big Delta region, and not cause social upheaval. They would be relatively self-sufficient, and used to getting by in a somewhat remote area. B68-12

B(7) Depending on the pattern of forest logging, that industry could benefit from the road and local employees -- which could perhaps foster local timber milling. B68-13

B(8) The driving distance between Pogo and potential homesites can be compared with the driving distance between the Fort Knox mine at Fairbanks and the worker homes in the Fairbanks/North Pole area. Other examples of mines using a combination of on-site housing and nearby private housing include Kennicott/McCarthy, and various U.S.S.R.& M (F.E. Co.) sites near Fairbanks -- Goldstream/Fox, Ester, etc... B68-14

B(9) Settlement along the road would likely be comparable with the existing situation along the Goodpaster. In each case, the residents/owners would prefer plenty of elbowroom, and be concerned about natural resources; and leery of outside visitors. But they would develop friendships with neighbors and become interdependent to some extent. B68-15

4.

B68

B(10) Having a few homes along the road could have advantages with respect to vehicular breakdown, accidents, etc., where nearby help/shelter would come in handy. B68-16

C) Safety

C(1) In an informal discussion prior to the hearing, the idea of allowing the road to be open was mentioned, and a convincing -- at first -- argument was made that it would be unacceptable for a mine truck to round a curve and meet a Winnebago meandering along. In mulling over that case later, it seemed obvious that such tourist traffic is neither desirable nor necessary. Other public roads are suitable for large RV's. B68-17

C(2) However, that raised questions about both the road, and driver experience. First, relative to the road, it will be designed and constructed by registered engineers, and comply with highway standards matching its use. That will be adequate width for passing; ample sight distance including along curves, good drainage, appropriate signing, and so on. Traffic will be going in to the mine as well as coming out, so passing shouldn't be exceptionally critical. B68-18

C(3) I do not propose opening the road to unrestricted/uncontrolled traffic until Pogo feels its cost of operation vs. cost of road maintenance , R-O-W fees, etc., warrant relinquishing control. B68-19

C(4) The volume of traffic, if high, might be a detriment to the mine operations. However, that could be alleviated by restricting the number of trips a resident or site could generate (daily or weekly, etc.). B68-20

C(5) Another reasonable requirement might be to require all road users to maintain vehicle radios tuned to an advisory frequency. B68-21

C(6) Non-Pogo operators could/should be required to maintain liability insurance protecting Pogo from any accident, etc.. Pogo should also have the authority to charge fees for the use of the (private portion) of the road. These would be set to compensate Pogo for the administrative cost of providing the permits, and to offset the additional maintenance or overhead costs Pogo would incur. B68-22

C(7) As to homesites, driveway locations could -- should -- be firmly restricted to sections of road having certain sight distances in each direction. B68-23

C(8) It should not be unreasonable to establish above-average driver's qualifications -- minimum age like 19 or 21; pass a tougher test; possess a commercial license, etc.. B68-24

C(9) Nothing here should be construed as promoting opening the road to non-Pogo traffic during its (the road's) construction phase. I believe that would be impractical and conflict with an efficient construction schedule/program. B68-25

5.

B68

C(9) Nothing here should be construed as promoting opening the road to non-Pogo traffic during its (the road's) construction phase. I believe that would be impractical and conflict with an efficient construction schedule/program.

D - Random Thoughts:

D(1) Depending on what conditions are placed on non-Pogo drivers using the roads, scattered weekend vacation/get-away cabins might be feasible. B68-26

D(2) Pogo could be considered to have monopolistic rights if other potential mine operators or resource developers in the general area are prohibited from using the road. B68-27

D(3) The DNR "Proposed Decision" indicates Pogo will have to pay a fee for the restricted portion of the road. Would it also be true that they would not have to pay fuel taxes, etc., on the "private" portion of the road??? (As I recall, international air carriers are exempt from paying the Alaska State aviation fuel tax on that portion of fuel used while the aircrafty is beyond the U.S. limit -- ocean or Canada. Likewise, I understand that technically users do not have to pay the 'vehicle fuel tax' for fuel consumed in off-road vehicles, generators, chainsaws, etc -- or farm equipment or other vehicles not using public roads.) Another -- weak -- reason to facilitate opening more of the road to the public. B68-28

D(4) During the review period for the Pogo Draft EIS, the concept of 'industrial road development' in Alaska has surfaced. Except for its timing, the Pogo road proposal might otherwise have fallen into that program. Thus, to some degree many of the thoughts expressed here may be of use in formulating plans for other "industrial roads". B68-29

D(5) It would be a waste of energy resources and environmentally harmfull to obliterate the road after the mine closes. Further, I am convinced other resources in the region will suport the continued existence of the road beyond 15 years. B68-30

D(6) At least for the time being, hunting within a certain distance of the road could (should) be prohibited, allowing the Department of Fish & Game to evaluate new impacts on the resource. B68-31

D(7) Traditionally placer miners have had access rights across adjacent claims. Those details are unknown to me, but possibly there is some relevancy here. B68-32

J.E.M. 5/13/03

6.

COMMENT RESPONSE:

B68-1 Thank you for your comment.

B68-2 This suggestion will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B68-3 This suggestion will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B68-4 The means by which non–Pogo use of the mine access road would be allowed will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B68-5 This suggestion will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B68-6 Thank you for your comment.

B68-7 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-8 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-9 ADNR could allow use of the mine access road by other resource users on a case-by-case basis following a public notice and comment process.

B68-10 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-11 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-12 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-13 It is expected that the mine access road would be used to harvest timber from the TVSF lands in the Shaw Creek Valley.

B68-14 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-15 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-16 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-17 Thank you for your comment.

B68-18 Thank you for your comment.

B68-19 Thank you for your comment.

B68-20 Thank you for your comment.

B68-21 Thank you for your comment.

B68-22 This suggestion will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B68-23 Thank you for your comment.

B68-24 Thank you for your comment.

B68-25 Thank you for your comment.

B68-26 Management policies for state lands in the project area are based on the TBAP, updated in 1991. In addition, the TVSF Management Plan, updated in 2001, contains policies for management of the state forest.

B68-27 ADNR could allow use of the mine access road by other resource users on a case-by-case basis following a public notice and comment process.

B68-28 The Applicant would pay fuel taxes for all fuel used by licensed vehicles using the entire length of the mine access road.

B68-29 Thank you for your comment.

B68-30 Thank you for your comment.

B68-31 Closure of state land to hunting, and means of access for hunting, are regulated by the Alaska Board of Game through a separate process outside the scope of this EIS.

B68-32 Thank you for your comment.

B69

May 13, 2003

Subject: EIS comment Pogo Mine

To Whom It May Concern:

This is in response to the EIS document for the Pogo Mine Project and its access route. I am a resident of Shaw Creek Road, which travels through my property as an easement intended for ingress and egress up and down a dead end road. In the EIS document, Pogo and the State now prefer to use this quiet 2 mile section of road for access to the all season route for the lower hillside of the Shaw Creek Watershed and then cross up and over a mountain to enter the Goodpaster River Watershed.

I have several concerns with this preferred route, which puts forestry and mining interest above the welfare of the few residents living along this road, as well as, long term environmental impacts from accidental spills of chemicals and petrochemicals to sediment inputs into Grayling spawning and rearing areas. This preferred route touts the support, funding and power of a billion dollar operation with the legislative and executive backing of State government. When considering this and the effect this project will have on the local economy, I envision this process much like a stream roller plowing over an ant. B69-1

I have concerns about the Lower Hillside Alternative that involves some 20 stream crossings along the proposed route. Many of these stream tributaries do not appear to be inventoried and therefore not much information is available to make educated decisions as to the impacts from this road, the borrow areas and the subsequent forestry roads on fish spawning and rearing and water quality issues. B69-2 One of our neighbors in your recent public meeting expressed concern over their water supply, a shallow flowing spring, becoming contaminated by this venture B69-3

The route as laid out travels over an area comprised of geological dunes with southerly orientation. Due to these factors and nearby archeological findings, the route as proposed along the hillside will undoubtedly contain historical resources. B69-4

This preferred route also fragments a transition zone between wetlands and uplands, that should be considered as high value for wildlife including neotropical birds and diverse plant habitats. B69-5

The preferred route also affects two watersheds instead of one; that previously remained unscathed. B69-6

The proposed entrance using Shaw Creek Road places little or no emphasis on the Peregrine Falcons use of the bluffs by this road and the potential impacts to this bird, which was recently removed from the Threatened and Endangered species list and is now a species of special concern. B69-7

When considering these types of issues I think the document underrates the total impacts to fish, wildlife and people for the preferred route, while overstating the impediments listed for the other two options. B69-8

Sometime early in the process the State made a decision to select this route over others based on forestry's desire for all season access, even though they had been using ice roads for years to get timber out of the Shaw Creek Lower Hillside. This desire was evident when the State put out the revisions to the Tanana Valley State Forestry Plan in 2002. Although we are impacted residents, we never received a copy or notification in B69-9

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B69

our mail of their intention to replace the wording in the TVSF plan from winter access for forestry use off the end of Shaw Creek Road to all season access. B69-9 CONT'D.

I think the other route alternatives are viable and should be explored with the same effort that has gone into the preferred route. The ice road option would be the least intrusive for the watershed. B69-10

While these environmental concerns are important to me, I want to focus on the issues that surround my home and family. Shaw Creek Road is a winding and narrow road, which presently has a posted speed limit of 25 mph. The road has several blind corners including one at our homestead and while this road is sufficient for use with a few families and occasional farm truck, it was never designed to carry semi trucks and trailers as well as heavy traffic numbers on it. The State DOT in the EIS is in error with respect to safety on the road as presently constructed. Their respect for safety was apparent in August of 2001. This road was being upgraded and semi trucks with belly dumps were used to place fill on the road to build it up for a paving job. I had notified the State inspector that was on site of the danger of the trucks and the close calls we were having and how flaggers were needed to provide safety along the road. The person nodded and sympathetically told me that it was the contractor's problem and not theirs. It wasn't until an accident in which a semi with a belly dump ran me off the road and totaled my vehicle, that anyone took notice. I reported this to the State Troopers who sent out a trooper to investigate. The report confirmed that a truck had obviously squeezed me off the road, but since I had avoided contact with the semi and didn't actually collide with it but with a tree in the ravine, the driver wasn't cited (report on file). It wasn't until later after more complaining about safety and another near collision that another trooper came out and required flaggers and to slow down traffic and keep it safe. As a minimum, if this road is used "as is" flaggers should be required for all semi operations during the life of the project. The use of the Tenderfoot option in the EIS would eliminate the need for flaggers. B69-11

As a father with a wife and two daughters at driving age and a son who regularly rides his bike on the road, I think a mining/residential conflict is present. I am assuming that all parties making the decision to use our road will be accountable and liable for any accidents that may occur with the influx of Pogo/Forestry trucks conflicting with residential traffic, biking and walking. B69-12 Obviously the Tenderfoot feeder option is the best for safety and surprisingly is cost-effective. Consider this: If the existing Shaw Creek Road is to be used, the road would need to be straightened for improved sight distance for two way traffic, paved for dust control, and lowering the speed limit for thru trucks to 20 mph instead of the existing 25mph, and then installing speed bumps to prevent overzealous semi drivers wanting to hurry in and out our 2 mile section after going 65 mph for hours on the Richardson when entering and 35mph for hours on the Lower Hillside when exiting to our section. Speed bumps would be the only practical solution to speed enforcement since there will be no other practical way to enforce the speed law 20 miles out of Delta. B69-13 The other cost is the need to move the staging area away from Shaw Creek Road. This is a must. Originally Pogo told us about 6 trucks a day would be using the road-no big deal right? The EIS says that 10 to 20 round trips or more accurately 20-40 trucks per day will be using the road. B69-14 The noise level will be unbearable and the proposed mitigation will not adequately address the impact. With 180 vehicles using the road for 30 minute intervals twice every 3 or 4 days it is insane to think

B69

that as property owners in this area we would need to or would be willing to have this arduous burden encumbering our family and property, including the value of the home and property after a devaluing proposal like this one. Should I be forced to lose money personally so that a company with more resources than I can make money? The Tenderfoot feeder would not affect any property values or family safety in this area. Other potential problems include the proposal to allow access to the public on the mine road. If the existing Shaw Creek Road is used the increase in traffic would compound the safety factor of this road. I would not be agreeable to allowing the mining road to be used by recreational users. B69-14 CONT'D. B69-15

This concludes my comments on the EIS.

Sincerely,

Philip B. Naegele
Mile 1.5 Shaw Creek Road
Delta Junction

COMMENT RESPONSE:

B69-1 Thank you for your comment.

B69-2 The Applicant's ROW application (Teck-Pogo Inc., 2002j) and the baseline resource descriptions in Sections 3.13.1 and 3.13.2 of this document provide adequate information on which to base informed decisions about impacts on fish from the Shaw Creek Hillside all-season road. All significant stream crossings along this route have been inventoried and evaluated as part of this EIS process.

B69-3 Thank you for your comment.

B69-4 Following considerable field investigations, cultural resources along the proposed Shaw Creek Hillside road alignment have been assessed (Section 3.19.3), and potential impacts to those resources have been described (Section 4.14.4). In addition, there is guidance in the National Historic Preservation Act Final Programmatic Agreement (Appendix C.1) that provides specific procedures to be followed if unexpected cultural resources are encountered during project construction and operation.

B69-5 The reader is referred to Sections 3.10, 3.14.1, 4.9.4.

B69-6 Thank you for your comment.

B69-7 The introductory paragraph in Section 4.10.4 has been redrafted in light of the comment.

B69-8 Potential impacts on fish, wildlife, and people described in this document are believed to fairly represent those that would occur from construction and operation of each surface access option.

B69-9 The original 1988 TVSF Management Plan did not limit access to timber sales in Unit 8 to winter-only, and there has not been a revision of the management plan that replaced the wording from winter access to all season access for timber harvesting in the Shaw Creek units. The public process for the revised TVSF Management Plan in 2000 involved public meetings in six communities, mailing of a six-page brochure to approximately 600 individuals and groups, newspaper display ads, and posting in ADNR offices, post offices, and on the ADNR web site. A more detailed response to this comment will be contained in ADNR's final decision for issuance of the ROW, which will be issued after publication of this FEIS.

B69-10 The reader is referred to Section 5.2.3 (Surface Access-Related Options Specific to Alternatives).

B69-11 ADOT/PF has reviewed the Pogo project documentation, including the proposed Plan of Operations, the ROW Application, and the draft EIS, and has determined that the publicly maintained Shaw Creek Road can safely handle the projected traffic levels resulting from the Pogo project. ADOT/PF will work with ADNR and the Applicant to determine if specific mitigation measures could further increase public safety. ADNR will take practicable measures to mitigate impacts from increased use. A more detailed response to this comment will be contained in ADNR's final decision for issuance of the ROW, which will be issued after publication of this FEIS.

B69-12 Shaw Creek Road liability issues relating to commercial use will be no different than they would be on any other public road in Alaska. The Applicant and other operators using the road will be liable for any negligent actions they may take. Also, all public users of any public road in Alaska share the responsibility for safe use of that road with the other users, be they commercial or non-commercial.

B69-13 ADNR has determined it would not be prudent to require the Applicant to spend millions of dollars to construct a road with more safety concerns and technical construction difficulties than the existing public Shaw Creek Road. ADOT/PF has determined that Shaw Creek Road can safely handle the increased traffic levels resulting from the Pogo project. DNR will take practicable measures to mitigate safety impacts from increased use. A more detailed response to this comment will be contained in ADNR's final decision for issuance of the ROW, which will be issued after publication of this FEIS.

B69-14 These issues will be addressed in ADNR's final decision for issuance of the competitive land lease, which will occur after publication of this FEIS.

B69-15 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B70

Ms. Hahn Gold
NEPA Compliance Coordinator
US EPA
1200 Sixth Ave. West OW-130
Seattle, WA 98101

May 12, 2003

Re: Pogo Gold Mine Project

Ms. Gold:

Thank you for the opportunity to comment on the Pogo Gold Mine Project. I am a resident of Shaw Creek Road, the access route preferred by both the state Department of Natural Resources and Teck-Pogo Inc. However, I have grave concerns about the use of Shaw Creek Road as the initial access point from the Richardson Highway, and especially as a staging area for access to the mine. Use of the road as proposed in the draft Environmental Impact Statement would cause a quantum leap in traffic, with resulting safety, noise, dust and general impact. It is unfair to subject the families on Shaw Creek Road to this intrusion simply because we are too few to mount a large-scale protest. B70-1

There are alternatives to using this winding, residential road, but those have been dismissed as being too costly and too limiting, but in reaching this conclusion, the draft Environmental Impact Statement contains inaccuracies.

While I have concerns about the new road crossing streams and affecting water quality and fish populations, I will concentrate my comments on other road issues.

The draft EIS, Vol. I, page 5-32, says the following: "For the Shaw Creek Road sub-option, both safety and noise impacts generally were considered low." Reading on in the same paragraph, it is clear that "low" has a greater reference to the number of people impacted than the degree of impact. B70-2

B70

The subsequent paragraph refers to the safety of the road, as evaluated by the state, to accept traffic volumes, mine traffic and forestry traffic. It concludes "The State … believes Shaw Creek Road can accommodate this traffic safely. Because the road could be upgraded in the future, if necessary, speed limits could be adjusted and other mitigation measures implemented as appropriate, and the Applicant's policy would be to adhere to all speed limits, the safety risk from Pogo-related traffic would be low."

I will rebut that paragraph directly. But it is relevant to keep the above paragraph in context with the paragraphs that follow:

"For the Tenderfoot sub-option, the cost of a new, approximately 3.5 –mile road was estimated at approximately $2.5 million to $3.0 million. This road would terminate in the vicinity of the end of the existing Shaw Creek Road, which already is a state-maintained road. B70-2 Cont'd.

"In the final analysis, it was determined that it would be unreasonable to build a new road merely to avoid an existing state-maintained road, considering that the Shaw Creek Road noise and safety impacts generally would be low or could be mitigated to make them low."

The bottom line is clearly the state will not ask Teck-Pogo to pay for a separate road to address the safety and aesthetic issues of a few residents on Shaw Creek Road. It also ignores the fact that a Tenderfoot Egress would impact few if any watersheds, unlike Shaw Creek Road. Instead, the state has chosen to ignore the hazards of the road, downplay the noise, and dust factors and make a pretense of mitigation factors.

Case in point: the speed limit on Shaw Creek Road. In the section on noise mitigation, the draft EIS makes the follow proposal: "Restrict speed on Shaw Creek Road to 25 miles per hour to reduce noise. Reducing speed by 10 miles per hour, from 35 to 25 mph, could reduce noise levels by 3 to 4 dBA at most receiver locations." B70-3

2

B70

The irony of this is not just the small difference it will make in noise, but that Shaw Creek Road has a posted speed limit of 25 mph. Yet "adjusting the speed limit" is used in multiple portions of the draft EIS as a way of increasing safety and mitigating impact. Further, it is used as a reason the state is not endorsing the Tenderfoot Richardson Highway egress. Page 4-173 says the following regarding that proposed alternative egress route, which would contain switchbacks: "The road could not be built to the design speed of 35 miles per hour." B70-3 Cont'd. B70-4

The obvious conclusion is that despite the fact the posted speed on Shaw Creek Road is, and has been for years, 25 miles per hour, Teck-Pogo and the state are disregarding that. The road is marginally safe, in a passenger car, at 35 mph. But because of the blind curves and sloping twists, it is not safe at all points, and certainly not safe to meet oncoming traffic at as great or greater speed. B70-5

Three times in less than four years, my husband and I have been forced off the road at the same spot in the road. It is an innocuous-looking curve just up from the Shaw Creek frontage. The curve seems to encourage south-bound traffic to drift over the center line. Nearly three years ago, my husband went off the road, totaling our van, to avoid a head-on collision with a belly-dump truck. A few weeks ago, I narrowly clung to the edge of the road in my small Subaru when my neighbor came barreling down the middle of the road in his semi. B70-6

Another half mile from that point, there is a blind 180-degree curve with a pond on one side and a mound (reportedly an archeological site) that obstructs the view on the other. It, too, is an unsafe area. Near my own house, at Mile 1.5, there is another sharp curve that is especially treacherous in the winter. If winter driving conditions were not bad enough in normal situations, a flowing well along the road covers a stretch of the surface with thick ice much of the winter. (see attached photos). All of these are reasons the Department of Transportation saw fit to place

B70

a 25 mph sign (see attached) on Shaw Creek Road. For the state to ignore its own rare flash of good sense is unconscionable and should put the state in a precarious position if an accident occurs on that road. B70-6 Cont'd.

Kurt Hanneman, project director for Teck-Pogo, has discussed with us and our neighbors the need to alter all of these danger spots in the road. Clearly, to make the road safe for heavy mine/forestry traffic will take costly reconstructing and rerouting. It is ludicrous for the state to put Shaw Creek Road forward as the ideal no-cost alternative for access, while ignoring the very viable option of the Tenderfoot Egress. The state has pushed ahead with this endorsement despite concerns from its own staff members, who recognize the limitations of the road. B70-7

Also, the information on noise is nonsensical and inaccurate. Table 3.9-1 indicates that light auto traffic at 100 feet measures at about 50 dBA, which translates to the "subjective impression of quiet" and is 5 dBA higher than a "quiet rural residential area with no activity" and 10 dBA higher than a bedroom or quiet living room. This compares to a heavy truck or motorcycle at 25 feet at 90 dBA. The report also indicates that "Increases of 5 to 7 dBA are usually noticeable to most people, and a 10-dBA change is judged by most people as a doubling of the sound level." B70-8

The draft EIS Table 4.5-2 indicates that at my house, 240 feet from Shaw Creek Road, I can expect the impact from Pogo-related traffic noise to rise from 32 dBA (which falls between "typical wilderness area" and "quiet library" in Table 3.9-1) to 37 dBA, which the report indicates "would be equivalent to a bedroom or quiet living room." Since we can easily hear the passing of a heavy truck on the road from our living room, with the windows closed, these figures clearly are erroneous estimates.

B70

Those figures do not take into account the traffic on Shaw Creek Road should the staging/parking area be located via Shaw Creek Road on the new mine road, as proposed by Teck-Pogo. If the staging area is on Shaw Creek Road, the draft EIS indicates "there would be two, approximately 30-minute periods every 4 days, during each of which up to 180 vehicles would traverse the road." That compares to roughly five to 10 roundtrips each day currently by residents and visitors on average. That is 360 vehicles compared with 20 — a 1700-percent increase. And that does not include heavy truck mining and forestry traffic. B70-9

With the employee traffic, the EIS sound tables show peak traffic as increasing the noise level from 32 dBA to 52 dBA. This means, even if the numbers used are adequately high, which is not possible, we would hear a two-fold increase in the traffic noise along our road. Clearly the sound of a steady stream of bumper-to-bumper traffic along this road twice a day every three to four days will completely change the character of the neighborhood, and cause a bevy of safety concerns. B70-10

As alarming as the noise figures, much more sobering is the draft's proposed mitigation.

1. "Restrict shift changes to daytime hours between 8:00 AM to 6 PM on weekdays." While that may seem magnanimous to Teck-Pogo, all it has done is hopelessly snarl the traffic on Shaw Creek Road when its residents are likely to be traveling to work and/or school and from work and/or school-related activities. It certainly does not mitigate the noise itself. B70-11

2 I have already covered the proposed 35 to 25 mph speed limit reduction. This is not a mitigation factor.

3. Car-pooling or locating bus station on the Richardson Highway. Either of these will reduce the employee traffic, and would mean an improvement in the situation, but B70-12

B70

neither can truly mitigate the intrusion the mine, bus, forestry and related traffic will cause to residents who not only live along the road, but must traverse it. B70-12 Cont'd.

Further, while the report refers to potential dust problems, it makes no effort to quantify the affect of the massive increase in traffic. This, too, does Shaw Creek residents a disservice. B70-13

The only other issue of particular note regarding the access route is whether the Pogo-constructed road from Shaw Creek Road to the mine will be open to general traffic. I oppose its opening because it would only further increase the traffic on the road, and leave the impression to recreationalists that all of Shaw Creek Road is fronted by state land for their use. B70-14

The draft EIS for Pogo Gold Mine Project has failed to make any reasonable effort to protect the safety, health and property values of Shaw Creek Road residents. It downplays environmental issues along the Shaw Creek Road route by emphasizing the environmental impact of using other routes. B70-15

The draft EIS accepts the state of Alaska's pro-industry position that the impact of a few families in a rural area in Alaska is a small price to pay for a new gold mine. It plays the numbers game: that two or three families can't fight against a multinational company with a multimillion dollar gold project. The mitigation factors are a smokescreen; the noise figures are serendipitous; the safety factors are virtually ignored. How can the state or federal governments allow Teck-Pogo to have 180 vehicles, each, in two 30-minute periods every three or four days pass by my house on a winding, dirt, dead-end road 20 miles from the nearest town, completely destroying the aesthetics of my neighborhood and devaluing my property? B70-16

B70

B70

No longer will it be safe for my children and me to ride our bikes or walk our animals along Shaw Creek Road. This rural, residential neighborhood will be mutated into an industrial thoroughfare — little more than a driveway for Teck-Pogo — where pedestrians, domestic animals, wildlife and even residential vehicle traffic must beware. B70-16 CONT'D.

How much longer will the peregrine falcons nest on Shaw Creek Bluff once the lines of traffic begin jostling in and out of Shaw Creek Road. How much longer will the geese, ducks and swans nest in the area? What of the grouse and the den of foxes raised near the power line each year? B70-17

I ask that no approval for the use of Shaw Creek Road as an access route for the Teck-Pogo Gold Mine be granted at this time. Each one of these issues must be properly addressed by professionals who have personally inspected the situation and have acquainted themselves with the concerns of residents of Shaw Creek Road. B70-18

To do less is to trample the rights of the residents of Shaw Creek Road.

Sincerely,

Victoria Naegele
Mailing address: HC 10
Fairbanks, AK 99701
907-895-4012/ fax 907-895-5471

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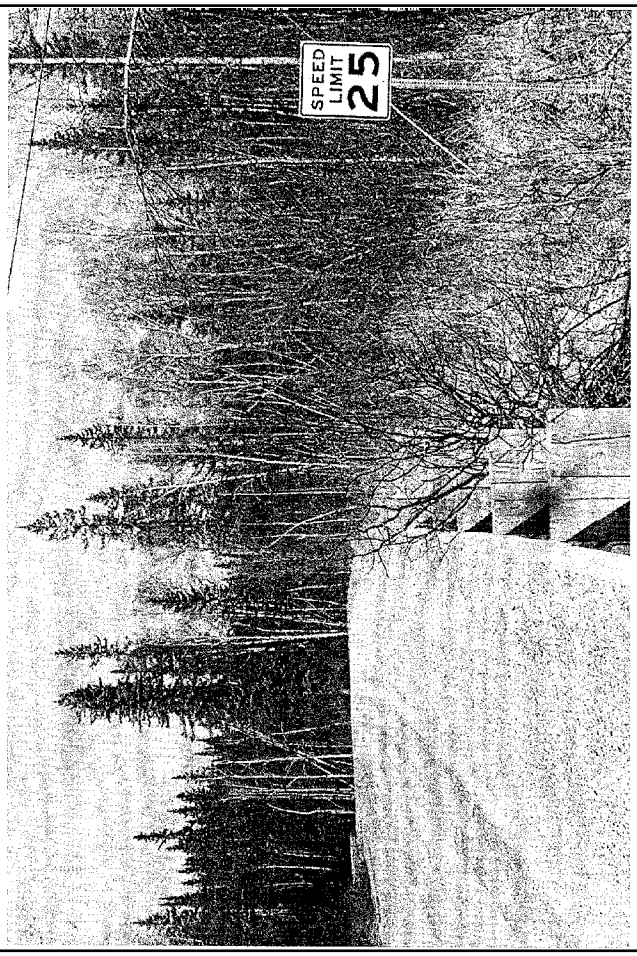

870

COMMENT RESPONSE:

B70-1 Thank you for your comment.

B70-2 The basis for selecting the Shaw Creek Road/Rosa option is described in Section 5.2.3. ADNR has determined it would not be prudent to require the Applicant to spend millions of dollars to construct a road with more safety concerns and technical construction difficulties than the existing public Shaw Creek Road. The Tenderfoot route would cross the same number of drainages as if the Shaw Creek Hillside Road started at the end of the existing Shaw Creek Road. This route would be a detriment to the forest industry because the additional haul costs would be significantly higher due to the adverse grades and more miles of road that would be added. This would be magnified many times over when considering the majority of the timber base is east of the TAPS ROW.

ADOT/PF has determined that Shaw Creek Road can safely handle the increased traffic levels resulting from the Pogo project. DNR will take practicable measures to mitigate safety impacts from increased use in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

B70-3 This comment correctly points out the DEIS was in error and that the existing speed limit on Shaw Creek Road is 25 mph, not 35 mph. The predicted sound levels at residences located near Shaw Creek Road have been recalculated (Tables 4.5-2 and 4.5-3) to reflect the reality of the existing 25 mph speed limit on the road.

B70-4 References to a 35 mph design speed in Section 4.18.4, and at 4.18 in Table 5.1-3, have been removed.

B70-5 ADOT/PF has determined that Shaw Creek Road can safely handle the increased traffic levels resulting from the Pogo project, and will work with ADNR and the Applicant to determine if specific mitigation measures could further increase public safety. DNR will take practicable measures to mitigate safety impacts from increased use in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

B70-6 ADOT/PF has determined that Shaw Creek Road can safely handle the increased traffic levels resulting from the Pogo project, and will work with ADNR and the Applicant to determine if specific mitigation measures could further increase public safety. Overflow ice is a common problem on Alaskan roads during winter months, and there are well established methods to control or eliminate this hazard. Maintenance of Shaw Creek Road will continue to be the responsibility of ADOT/PF. DNR will take practicable measures to mitigate safety impacts from increased use in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

B70-7 ADNR has determined it would not be prudent to require the Applicant to spend millions of dollars to construct a road with more safety concerns and technical construction difficulties than the existing public Shaw Creek Road. ADOT/PF has determined that Shaw Creek Road can safely handle the increased traffic levels resulting from the Pogo project. DNR will take practicable measures to mitigate safety impacts from increased use in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

B70-8 The sound levels and relative loudness values in Table 3.9-1 are considered accurate. The predicted sound levels at residences located near Shaw Creek Road have been recalculated (Tables 4.5-2 and 4.5-3) to reflect the reality of the existing 25 mph speed limit on the road, and are based on standard noise level evaluation and predictive procedures.

B70-9 The noise levels in table 4.5-2 assume the bus station would be located in the vicinity of the Richardson Highway and there would be no personal vehicle shift change traffic on Shaw Creek Road. Noise levels for the option of the bus station being located near the TAPS crossing are presented in Table 4.5-3.

B70-10 The existing and projected Shaw Creek Road residences' noise level values in Table 4.5-3 have been recalculated using the existing speed limit of 25 mph and are considered accurate. They are based on standard noise level evaluation and predictive procedures. The predicted level of 49 dBA at R5 would represent a 17 dBA increase above existing noise levels and would be considered as a high impact.

B70-11 If the bus station were to be located near the TAPS crossing, ADNR would work with residents to determine the best time for shift changes.

B70-12 Thank you for your comment.

B70-13 Dust control measures are not currently used on Shaw Creek Road. If substantial increases in dust were directly related to mine traffic, the Applicant would be required to use mitigation measures.

B70-14 Thank you for your comment.

B70-15 Potential impacts to resources described in this document are believed to fairly represent those that would occur from construction and operation of each surface access option, and possible mitigation measures that would lessen impacts on Shaw Creek Road residents are identified.

B70-16 The State of Alaska will do everything practicable and prudent to mitigate the possible adverse impacts to the residents of Shaw Creek Road (some of the possible mitigation measures are discussed in this document). There will undoubtedly be some additional impacts on Shaw Creek Road residents, however, from increased traffic.

Shaw Creek Road is a public road that provides access to a large block of state land managed for multiple concurrent use, including mineral, timber, and other industrial development. It would be unrealistic for the residents bordering on wide spreads of state land to expect that such land would not be developed at some point. This is especially

true given that resource development for these state lands has been contemplated for many years, beginning with timber planning in the 1970s.

The management intent for these lands was determined, after a public process, by the Tanana Basin Area Plan in 1985. Another public process further refined this management intent when the TBAP was updated in 1991. In addition, the 1988 TVSF Management Plan and its 2001 update also underwent a significant public process to determine management intent for these lands. The existing Shaw Creek Road itself was developed for access to agriculture, and has a history of commercial traffic from the onset.

DNR understands that regardless of mitigation measures, increased traffic on Shaw Creek Road will still impact residents to some degree. It would not be responsible, however, for DNR to prohibit all commercial uses of Shaw Creek Road and force resource development interests to construct separate access to bypass a public road. This would unnecessarily add costs to resource development projects and unnecessarily commit state lands for a duplicate function.

ADNR made substantial efforts to inform Shaw Creek Road residents of these processes and could only presume that existing and prospective property owners along Shaw Creek Road were aware of the potential future development in the area.

B70-17 The reader is referred to Section 4.9.4.

B70-18 Thank you for your comment.

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POGO MINING PROJECT
E – I – S COMMENTS 2003

I favor the proposed POGO mining program. 871-1

I understand exactly the limited access E-I-S stance taken by the company regarding access. I also understand the State's desire to keep about 25 miles open for public use.

SOLUTION:

[1] Perhaps the State should insist that part of the access route into the mine use a portion of access routes proposed, where applicable, in 1993 as part of the State of Alaska's land selection program. Thus future identified road accesses into Alaska's lands can be continued more readily in this area.

- Route, i.e., Descriptions: 29 – Dan Creek Loop
  30 – FNSB Link
  33 – Splits Link
  34 – Sand Creek Loop

871-2

- See the attached partial map depicting the route locations in the area.

[2] Perhaps the State would be willing to pay for construction and maintenance of the first 25 miles of access with the proviso that they can extend the road at anytime. 871-3

R. L. Odsather

R. L. "OD" Odsather 457-8345
1372 Gilmore Trail Fairbanks, Alaska 99712

POGO Mine Testimony **April 30, 2003**

B71

ALASKA STATE LAND ISSUES DATE: February 28, 2003

..... DNR Plat those 1993 selected lands located on State land .....

PROPOSAL: DNR begin plating those selections on State land

DNR has yet to begin the plating of those selected corridors, mineral and oil/gas lands located on State land in 1993. Many opportunities for the State of Alaska to begin realizing income have been lost because of neglect by DNR and the State in expediting this work.

SOLUTION: Plat those lands selected on State land by NLT December 1, 2005

DNR needs to seek funding now to accelerate plating those selections located on State lands. Work products would include: plats, access right (s)-of-way, ownerships other than the State if any, all appropriate survey coordinates, legal issues, and problem identification to minimize future development on State lands. If there are problems, a team should be set up consisting of the AG's office, DNR, DOT/PF and the Governors office.

The lands do not have to have an "on-the-ground" survey at this time a "protracted survey" would adequately serve the State's purpose. An actual "on-the-ground" survey would be provided when required at a future date. An EIS and or EA would also be developed at a later date also. Plating will also identify existing, i.e., legal issues contained within the plat that may require legal attention by the state.

RS-2477's on state lands under SB-180 would follow the "protracted survey" criteria, including other information accumulated in the future until a need develops to provide an "on-the-ground" survey.

Costs for the various future surveys could be born or shared with the future developer.

The idea is to preserve Alaska's ownership options NOW without great expense. Some of the selected lands and RS-2477's may never be used but Alaska's ability for development 150 years in the future is not precluded either.

Lands having conflicting, i.e., legal issues within the boundaries of their selected areas will need to be handled and funded separately.

"OD" Odsather Alaska State Land Issues ..... DNR Plating 4/30/2003

B71

Date: June 15, 1992

Route Name: **#29 Dan Creek Loop**

Source: 1992 DNR/DOT&PF Corridor Update-Identification Project

Termini: The route begins and ends (loops off from) the Splits Link.

Purpose:
- To provide access to resources within the corridor.
- To provide a surface connection between routes in the Chena and Salcha drainages and the Upper Forty-mile area.

Benefits:
- Would enhance the economic viability of resource development in the corridor area.
- Would access the recreational potential of the corridor area.

Description: The route loops east off the "Splits" Link to the headwaters of the Salcha River, and then heads down the Salcha River to rejoin the "Splits" Link.

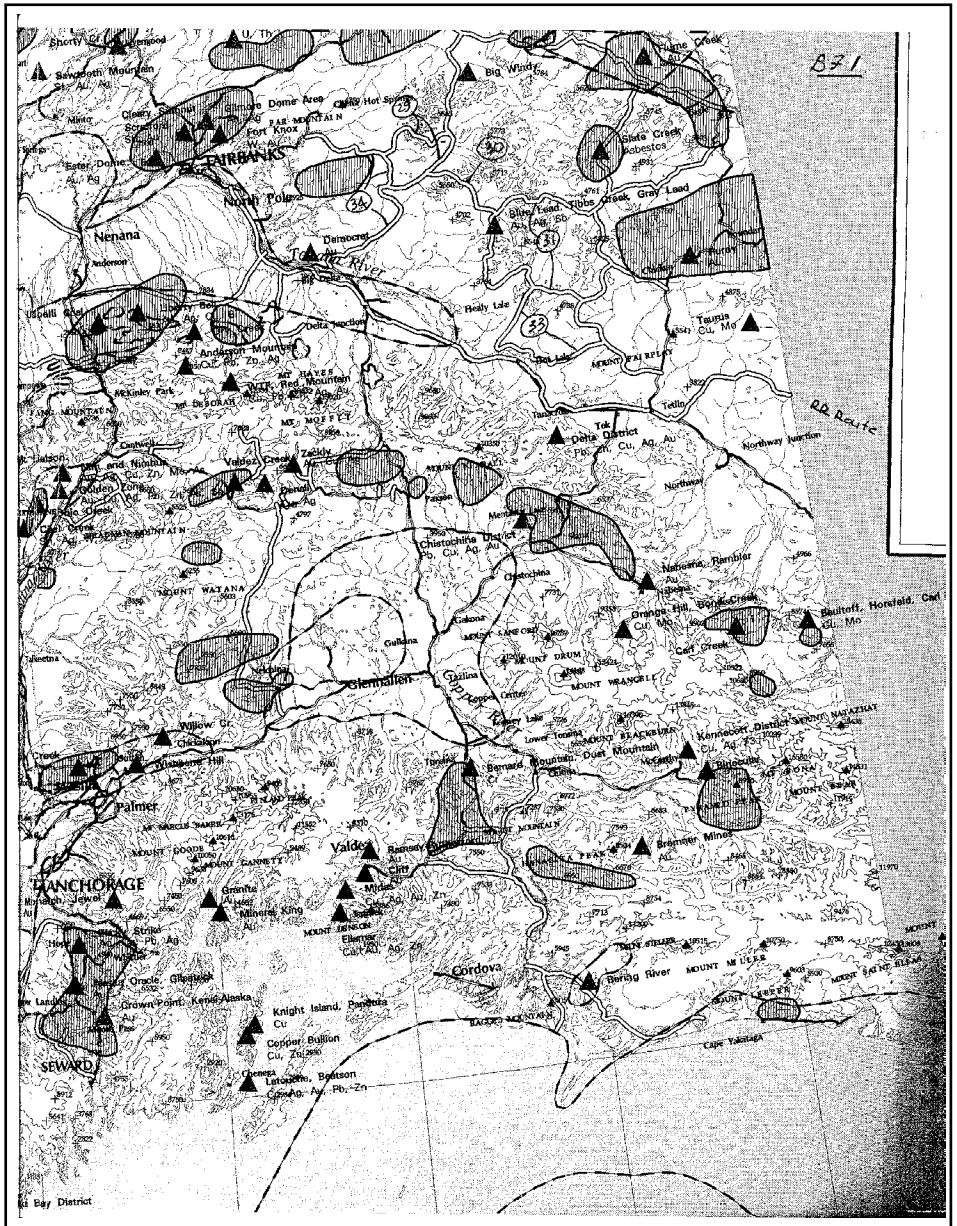
The route is approximately **68** miles long.

Probable Modes:

X Highways
____ Pipelines
____ Railroads
____ Utilities
____ Other

Timeframe:

#29 Dan Creek Loop Page 1



B71

_____ Short Term (less than 10 years)
_____ Medium Term (10 to 50 years)
__X__ Long Term (beyond 50 years)

Land Status: The attached maps show alignments and land status for the route. Involved land, broken down by ownership/ management is as follows:

Agency/Owner	Length (Miles)	Approx Acreage*
Selectable Federal	12	20,000
Fed Parks, Refuges, W&S Rivers	0	0
National Forest	0	0
Petroleum Reserve	0	0
State	36	52,500
Private	0	0
Other	20	730

*Acreage on state land and on selectable federal land is based on whole sections involved by a mile-wide corridor. Acreage on the remaining categories of land is based on a 300' wide right of way.

Comments: Approximately 20 miles of the route is located within military reserve.

Right of Way Situation: Likely means of acquisition or certification.

B71

1 = Certain or Probable 2 = Possible
3 = Unlikely or Not Applicable

ANILCA Title XI	3	ANILCA Authorized	3
CSU Boundary Change	3	Fed Title V (FLPMA)	2
Statehood Omnibus	3	Fed 44 LD 513	3
Section Line	2	State Title 19 (Acquisition)	2
RS-2477	3	State Title 38 (Public Lands)	1
Fee Selection	1	Fed Title 23 (FHWA)	2
Land Exchange	3	1825 Treaty	3

Major Physical Constraints:
- Alignment alternatives are moderately constrained by hilly terrain.
- Standard attention will need to be given to minimizing effects on permafrost and wetland areas.

Major Social, Economic, Environmental Considerations: New access provided by the facility may be controversial to some people.

Recommendations:
- Select available land within the corridor.
- Prioritize conveyance of State select land in the corridor.
- Manage State land to accommodate future development of the route.

Applicable Current or Historical Studies: None known.

USGS Quadrangles Involved: Big Delta

B71

Date: June 15, 1992

Route Name: **#30 FNSB (Fairbanks North Star Borough) Link**

Source: 1992 DNR/DOT&PF Corridor Update-Identification Project

Termini: Dan Creek Loop on the northwest to Harper Mountain Loop on the southeast.

Purpose: To provide a surface link between a corridor system in the upper Salcha/upper Shaw Creek area and a corridor system in the upper Forty-mile area.

Benefits:
- Would enhance the economic viability of resource development in the corridor area.
- Would access the recreational potential of the corridor area.

Description: The route would extend from the Dan Creek Loop (T3S, R14E, Fairbanks Meridian) southeasterly to the Harper Mountain Loop (T5S, R18E, Fairbanks Meridian). It generally routes up Porcupine Creek and down Eisenmerger Fork.

The route is approximately **32** miles long.

Probable Modes:

X Highways
____ Pipelines
____ Railroads
____ Utilities
____ Other

B71

Timeframe:

_____ Short Term (less than 10 years)
_____ Medium Term (10 to 50 years)
__X__ Long Term (beyond 50 years)

Land Status: The attached maps show alignments and land status for the route. Involved land, broken down by ownership/ management is as follows:

Agency/Owner	Length (Miles)	Approx Acreage*
Selectable Federal	0	0
Fed Parks, Refuges, W&S Rivers	0	0
National Forest	0	0
Petroleum Reserve	0	0
State	32	44,000
Private	0	0
Other	0	0

*Acreage on state land and on selectable federal land is based on whole sections involved by a mile-wide corridor. Acreage on the remaining categories of land is based on a 300' wide right of way.

B71

Right of Way Situation: Likely means of acquisition or certification.

1 = Certain or Probable 2 = Possible
3 = Unlikely or Not Applicable

ANILCA Title XI	3	ANILCA Authorized	3
CSU Boundary Change	3	Fed Title V (FLPMA)	3
Statehood Omnibus	3	Fed 44 LD 513	3
Section Line	2	State Title 19 (Acquisition)	3
RS-2477	1	State Title 38 (Public Lands)	1
Fee Selection	3	Fed Title 23 (FHWA)	3
Land Exchange	3	1825 Treaty	3

Comments: The entire route is on State TA'd land.

Approximately 8 miles of the route coincides with a possible RS-2477 right-of-way (State Trail #101-52).

Major Physical Constraints:
- Alignment alternatives are moderately constrained by hilly terrain.
- Standard attention will need to be given to minimizing effects on permafrost and wetland areas.

Major Social, Economic, Environmental Considerations: New access provided by the facility may be controversial.

Recommendations:
- Select available land within the corridor.
- Prioritize conveyance of State select land in the corridor.
- Manage State land to accommodate future development of the route.
- Assert appropriate RS-2477

Applicable Current or Historical Studies: None known.

USGS Quadrangles Big Delta

871

Date: June 15, 1992

Route Name: **#33 Sand Creek Loop**

Source: 1992 DNR / DOT&PF Corridor Update - Identification Project

Termini: Junction with the Mount Harper Loop (T26N, R8E, Fairbanks Meridian) to junction with the Mosquito Flats Corridor (T22N, R12E, Fairbanks Meridian).

Purpose: To provide access to extensive State Land.

Benefits:
- Would enhance the economic viability of the resource development in the corridor area.
- Would access the recreational potential of a large area north of the Tanana River.

Description: From it's junction with the Mt. Harper Loop. This route heads southwesterly to Sand Lake. It then turns to the southeast paralleling the north side of the Tanana River, before turning east to Mansfield Creek. Then routing up Mansfield Creek, crossing the divide into the West Fork of the Dennison Fork and connection into the Mosquito Flats Corridor.

The route is approximately **72** miles long.

Probable Modes:

x Highways
___ Pipelines
___ Railroads
___ Utilities
___ Other

Timeframe:

___ Short Term (less than 10 years)

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___ Medium Term (10 to 50 years)
x Long Term (beyond 50 years)

Land Status: The attached maps show alignments and land status for the route. Involved land, broken down by ownership /management is as follows:

Agency/Owner	Length (Miles)	Approx Acreage*
Selectable Federal	0	0
Fed Parks, Refuges, W&S Rivers	0	0
National Forest	0	0
Petroleum Reserve	0	0
State	44	60.160
Private	28	1.020
Other	0	0

*Acreage on state land and on selectable federal land is based on whole sections involved by a mile-wide corridor. Acreage on the remaining categories of land is based on a 300' wide right of way.

Comments: The route crosses some land that is dual selected (native & state). For calculation purposes that is considered private land. If the state gains title to it, the acreage will be recalculated.

Right of Way Situation: Likely means of acquisition or certification.

1 = Certain or Probable 2 = Possible
3 = Unlikely or Not Applicable

ANILCA Title XI	3	ANILCA Authorized	3
CSU Boundary Change	3	Fed Title V (FLPMA)	3
Statehood Omnibus	3	Fed 44 LD 513	3
Section Line	2	State Title 19 (Acquisition)	1
RS-2477	3	State Title 38 (Public Lands)	1
Fee Selection	2	Fed Title 23 (FHWA)	3
Land Exchange	2	1825 Treaty	3

Major Physical Constraints: Alignment alternatives are substantially constrained by topography.

B71

	Standard attention will need to be directed at minimizing impacts on wetlands and permafrost.
Major Social, Economic, Environmental Considerations:	Special attention will need to be given to effects on lifestyles and subsistence.
Recommendations:	- Prioritize conveyance of state selections in the corridor. - Manage state land to accommodate future development
Applicable Current or Historical Studies:	None Known
USGS Quadrangles Involved:	Eagle, Mt. Hayes, Tanacross

B71

Date:	June 15, 1992
Route Name:	**#34 Splits Link**
Source:	1992 DNR/DOT&PF Corridor Update-Identification Project
Termini:	Chena Hot Springs Road at the Chena River East Fork to the Richardson Highway at Shaw Creek.
Purpose:	- To provide surface access through a large block of State land. - To provide access to an area of identified mineral potential.
Benefits:	- Would enhance the economic viability of mineral and timber resource development in the corridor area. - Would access the recreational potential of the corridor area.
Description:	From Chena Hot Springs Road the route heads east and south to the Salcha River. From there it heads south to the headwaters of Shaw Creek before following the north edge of the Shaw Creek Valley to the Richardson Highway. The route is approximately **96** miles long.
Probable Modes:	__X__ Highways _____ Pipelines _____ Railroads _____ Utilities _____ Other
Timeframe:	_____ Short Term (less than 10 years) _____ Medium Term (10 to 50 years) __X__ Long Term (beyond 50 years)

B71

Land Status: The attached maps show alignments and land status for the route. Involved land, broken down by ownership/ management is as follows:

Agency/Owner	Length (Miles)	Approx Acreage
Selectable Federal	0	0
Fed Parks, Refuges, W&S Rivers	0	0
National Forest	0	0
Petroleum Reserve	0	0
State	68	97.000
Private	0	0
Other	28	8.400

*Acreage on state land and on selectable federal land is based on whole sections involved by a mile-wide corridor. Acreage on the remaining categories of land is based on a 300' wide right of way.

Comments: Approximately 28 miles of the route cross military reserve land.

Right of Way Situation: Likely means of acquisition or certification.

1 = Certain or Probable 2 = Possible
3 = Unlikely or Not Applicable

ANILCA Title XI	3	ANILCA Authorized	3
CSU Boundary	3	Fed Title V (FLPMA)	1
Statehood Omnibus	3	Fed 44 LD 513	3
Section Line	2	State Title 19 (Acquisition)	2
RS-2477	1	State Title 38 (Public Lands)	1
Fee Selection	1	Fed Title 23 (FHWA)	1
Land Exchange	3	1825 Treaty	3

Comments: Approximately 7 miles of the route coincide with a possible RS-2477 (State Trail #100-193B).

B71

Major Physical Constraints:
- Alignment alternatives are moderately constrained by hilly terrain.
- Standard attention will need to be given to minimizing effects on permafrost and wetland areas.

Major Social, Economic, Environmental Considerations: New access provided by the facility may be controversial to some people.

Recommendations:
- Prioritize conveyance of State select land in the corridor.
- Manage State land to accommodate future development of the route.
- Assert RS-2477

Applicable Current or Historical Studies: None known.

USGS Quadrangles Involved: Big Delta

COMMENT RESPONSE:

B71-1 Thank you for your comment.

B71-2 The validity of many proposed RS2477 ROWs remains questionable from legal as well as a geographic (specific alignment) perspectives. Surface access routes considered in this document were determined on the basis of minimizing environmental impacts. Thus, it may not be reasonable to attempt to substitute a questionable RS 2477 ROW at this time.

B71-3 Whether or not the State were to pay to construct the first 25 miles of the mine access road, it could still maintain and/or expand that segment of the road in the future. At this time the State intends to reclaim the road between Gilles Creek and the mine, and a public notice and comment process would occur were there to be any change in this intent.

B72

I (PRINT YOUR NAME) Gail Olsen FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

POGO PROJECT

GOODPASTER ACCESS / NO CHANGE TO EXISTING ACCESS TO THE GOOD PASTER RIVER

LIABILITY / THE POTENTIAL FOR LOOTING FROM PEOPLE WITH PRIVATE PROPERTY IF THE ROAD IS OPEN TO THE PUBLIC

EXISTING SHAW CREEK ROAD/ BY NOT OPENING THE ROAD TO THE PUBLIC THERE WILL NOT BE A LOT OF TRAFFIC ON THE SHAW CREEK ROAD OTHER THEN MINING EQUIPMENT COMING AND GOING TO THE MINE

RECREATION/ BY NOT OPENING THE ROAD TO THE PUBLIC EXISTING RECREATION IN THE AREA WOULD NOT BE AFFECTED, THAT AND THE ALASKA DEPT. OF FISH AND GAME WOULD NOT MAKE THE AREA A SPIKE FORK FIFTY AREA FOR MOOSE. WITCH WOULD BE A HARDSHIP ON THE PEOPLE THAT DEPEND ON MOOSE MEAT TO FEED THEIR FAMILIES B72-1

SAFETY/ BY NOT OPENING ACCESS TO THE PUBLIC WOULD SAVE LIVES AND HELP THE MINE RUN WITH OUT HAVING PEOPLE IN THE WAY

COMMERCIAL RECREATION/ ACCESS TO SHAW CREEK VALLEY WOULD NOT BE AFFECTED BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS AND WOULD KEEP UNWANTED LOOTERS OUT OF THE AREA

TRAPPING / BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS YOU WOULD NOT HAVE ANY PROBLEMS WITH TRAPPERS, PEOPLE WOULD NOT BE OUT THERE STEALING THE CATCH AND DESTROYING THEIR TRAP LINES

SUBSISTENCE/ IF THE MINE ROAD WAS OPENED YOU WOULD RUIN THE HUNTING FOR A LOT OF PEOPLE BECAUSE THE ALASKA DEPT. OF FISH AND GAME HAS ALL READY SAID THAT THEY WOULD MAKE THE AREA SPIKE FORK FIFTY INSTEAD OF ANY BULL WITCH WOULD MAKE A HARD SHIP ON PEOPLE THAT HUNT MOOSE TO FEED THERE FAMILIES

ORV USE OF THE SHAW CREEK VALLEY / WOULD NOT BE AFFECTED THEY COULD STILL GO WHERE THEY GO KNOW BY LEAVING THE MINE ROAD CLOSED TO THE PUBLIC, AND KEEP FROM HAVING A BIG SURGE OF PEOPLE IN THE AREA

B72

TIMBER / THE TIMBER IN THE AREA COULD BE LOGGED BY WORKING WITH THE MINE TO USE TO ROAD FOR ACCESS TO THE TIMBER AND ANY ROADS THE LOGGERS MAKE MUST BE RECLAIMED WHEN THEY ARE FINISHED LOGGING

MANAGEMENT OF THE WHOLE ROAD BY THE TECH -POGO INC./ THE MINE SHOULD MANAGE THE WHOLE ROAD AS FAR AS ACCESS FOR SAFETY SO THERE IS NO ONE GETTING RUN OVER AND IN THE WAY OF MINING TRUCKS AND EQUIPMENT, AND TO OF UNWANTED PEOPLE IN THE AREA WHERE WE WILL HAVE PEOPLE STEALING AND LOOTING PRIVATE PROPERTY IN THE AREA, AND WHEN THE MINE IS FINISHED IN THE AREA, THEY RECLAIM THE ROAD BACK TO THE START OF IT AT THE FOWLER DAIRY B72-1 CONT'D.

NAME: GAIL Olsen Gail Olsen
ADDRESS: PO Box 58420 Fairbanks AK 99711
PHONE : 907-488-9081
DATE: 4-30-03

COMMENT RESPONSE:

B72-1 Thank you for your comment.

B73

I (PRINT YOUR NAME) Lee Olsen FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

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NAME: Lee Olsen
ADDRESS: P.O. Box 58420 Fairbanks Ak. 99711
PHONE : 488-9081
DATE: 4/30/03

COMMENT RESPONSE:

B73-1 Thank you for your comment.

B74

Thomas Paragi
<tparagi@hotmail.com
>

05/12/2003 10:04 AM

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: POGO mine EIS comments--request acknowledgment of receipt

10 May 2003<?xml:namespace prefix = o ns = "urn:schemas-microsoft-com:office:office" />

Mr. Hanh Gold
<?xml:namespace prefix = st1 ns = "urn:schemas-microsoft-com:office:smarttags" />U.S. EPA, Region 10
1200 Sixth Avenue
Seattle, Washington 98101
gold.hanh@epa.gov

RE: comments on POGO mine EIS

Dear Mr. Gold:

I have flown over the Shaw Creek basin several times and traveled through it by snowmachine a couple times. My major concern with the proposed POGO mine is contamination of wetlands and riparian areas with sodium cyanide, which is highly toxic to aquatic life in the short term (*R. Eisler, D.R. Clark, S.N. Wiemeyer, and C.J. Henny. 1999. Sodium cyanide hazards to fish and other wildlife from gold mining operations. Pages 55-67 in J.M. Azcue, editor. Environmental impacts of mining activities: emphasis on mitigation and remedial measures.*
The preferred hillside route crosses several creeks that feed into the Tanana River, so a cyanide spill from the Shaw Creek basin could affect salmon spawning and rearing habitats for many miles downstream, potentially as far downstream as the greater Fairbanks area with 85,000 people. Table 4.3-15 projects an average of 20 tons per week of sodium cyanide to be hauled into the mine overland. B74-1

I also have concerns about disturbance of moose on wintering range in the Shaw Creek drainage that could be caused by eventual public traffic on the proposed "south ridge" access route. Thus, I concur with the proposed access (northern "hillside route) with three stipulations:

1) Access during the snow-free period should be by POGO traffic only for the duration of mine activity and not other commercial/industrial uses. This should minimize degradation of the road surface and traffic conflict, which both reduce chances of a sodium cyanide contamination if a truck accident occurs near one of the many creeks crossed by the proposed all-season hillside road. B74-2

2) Access during winter conditions (12 inches of frost in ground and ice on all creeks) while the mine is in operation may also include commercial/industrial traffic. All non-POGO traffic should contain communication equipment for route coordination with POGO traffic to reduce accident potential. Frozen ground and ice would greatly enhance effectiveness of spill containment and presumably cyanide recovery, which would reduce contamination of wetlands and riparian areas the following spring.

3) No motor vehicle traffic by the public during active operations of the mine, either summer or winter. B74-2 CONT'D.

I also recommend retention of the airstrip at the mine site upon completion of mining operations. B74-3

Sincerely,

Tom Paragi
1271 Lowbush Lane
Fairbanks, AK 99709-6039

*Help STOP SPAM with the new MSN 8 and get 2 months FREE**

COMMENT RESPONSE:

B74-1 Transportation and handling of hazardous materials such as sodium cyanide are strictly regulated by both federal and state agencies. Section 2.3.17 (Reagent Handling) briefly summarizes these processes. Section 4.3.4 (Water Quality, Alternative 2, Access, Route) discusses probability of spills.

B74-2 These suggestions will be addressed by ADNR in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

B74-3 Thank you for your comment.

B75

I (PRINT YOUR NAME) George W. Pearson FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

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B75-1 CONT'D.

NAME: George W. Pearson
ADDRESS: 1103 THOMAS EDISON WAY
PHONE : North Pole AK 99705
DATE: (907) 488 9236
4-14-03

COMMENT RESPONSE:

B75-1 Thank you for your comment.

B76

Kenneth R. Pohle
P.O. Box 10709
Fairbanks, AK 99710

May 9, 2003

Mr. Ed Fogles, Pogo Project Manager
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900 D
Anchorage, AK 99501-3577

RE: Proposed management options of Shaw Creek Hillside right-of-way.

Dear Mr. Fogles,

I have reviewed the Pogo DEIS and the proposed permits and other required state actions. The agency personnel, company staff, and related contractors have studied the issues and masterfully laid them out in logical fashion for easy understanding. The proposed Pogo project is well thought-out and the DEIS makes a case for the "Agency Preferred Alternative."

However, I think the DNR proposal to allow the public on the first part of the Shaw Creek Hillside road needs to be reconsidered based upon the following observations:

- Having experience with the public around the Fairbanks area, any secondary road draws the public onto it for recreational purposes. The public is not particularly courteous in picking when and where they park, often restricting access or totally blocking the roads. During the summer, RV "land yachts" are found on all roads and create major obstructions. Also, the public is not always safety conscious when driving on any Alaska road.
- The proposed road is being built with a variable width travel way, no turnouts, single lane bridges--not a true two lane public road. The road design serves the capacity and safety needs of the timber industry and the mine, not the added public traffic.
- The truck drivers and bus drivers (occupants and cargo) operating on the road should not be subjected to the added safety hazard and risk of oncoming public traffic, lane obstructions, or just plain road blockage.
- The Pogo project should not be required to build a public access road when it does not serve the mine. Proposed company control of traffic and radio contact makes good safety policy during the life of the mine.
- The regulatory community should not force Teck into accepting increased risk and liability because completion of permitting the project might hang in the balance.

B76-1

Please reconsider your "Agency Preferred Alternative" to allow the public on the first part of the road during the active life of the mine.

I request the State adopt the described "Alternative Management Option".

I strongly support the construction and operation of the Pogo mine and think it will be a positive industrial addition to the interior of Alaska. B76-2

Thank you for the opportunity to comment on the DEIS and related permit items.

Yours truly,

Kenneth R. Pohle

COMMENT RESPONSE:

B76-1 Thank you for your comment.

B76-2 Thank you for your comment.

B77

Katharine Richardson
<katric@alaska.net>
05/12/2003 10:39 AM

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: Pogo Mine EIS Comments

Comments on Pogo Mine EIS

I attended your Public Meeting on April 30, 2003 in Fairbanks and was impressed with all the positive comments made regarding the Pogo Gold Mine being developed near Delta.

I would like to address my comments specifically to the issue of the road. In October 2000 I sent you comments in favor of keeping the road open to the public after the mine eventually closes. As a result of information I heard at the meeting I have changed my opinion in certain ways. I agree that as Teck is financing and building the road it should certainly be closed to the public during the lifetime of the mine. However, due to the proximity to both Fairbanks and Delta, I am now concerned that if kept open after the mine closure, the road may be overused by the public. The question was also raised at the meeting of potential future mining companies who might want to use the same road. B77-1

I would like to suggest the following. If any large mines are open, the road should be closed to the public. If it is no longer needed for mining, a short portion - possibly 10 miles depending on the topography - could be turned over to the State. Then wherever the "end" is placed, I suggest the State develop a campground. Although there are several campgrounds between Fairbanks and Delta I think there is always a need for more and this might be a good location. Then I would prefer to see the rest of the road reclaimed and closed to the public. One of my main concerns is the impact on the habitat and wildlife if the area becomes too easily accessible to large numbers of people. If the mine were in a remote area I would stand by my original comments of 2000.

Thank you for this opportunity to comment on your mining project that I strongly support. B77-2

Katharine Richardson
Box 80766
Fairbanks, AK 99708

COMMENT RESPONSE:

B77-1 Thank you for your comment.

B77-2 Thank you for your comment.

B78

From Bill Ridder <bridder@wildak.net>
Date Wednesday, May 14, 2003 1:10 am
To "'ed_fogels@dnr.state.ak.us'" <ed_fogels@dnr.state.ak.us>
Cc "'gold.hahn@epa.gov'" <gold.hahn@epa.gov>
Subject DEIS comments

Ed,
So much for waiting till the last minute. It's still the 13th ADST and so it's legal and you better consider it.

As a 29 year resident of this state and a 25 year resident of the Shaw Creek area, I am going to offer you my two cents and comment on the state's draft permit decisions regarding the Pogo Mine. I do this as a private citizen of Alaska and Shaw Creek.

I am all for the Pogo Mine. Since we are all still procreating, we need economic development to support us. (Unfortunately. But that's something bigger than this project and I won't go into it.) B78-1

The permittee, Teck-Pogo, has expressed a desire to do their development in the most environmentally conscious way. They focus their attention to the Goodpaster drainage where human development has created a political base. They have relegated the Shaw Creek drainage, a pristine environment compared to the Goodpaster, to an after thought. And the state has followed their lead. I commend Pogo-Teck, Teck-Pogo, whatever, their consideration of the environmental effects in their design to the Goodpaster drainage. However, their treatment of the Shaw Creek drainage and the people living within it, is less than the concern they feel for the Goodpaster "people".

The Pogo Mine should be developed but in keeping with Pogo-Teck's claim to proceed in the most environmentally, and socially, responsible way, they should revise their preferred access alternative as should the state of Alaska. B78-2

Road Access.
The state should confine development to specific areas. In the 100 mile corridor between Delta and Fairbanks, the Shaw Creek drainage is the least impacted by human development. As such, it is unique, virtually pristine. In the future, such places close to human habitation will be at a premium. Whatever the Goodpaster Properties Asocc and the Tanana Basin Plan asserts, the Goodpaster is impacted by humans much more than Shaw Creek. Where should the state direct development? If there were 60+ owners within the Shaw Creek drainage politically connected as there are in the Goodpaster, would the state's determination be the same?

After the mine's life span, or during it, the South Ridge route would be a boost to tourism. There would be tremendous views and wildlife viewing. This would persist long after resource extraction will have run its course. B78-3

The logging road that you constantly refer as a "given" is anything but. The value of the timber in the Shaw Creel drainage, I suspect, does not pay for an all season road and its maintenance given any return to the state. From my experience, the DOF does a terrible job at maintaining the

B78

roads they have put in. A seasonal road would suffice for timber harvest. B78-4 cont'd.

In summary, the South Ridge route would be the most environmentally benign and the most lucrative to the state in the long term of all the alternatives. However at present, socially, it is the near the bottom of the pile. The concerns of construction and safety of the South Ridge access are smoke screens. The most difficult construction and safety aspect of all alternatives is the 18 mile traverse of the divide between Shaw Creek and the Goodpaster. B78-5

Shaw Creek egress.

Given the Shaw Creek hillside route, egress from the Rich Hwy should be via the Tenderfoot option. We are considering a 1.6 billion project here. An additional 2-3 million to construct a Tenderfoot egress is peanuts. Your rationale of construction difficulties, gulley's, grades, etc pales in comparison the traverse over the Shaw/Goodpaster divide. You base this claim on Pogo's assessment of the route. Pogo will save 3 million dollars using Shaw Creek road yet severely impact the few residents of Shaw Creek Road and cost the state millions in upgrades to the present road. This goes against their avowed claim of being environmentally conscious. (No political base in Shaw Creek, let's save money!) B78-6

The only reason Shaw Creek Road is a state maintained road is because, back in the fifties, Fowler's Dairy Farm had kids that needed schooling. Three kids. This was not a pretext for an industrial road as is before us today. It was helping neighbors. Will we do this now? B78-7

For safety sake, major upgrades will be needed on Shaw Creek Road. Will the state or Pogo pay for this? Believe me, the present Shaw Creek Road is not amenable to semi traffic. B78-8

The Tenderfoot egress would follow DOF roads constructed in the mid 1990's. This egress would open more of the Tanana Valley state forest than the Shaw Creek road egress. Plus, it would not destroy the present characteristics of Shaw Creek Road. B78-9

Staging area.

To minimize conflicts in any alternative, the staging are should be in the present Rich Hwy corridor. The selected area, south of the highway, is an active floodplain of the Tanana River. For optimum benefit, the staging area should be located in a high ground area closer to Delta Junction, say in the area near Quartz Lake Road. The preferred area in the draft permit is subject to erosion. Two gravel pits in the proposed staging area were excavated for the Ak Pipeline and have since have been reclaimed by the river. B78-10

Access management.

To minimize impacts considering the design of the road, access should be limited to the mine and commercial logging for the life of the Pogo Mine and any other mine that may follow Pogo. Exceptions would be if opening the road will lead to positive impacts, ie opening the Prudhoe Bay haul Road to tourists. This latter scenario would only apply to the South Ridge B78-11

B78

Route . No tourist bebefits would accrue from the Shaw Creek route. B78-11 CONT'D.

Material sites.

Develop sites with the long term objective of providing for fish stocking. B78-12

Sincerely,
Bill Ridder
Mp 288 Old Rich Hwy

COMMENT RESPONSE:

B78-1 Thank you for your comment.

B78-2 The management intent for state lands in the project area was determined, after a public process, by the Tanana Basin Area Plan in 1985. Another public process further refined this management intent when the TBAP was updated in 1991. In addition, the 1988 TVSF Management Plan and its 2001 update also underwent a significant public process to determine management intent for these lands. These documents serve as the basis for land and resource management decisions within the Shaw Creek and Goodpaster River drainages.

Potential impacts to resources described in this document, including to residents of both the Shaw Creek and Goodpaster River valleys, are believed to fairly represent those that would occur from construction and operation of each surface access option.

B78-3 The reader is referred to Section 5.2.3.

B78-4 All-season access to the Shaw Creek Valley state forest units has been a longstanding high priority for the DOF. Construction of all-season timber access would have been authorized through a timber sale contract by this time if it were not for the Pogo Mine project application process and the anticipated construction of a road through the state forest for mine access purposes.

The initial easement across private lands at the end of Shaw Creek Road for all-season access to Unit 8 of the TVSF was acquired by ADNR in the 1970s. The first timber sales in Unit 8, with all-season access provisions, went through the review process in 1995. The all-season access route has been through both public and agency review in the 5-Year Timber Schedule annually since 1990. The DOF has been ready to offer sales in Unit 8, including construction of all-season access, for several years. In anticipation of sales in Unit 8, the DOF has already purchased bridges, culverts, and road fabric. To coordinate access routes and minimize impacts, the DOF decided to delay its road construction plans until the Pogo Mine permitting process was completed.

Because operating timber harvesting equipment on steep slopes in winter conditions poses significant safety and operational concerns, the steep topography on the north side of Shaw Creek Flats necessitates all-season access to properly manage the timber resources. In addition to the safety and operational concerns with winter-only logging, the short three-month window for winter harvest activities makes it very difficult to sustain a viable timber industry. A year-round supply of timber provides a stronger economic base for harvesters and sawmills. Delta's forestry industry cannot survive on winter only access. The DOF needs all-season access to timber sale areas because most of the Delta forestry area is currently accessible only during winter months. Even the Gerstle River area, one of the few areas traditionally accessible year around, has become accessible only during winter months in recent years due to flooding.

B78-5 Potential impacts to resources described in this document are believed to fairly represent those that would occur from construction and operation of each surface access option.

B78-6 The basis for selecting the Shaw Creek Road/Rosa option is described in Section 5.2.3. ADNR has determined it would not be prudent to require the Applicant to spend millions of dollars to construct a road with more safety concerns and technical construction difficulties than the existing public Shaw Creek Road. ADOT/PF has determined that Shaw Creek Road can safely handle the increased traffic levels resulting from the Pogo project. DNR will take practicable measures to mitigate safety impacts from increased use in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

B78-7 The existing Shaw Creek Road itself initially was developed for access to agriculture, and has a history of commercial traffic from the onset. Shaw Creek Road is a public road that provides access to a large block of state land managed for multiple concurrent use, including mineral, timber, and other industrial development. It would be unrealistic for the residents bordering on wide spreads of state land to expect that such land would not be developed at some point. This is especially true given that resource development for these state lands has been contemplated for many years, beginning with timber planning in the 1970s.

The State of Alaska will do everything practicable and prudent to mitigate the possible adverse impacts to the residents of Shaw Creek Road (specific mitigation measures are discussed in this document). There will

undoubtedly be some additional impacts on Shaw Creek Road residents, however, from increased traffic.

The management intent for these lands was determined, after a public process, by the Tanana Basin Area Plan in 1985. Another public process further refined this management intent when the TBAP was updated in 1991. In addition, the 1988 TVSF Management Plan and its 2001 update also underwent a significant public process to determine management intent for these lands.

DNR understands that regardless of mitigation measures, increased traffic on Shaw Creek Road will still impact residents to some degree. It would not be responsible, however, for DNR to prohibit all commercial uses of Shaw Creek Road and force resource development interests to construct separate access to bypass a public road. This would unnecessarily add costs to resource development projects and unnecessarily commit state lands for a duplicate function.

Every resident of Shaw Creek Road has either had ample opportunity to participate in these processes, or at least should have been aware of the State's management intent for these lands prior to purchasing property along the road.

B78-8 The Applicant would be responsible for maintenance of any segment of the road not open to public use. If a segment of the road were open to public use during mine operations, the State and the Applicant would develop a road maintenance agreement that would define the roles of both entities.

B78-9 The Tenderfoot route would open up a little more of the state forest than is currently accessed. It would be to the detriment of the forest industry, however, because the additional haul costs would be significantly higher due to the adverse grades and more miles of road that would need to be added. This would be magnified many times over when considering that the majority of the timber base is east of the TAPS ROW. The timber industry prefers the existing Shaw Creek route due to feasibility of future timber sales and safety of the relatively flat and straight road compared to the hilly Tenderfoot route.

B78-10 On the basis of this, and similar comments, ADNR is working with the Applicant to identify potential gravel borrow sites not subject to flooding and erosion. This issue will be addressed by ADNR's in its final decision for issuance of the competitive land lease, which will occur after publication of this FEIS.

B78-11 Thank you for your comment.

B78-12 This suggestion will be addressed by ADNR's in its final decision for issuance of the competitive land lease, which will occur after publication of this FEIS.

B79

Robert B. Robinson
4424 Teel Court
Juneau, Alaska 99801
(907) 789-2700

RECEIVED
MAY - 9 2003
U.S. EPA REGION 10
OFFICE OF WATER

Ms. Hahn Gold
NEPA Compliance Coordinator
USEPA
1200 6th Ave. OW-130
Seattle, WA 98101

May 5, 2003

Dear Ms. ~~Hahn~~ Gold:

Having read the Pogo DEIS, I would like to make a few comments regarding the road access and water discharge. I feel the Shaw Creek Hillside all-season road option is the best, and that it should be available to other industrial users such as logging and other mine development. B79-1 When the Pogo operation is completed, I would prefer to see the road turned over to the state so that it will be available for recreational and subsistence use, as well as future resource production from the area. I feel it is important that no currently accessible public roadway be lost to the public because of the new mine access. B79-2

I think the best way to discharge industrial wastewater would be a treatment plant followed by discharge through injection wells. The additional filtering and dilution available in the subsurface could be less trouble-prone than discharge to a mixing zone. B79-3

The Pogo mine will be a valuable economic asset to interior Alaska. I hope the EPA can do whatever possible to improve and expedite the development of the Pogo project. B79-4

Sincerely,

Bob Robinson

Bob Robinson

COMMENT RESPONSE:

B79-1 Thank you for your comment.

B79-2 Thank you for your comment.

B79-3 Thank you for your comment.

B79-4 Thank you for your comment.

B80

From: fncar [fncar@uaf.edu]
Sent: Friday, May 23, 2003 1:18 PM
To: ed_fogels@dnr.state.ak.us
Subject: pogo mine comments

Importance: High

Dear Ed

I have been following road access to the Pogo mine ever since I attended a meeting at Teck offices on the subject several years ago. With a couple of exceptions, I can support the preferred access options you have laid out in the EIS. B80-1

While I personally support reclaiming the entire road when mining is completed, I believe that it is a fair trade-off to keep the portion which crosses the Tanana Valley State Forest open for forestry, personal wood use, hunting and other related activities. I believe reclaiming the remaining portion is crucial for protecting the Goodpaster River and, as a hunter, the high country which is in the range of the Fortymile caribou herd. I am pleased to see that you have listened to the public and included this in the draft plan. B80-2

My major disagreement stems from the nature of the right-of-way through the state forest while the mine is active. I do not believe that the road should be opened to the general population during this time, only after the mine has closed. I support the Alternative Management Option. B80-3

Secondly, I think the procedures laid out for authorizing additional uses of the section of the road past Gilles Creek should be strengthened so that such future decisions can not be made lightly. DNR should make it clear that these processes will be mandatory handset forth a framework that will assure a transparent, democratic process when such eventualities may arise. B80-4

Thank you for the opportunity to comment and for incorporating our concerns into the draft document.

Sincerely,

Carl Roland

COMMENT RESPONSE:

B80-1 Thank you for your comment.

B80-2 Thank you for your comment.

B80-3 Thank you for your comment.

B80-4 This suggestion will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

May-11-03 18:46 From- T-842 P.02/04 F-314

B81

1 of 3

Pogo Gold Mine Project

3 Issues

Public Comment on Draft E.I.S.

Dean Seibold & Family
Resident Quartz Lake/Goodpaster R.
Mail Address: Box 1010, Delta Jct AK 99737

3 Issues

1.) Re: Public access on the "Pogo road".

There should be no public access on the road. because of safety reasons and to lessen the short term impact on the Shaw creek flats aswell as the surrounding hills (Traplines). However, the road will, in its own right change, and devastate the pristine quality of the area for current users (Noise). Current Cabin owners Reb Fergusen, and Jack Wilson should be given life time passess or access to the road. just as they have from Alyeska for the pipeline pad. B81-1

continued....

May-11-03 19:46 From- T-842 P.04/04 F-314 B81

P.2 of 3

continued... This will allow them better access or egress creating a safer enviornment for their trapline and Dogsled expeditions. a small concession that will help mitigate their loss of serenity and peace. (Noise), (lights). B81-1 Cont'd.

AS 38.05.035 — AS 38.05.115

2.) Material Sites on Rich Hwy. The State of Alaska should not compete with private enterprize by Auctioning or selling material sites along the rich hwy. Material site #2 is in the Tanana riverbed. #2 will be costly and dangerous due to the river levels in late summer, There are private material sites for sale/lease along the Rich Hwy. across the road, close by that are Not in B81-2

continued →

May-11-03 19:46 From- T-842 P.03/04 F-314 B81

P.3 of 3.

Not in the Tanana river, and have no impact on any fish bearing water stream or body. Office cabin + gravel pit at mile 283.5 Rich hwy. - 160 acres. B81-2 Cont'd.

3) Private land close to the Shaw Creek is also available for Maintaince and Staging facility. We own 1.5 miles of highway frontage along the Rich Hwy. and would welcome the buisness. We shouldn't have to compete with Alaska DNR for the buisness if the location is sutible for the project. AS 38.05.035, and AS 38.05.070 B81-3

COMMENT RESPONSE:

B81-1 Thank you for your comment.

B81-2 ADNR cannot mandate where the applicant would purchase its gravel. If there were a private source of gravel available, that would be a matter strictly between the owner of the gravel and the applicant. It is the State's policy, however, to make its natural resources available for public use, and ADNR routinely offers gravel for sale. Any gravel sold by ADNR must be sold for at least its fair market value; therefore, ADNR could not undercut private sector prices.

B81-3 Thank you for your comment.

B82

The Shaw Family

452 Marshall Drive, Fairbanks, AK 99712 * (907) 455-6171

April 29, 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Re: Pogo Project

Dear Hanh:

We are writing to voice our support for the timely resolution of permit process for the Pogo project. B82-1

We support the "Agency Preferred Alternative" identified in the Draft EIS, with the provision that that DNR adopt the "Alternative Management Option" for management of the access road. B82-2

We support the draft NPDES permit. B82-3

We support the draft DEC Waste Disposal permit. B82-4

Thank you for helping to grow Alaska's future by facilitating the development of mining.

Sincerely

Brian and Lorna Shaw

COMMENT RESPONSE:

B82-1 Thank you for your comment.
B82-2 Thank you for your comment.
B82-3 Thank you for your comment.
B82-4 Thank you for your comment.

B83

Wendell J. Shiffler, 929 Reindeer Dr., Fairbanks, Alaska 99709
Phone: 907-479-6104 Fax: 907-479-6121

May 1, 2003

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, Washington 98101

RE: Public Testimony –DEIS Draft Permit Decisions

Tonights testimony was refreshing, in that it reflected the extreme amount of work that everyone has put into the process to make sure each voice is heard.

As a resident of Fairbanks for 35 years, a property owner on Quartz Lake, Alaska near Delta, and a teacher in the public school system for over a quarter of a century, I commend all those involved with this permitting process of the Pogo Mine.

I have received tons of information from the developers and the government in Alaska and the U.S., and have had the opportunity to have my voice heard all along the way. The process itself is a lesson in education, and a good example of how things can be done in the spirit of development and cooperation for the benefit of all.

So, lets get on with the process, grant the permits relating to the proposed routes and preferred development alternatives….and do the job as quickly as possible. B83-1

Thanks for coming to Fairbanks to receive input.

Sincerely,

Wendell J. Shiffler

COMMENT RESPONSE:

B83-1 Thank you for your comment.

B84

taiga ventures

2700 S. Cushman • Fairbanks, AK 99701 • Ph: (907) 452-6631 • Fax: (907) 451-8632 • taigaventures@compuserve.com

5/04/03

My name is Mike Tolbert and I am the president and owner of Taiga Ventures, remote logistics specialist, located at 2700 S. Cushman, Fairbanks, Alaska.

I would like to be on record as approving of the development of the Pogo Mine and the construction of an all season road using the Shaw Creek Hillside access. B84-1

Mines are where one finds them. We have no choice on where the resources on earth are located. Since our life and the quality of it hinges on the discovery and development of minerals and resources, we should encourage and move toward making them accessible in the best and most modern and acceptable construction methods.

Mines make instant positive economic impact on areas they are near. Services companies, suppliers and workers all benefit. These well thought out mines are generally long term, ten to fifteen years, and open the area to even more development on the peripheral. Consider, for example, the huge positive impact of the Fort Knox mine and the awesome payrolls that have been generated for almost a decade. This, compared to the short impact of the Missile B84-2

B84

Remote Logistics, Inc. dba

Defense Project, has much more added benefits over the long term. B84-2 CONT'D.

As I wake up in the morning and brush my teeth, I appreciate the fact that there are 11 mined minerals in the toothpaste. There simply are very, very few things in our daily lives that are not, in some form or fashion, a product of resource discovery and development.

So, with this fact and appreciation for what nature provides us, I support the opening and operation of the Pogo Mine which in many ways will enhance our lives.

Further, I would like to give much of the credit for the forward and patient movement of the Pogo Project by TeckCominco to a dynamic local staff, spearheaded by a local product, Karl Hanneman. His dedication to and relationship with this Alaskan community has been incredible. At every opportunity, Karl has layed out the challenges and benefits of this incredibly interesting plan for the proper development of the Pogo Mine. Bravo!! B84-3

Mike Tolbert

COMMENT RESPONSE:

B84-1 Thank you for your comment.

B84-2 Thank you for your comment.

B84-3 Thank you for your comment.

B85

From the Desk of:
SCOTT THORSON
11161 BRIGGS COURT
ANCHORAGE, ALASKA 99516

RECEIVED
APR 23
U.S. EPA REGION 10
OFFICE OF WATER

April 19, 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, Washington 98101

Dear Hanh Gold:

This letter contains my comments on the EIS for Teck-Pogo, Inc's. proposed development of the underground Pogo Mine. I am only representing myself and I appreciate the opportunity to submit my comments to you.

It is my understanding of the proposed project that the mine would process 2,500 tons of ore per day and would produce approximately 375,000 ounces of gold annually, with a possibility of increasing production and expanding the mill to 3,500 tons per day and 500,000 annually. The project would require 25 to 33 months to construct and would have a life expectancy of 11 years, based on current ore reserves. The capital cost of the project is estimated at $200 million to $250 million. The mine would operate with an initial workforce of approximately 300.

Further, my understanding of this project is that it would include a mill and camp complex, a dry-stack tailings pile and recycle tailings pond, an airstrip, gravel pits and a local network of roads. An all-season 50-mile road would provide surface access to the mine. Power would be supplied from the regional grid through a powerline adjacent to the road.

I believe that this is a great project for Alaska and I strongly support it going forward into production. The EPA should provide timely resolution of the permitting process so that the Pogo Gold Mining Project can move forward. This project is a great example of a sound project that will help drive Alaska's economy into the future. B85-1

I endorse the Preferred Alternative identified in the Draft Environmental Impact Statement, with the provision that the Alaska Department of Natural Resources adopts the Alternative Management Option for management of the Shaw Creek Hillside access road. B85-2

B85

I believe that the Alternative Management Option for the Shaw Creek Hillside Road will result in increased safety for the public, reduced short term impacts to subsistence, trapping and commercial recreation, reduced short-term impacts to wetlands from ORV use and increased revenue to the State from right-of-way fees, material sales and timber sale receipts. B85-2 Cont'd.

Furthermore, I believe that Teck-Pogo has designed an advanced operation that will minimize the project's footprint on the environment. The project has been designed to meet Alaska water quality standards and not degrade the water quality of the Goodpaster River. B85-3

Thank you for the opportunity to comment.

Sincerely,

Scott Thorson

COMMENT RESPONSE:

B85-1 Thank you for your comment.

B85-2 Thank you for your comment.

B85-3 Thank you for your comment.

B86

Usibelli Coal Mine, Inc.
Charlie Boddy
Vice-President of Governmental Relations

100 Cushman St.- Suite 210 • Fairbanks, Alaska 99701
Telephone (907) 452-2625 • Facsimile (907) 451-6543

May 9th, 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, Washington 98101

Subject: Pogo Mine Draft Environmental Impact Statement (DEIS)

Ms. Hanh,

Usibelli Coal Mine Incorporated is writing you today to add their support for the Pogo gold mining project near Delta. The following comments are offered for your consideration. B86-1

The Pogo Mine Project is viable, and would be an outstanding addition to other mining operations located in the interior of Alaska. This mine will provide a major boost to the local economy, and provide excellent near and long term employment opportunities. B86-2

We urge you to approve the DEIS utilizing the "Alternate Management Option" for the Shaw Creek Hillside mine access road. Additionally we ask the associated permits currently receiving review and comment be issued on a timely basis. With best regards, B86-3

Sincerely,

Charlie Boddy

Cc: Mr. Karl Hanneman, Teck-Pogo Inc.
file

COMMENT RESPONSE:

B86-1 Thank you for your comment.

B86-2 Thank you for your comment.

B86-3 Thank you for your comment.

B87

David van den Berg
<trips@arcticwild.com
>

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: pogo EIS comments

05/13/2003 01:13 PM

Please include these comments in the official public record for the Draft Environmental Impact Statement for Pogo Gold Mine Project.

I was a member of the Fortymile Caribou Management Planning Team and have been a member of the Northern Alaska Environmental Center for 12 or 13 years. In both capacities, I have been most concerned with road access into pristine, presently remote areas. Whether these areas are on the fringe of critical wildlife habitat or right in the heart, my concern, proven throughout the north American continent, is that roads beget roads. The 49-mile road to the Pogo gold mine will be the longest road constructed in Alaska since 1973; indeed, the first 23 miles alone earn that distinction.

Roads subtly alter many facets of an area's ecology. Roads introduce activities that may compete with existing uses, degrade other resource values or complicate other management objectives. Roads fragment habitat for non-migratory species as well as the long-haulers like caribou. And they do it one road at a time. B87-1

In my opinion, one of the the biggest long-term environmental consequences of permitting the Pogo gold mine is the construction of a new road. I am apparently joined in this view by the State of Alaska, Teck Cominco, and many, many members of the public.

The State's Proposed Decision on the Right of Way is nothing short of revolutionary. Not only does it recognize that the last 26 miles of the road should remain closed for the life of the mine, it also intends that that portion of the road be reclaimed, pending a public process, at the end of the Pogo mine's life. And Teck's Alternative Management Option (with respect to treatment of the road) is farther to the "left" than some conservation organizations.

I support the Alternative Management Option. It improves on the excellent concept developed by the State by putting the first 23 miles of the Shaw Creek Hillside route "under glass" for the mine life. There will, of course, be other commercial users using the road (and creating their own roads radiating from the first 23 miles of road). These uses will be limited in scope, regulated and permitted as they are currently, etc. But at mine closure, what web of infrastructure has grown over the years will be knowable. And so the public and managing agencies can make a better plan for the area before the first 23 miles is fully opened. The Alternative Management Option is the most conservative approach to the birth of a new road. B87-2

At mine closure, when the question is finally ripe of whether or not to reclaim the last 26 miles of the Pogo access road, the bridge over Gilles Creek should be part of the reclamation proposal. Taking out key infrastructure (at Teck's expense) bespeaks a commitment to restoring the upper Shaw Creek valley to it's pre-Pogo condition while still providing full access to the Tanana Valley State Forest. B87-3

The power line should be aligned within the road right of way as much as possible to make it easier and less impacting to construct and to reclaim. B87-4

B87

Thank you for the opportunity to offer comment.

David van den Berg
PO Box 80433
Fairbanks, AK 99708
479-6829

COMMENT RESPONSE:

B87-1 Thank you for your comment.

B87-2 Thank you for your comment.

B87-3 Thank you for your comment.

B87-4 As a result of this and two similar comments, the Applicant has decided to reroute the power line corridor out of the Sutton Creek drainage and follow the road alignment across the Shaw Creek and Goodpaster divide.

B88

RECEIVED
MAY - 5 2003
U.S. EPA REGION 10
OFFICE OF WATER

VECO ALASKA, INC.
6411 'A' Street
Anchorage, Alaska 99518 Phone: 907-550-8237 Fax: 907-550-8810

April 28, 2003 **VIA FAX (206) 552-0165**

U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Attention: Hanh Gold, NEPA Compliance Coordinator

Dear Ms. Gold:

My name is Wesley Nason, and I am employed by VECO Alaska, Inc. VECO is an Alaska-owned company engaged in engineering, construction, maintenance and operations of process and power facilities for the mining and hydrocarbon industries in Alaska. We support environmentally responsible development such as the POGO Gold Mining Project, and believe the EPA, Alaska's DNR, and the U.S. Army Corps of Engineers provide a vital role in our State's economic development by providing timely and reasonable resolution of permit applications.

We endorse the draft NPDES permit and the draft Alaska Department of Environmental Conservation waste disposal permit and believe the EPA and the Alaska Department of Natural Resources should provide expedited resolution of the permitting process for this important project. B88-1 The Pogo Mine will provide major benefits to Interior Alaska and further diversification to the Alaskan economy. Mines provide local employment and build tax bases for support of local services. This improves the lives of those living near such developments, and decreases the burden placed on State spending to provide local services in areas without major private sector employers. B88-2

Pending receipt of the necessary permits, Teck-Pogo plans to invest $250 Million in the construction of a new underground mine, surface process facilities, and infrastructure. This investment will create 500 jobs during the first two years of construction, and 300 permanent jobs during its operation.

Teck-Pogo has designed an advanced operation, which is described in the Draft Environmental Impact Statement (EIS). This design will meet Alaska water quality standards and will minimize environmental impact. Importantly, the water quality of the Goodpaster River will not be degraded.

We endorse the Preferred Alternative identified in the Draft EIS, with the provision that the Alaska Department of Natural Resources adopts the Alternative Management Option for management of the Shaw Creek Hillside Access Road. B88-3

B88

This Alternative Management Option preserves current public safety standards, reduces short term impacts to subsistence, trapping, and commercial recreation, prevents additional impacts to wetlands from ORV use, and provides increased revenues to the State from right-of-way fees, material sales, and timber sales. B88-3 CONT'D.

We urge the EPA and Alaska DNR to initiate the permits, which will allow production of Alaska's official mineral, gold, from the first major underground gold mine in Alaska since World War II. The State of Alaska currently has only one major gold mine in operation, or about one for every 600,000 square miles of land area. By comparison, Nevada, known as "the mining state" has about 17 major gold mining operations, or one for every 6,000 square miles. The average mining job in both Alaska and Nevada provides annual wages of about $60,000, or double other industries. Alaska's economy needs the economic and social benefits, which flow from this type of responsible mineral development. B88-4

Respectfully submitted,
VECO Alaska, Inc.

Wesley Nason

Wesley P. Nason
Mineral Sector Service Manager

COMMENT RESPONSE:

B88-1 Thank you for your comment.
B88-2 Thank you for your comment.
B88-3 Thank you for your comment.
B88-4 Thank you for your comment.

B87

April 7, 2003

Allen Vezey
1216 Range View Road
North Pole, Alaska 99705-5389

Alaska Department of Natural Resources
550 W. 7th Ave
Anchorage Alaska 99501-3577

Attn Mr. Ed Fogels

Re: POGO Project
Draft Environmental Impact Statement
Management Options for Road

Dear Sir:

I am writing to comment on the management options for the road for the POGO Project. I own property on both sides of Shaw Creek Road. I am writing in support of the Alternate Management Plan which calls for a portion of the road to be opened to the public at the end of the mine life.

There are many reasons why the alternate management plans is superior to the recommended management plan.

1. It is the public policy of the State of Alaska to encourage development of our resources. To require that a private entity using private sources of capital should build a public use facility is a major disincentive to private investment. The issues are obvious and basic to the concept of private investment. To create a precedence of public use would be to create a long term disincentive to private development and is thus bad public policy. B87-1

2. The issue of risk management is totally different in the private sector as opposed to the public sector. The private sector is required to build temporary facilities to a standard that will provide for the safety of its employees, contractors, and service industry personnel. Adherence to a strict standard of safety is a condition of employment or an obligation that goes with a contract.

B89

VEZEY – DNR
POGO PROJECT
DRAFT ENVIRONMENT IMPACT STATEMENT
ROAD MANAGEMENT PLAN
4/7/2003
Page 2 of 3

While this standard of construction and maintenance is high it is nowhere near as high as the standard required for a public use road. The general public is not expected to act in a professional manner. This statement applies even more strongly to recreational vehicle operators. The proposed road is not an un-maintained trail or road and the courts do hold the party responsible for construction and maintenance liable. In addition the private entity doing the development has no control over the conduct of the general public. Nor is it likely that the state would enforce safety standards on this subject private road. Our public roads are already receiving minimum enforcement of safety regulations.

Employees and contractors have statutory limits on the limits of recovery they can obtain from an employer. There are no limits of liability to what the general public can allege to impose upon a private sector entity. To force a private entity to accept (and thus manage) this liability is a deterrent to private investment and development. One accident can and frequently does exceed a million dollars in tort claims and actual payments for damages. Not only would the private sector developer held responsible for the construction and the construction standards of the road; it is held liable for the maintenance or lack thereof. The state has not offered to provide maintenance for this privately funded and built road.

B89-1 CONT'D.

3. There is an inherent conflict between general public users and industrial users. If there is no general public use, the conflict is easily managed both from a safety and risk perspective and from the loss of or decrease in productivity. If there is public use then the additional risk due to liabilities or potential liabilities has to be managed. Normally this is done through expanded insurance coverage with a corresponding increase in premium costs. In addition the productivity gained from the privately

B89

VEZEY – DNR
POGO PROJECT
DRAFT ENVIRONMENT IMPACT STATEMENT
ROAD MANAGEMENT PLAN
4/7/2003
Page 3 of 3

funded and built facility is diminished if general public use is allowed.

4. Allowing general public use of a mine development road would create a bad precedence. The Red Dog Mine has been a major economic engine for the Northwest Arctic. This project depends upon a road that connects it to the port facility. This road crosses both public and private lands and was built with private monies borrowed from the State of Alaska. Still it is a private road.

5. Even the Dalton Hwy was not open to the public until it became part of the federal highway system with authorization to spend federal funds on improvements and maintenance. Even when the state was providing maintenance of the road it, the majority of the road was closed to public use. At that time it was the official position of the state that it was not safe for the public use and that the state could not afford to provide needed public safety enforcement.

B89-1 CONT'D.

I encourage you to adopt the alternative management plan.

Sincerely,

Allen Vezey

Cc: POGO

COMMENT RESPONSE:

B89-1 Thank you for your comment.

B90

I (PRINT YOUR NAME) Kit R. Walker FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

POGO PROJECT

GOODPASTER ACCESS / NO CHANGE TO EXISTING ACCESS TO THE GOOD PASTER RIVER

LIABILITY / THE POTENTIAL FOR LOOTING FROM PEOPLE WITH PRIVATE PROPERTY IF THE ROAD IS OPEN TO THE PUBLIC

EXISTING SHAW CREEK ROAD/ BY NOT OPENING THE ROAD TO THE PUBLIC THERE WILL NOT BE A LOT OF TRAFFIC ON THE SHAW CREEK ROAD OTHER THEN MINING EQUIPMENT COMING AND GOING TO THE MINE

RECREATION/ BY NOT OPENING THE ROAD TO THE PUBLIC EXISTING RECREATION IN THE AREA WOULD NOT BE AFFECTED, THAT AND THE ALASKA DEPT. OF FISH AND GAME WOULD NOT MAKE THE AREA A SPIKE FORK FIFTY AREA FOR MOOSE. WITCH WOULD BE A HARDSHIP ON THE PEOPLE THAT DEPEND ON MOOSE MEAT TO FEED THEIR FAMILIES

SAFETY/ BY NOT OPENING ACCESS TO THE PUBLIC WOULD SAVE LIVES AND HELP THE MINE RUN WITH OUT HAVING PEOPLE IN THE WAY B90-1

COMMERCIAL RECREATION/ ACCESS TO SHAW CREEK VALLEY WOULD NOT BE AFFECTED BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS AND WOULD KEEP UNWANTED LOOTERS OUT OF THE AREA

TRAPPING / BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS YOU WOULD NOT HAVE ANY PROBLEMS WITH TRAPPERS, PEOPLE WOULD NOT BE OUT THERE STEALING THE CATCH AND DESTROYING THEIR TRAP LINES

SUBSISTENCE/ IF THE MINE ROAD WAS OPENED YOU WOULD RUIN THE HUNTING FOR A LOT OF PEOPLE BECAUSE THE ALASKA DEPT. OF FISH AND GAME HAS ALL READY SAID THAT THEY WOULD MAKE THE AREA SPIKE FORK FIFTY INSTEAD OF ANY BULL WITCH WOULD MAKE A HARD SHIP ON PEOPLE THAT HUNT MOOSE TO FEED THERE FAMILIES

ORV USE OF THE SHAW CREEK VALLEY / WOULD NOT BE AFFECTED THEY COULD STILL GO WHERE THEY GO KNOW BY LEAVING THE MINE ROAD CLOSED TO THE PUBLIC, AND KEEP FROM HAVING A BIG SURGE OF PEOPLE IN THE AREA

B90

TIMBER / THE TIMBER IN THE AREA COULD BE LOGGED BY WORKING WITH THE MINE TO USE TO ROAD FOR ACCESS TO THE TIMBER AND ANY ROADS THE LOGGERS MAKE MUST BE RECLAIMED WHEN THEY ARE FINISHED LOGGING

MANAGEMENT OF THE WHOLE ROAD BY THE TECH -POGO INC./ THE MINE SHOULD MANAGE THE WHOLE ROAD AS FAR AS ACCESS FOR SAFETY SO THERE IS NO ONE GETTING RUN OVER AND IN THE WAY OF MINING TRUCKS AND EQUIPMENT, AND TO OF UNWANTED PEOPLE IN THE AREA WHERE WE WILL HAVE PEOPLE STEALING AND LOOTING PRIVATE PROPERTY IN THE AREA, AND WHEN THE MINE IS FINISHED IN THE AREA, THEY RECLAIM THE ROAD BACK TO THE START OF IT AT THE FOWLER DAIRY B90-1 CONT'D.

NAME: Kit R Walker
ADDRESS: P.O. Box 57209, North Pole.
PHONE : 488 5864
DATE: 30 April 03

"IN God we TRUST"

COMMENT RESPONSE:

B90-1 Thank you for your comment.

B91

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I was born and raised on the Fowler homestead and dairy farm. I own part of that land and have a cabin there. I am supportive of Pogo-Teck and their mining adventure. I am against them using the section line easement that would cut right through the Fowler property. I support the alternative management option, but I would not like to see the road be public. I would like the road to be a private industrial road. B91-1 B91-2 B91-3

YOUR NAME: Julenne Fowler-Walker

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B91-1 Thank you for your comment.

B91-2 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

B91-3 Thank you for your comment.

1

B92

RECEIVED

From: Jack Windsor, Box 21, Delta Jct AK 99737

I have lived in Delta Junction, Alaska and trapped the Shaw Cr. and Salsha drainages for 29 years, which include much time spent in Shaw Creek during all seasons of the year. I talked with you at the Delta meeting 4-29-03.

It is apparent that Teck-Pogo and the Alaska DNR are more interested in appeasing the Goodpaster River Landowners Assoc., AK. Dept. of Forestry, and Delta Junction area economic interests than protecting the environment in thier preference of access route to the Pogo Mine, ie Alternative 2 (Shaw Creek Hillside) over Alternative 3 (South Ridge Corridor)

More than 20 drainages (some streams with sensitive spawning runs) in the Shaw Cr. Valley must be crossed (6 must be bridged) using the Hillside Route, there are none on the South Ridge Route. Both bridge the Goodpaster River. With Alternative 2 the road and Powerline ROW (125') Traverse several miles of depressed wetlands disturbing nesting grounds and silting streams through runnoff in the Shaw Cr drainage, While the South Ridge Route traverses none. With Alternative 2, public access via the road itself and especially all-terrane vehicles and snowmachines using the Powerline ROW will result in an enormous disturbance of this sensitive and fragile ecosystem. The South Ridge Corridor allows very limited access to sensitive areas while providing a tremendous viewing opportunity of the area. B92-1

The kill numbers of breeding age bull moose will increase dramaticly in the upper shaw cr. drainage with the Hillside route (Alt 2) as this area is totally inaccessable currently except on foot, during the Sept. 1 - Sept. 15 hunting season. (38 miles of Power line right-of-way will change that) this will have B92-2

2

B92

RECEIVED

tragic consequences as these bulls travel to the heavily hunted Salsha and Goodpaster River drainages during the rut (late Sept.-Oct) and replace the bulls taken there by hunters. Moose calving areas in the Shaw Cr valley will also be affected by increased disturbance - Trucks, ATVs ect. B92-2 Cont'd.

Constructing a road into this area via Alternative 2 route and making it a public road as the Alaska DNR proposes is a death warrent for the pristene nature of this drainage and would turn it into the wildlife desert of other highway accessable land, ie, no animals sensitive to human disturbances would remain there such as wolves, wolverine, Grizzley bear, loons, swans ect

To keep this reasonably brief I am leaving a lot unsaid, and will try to write only enough to get the point across.

Conversations with Delta Area Fish and Game Biologists and reviewing of thier data on Shaw Cr. and Goodpaster drainages revealed many contradictions to the POGO DEIS. The data of Baker Engineering in many cases concerning fish & wildlife of Shaw Cr Area is not even close to the years of verified data collected by ADF&G. B92-3

Contemporary subsistance use areas of upper Shaw Creek (p 3-137 and figure 3.18.1) I know personaly and first hand to be false. B92-4

These points and others have made it hard to accept the DEIS at face value and lowered its credibility even to the point of exhibitting bias towards Alternative 2 over all other Alternatives. Vague unsubstantiated statements embellishing higher big game habitat disturbances and high visual impact to the cabin owners on the lower Goodpaster River with the South Ridge route are very questionable at best. B92-5

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The worst example of unresearched data being used is the TVSF management plan. Asuming the state Forestry will build a 23 mile road open to the public up shaw creek is ludicrous. Even Baker Engineering could only give it "a reasonable possibility rating. [page S-21 DEIS Executive Summary]. The ASF has not completed 2 miles of all season road with their budget limitations in the last 10 years in the Shaw Cr basin, yet the possibility of this road being built was the deciding factor for which alternative route would cause the least Environmental impact. Evidently the AFS ran a bluff and got a free road, at least their preferred route has been aproved by Pogo & DNR. * B72-6

Exagerating the difficulty of pockets of ice rich soil and a talus slope of less than ½ mile on the south Ridge Route while not mentioning the stable gravely ridgetop road construction conditions and minumizing the facts of no stream crossings or wet lands, nesting grounds ect; embellishing the windy drifting conditions on the Ridge top while claiming it won't be much of a maintainence factor on the Hillside Route, makes about as much sence as claiming the 4 or 5 miles with possible pockets of ice rich soils of the ridge route doesn't exist in 38 miles of road construction at the same elevation, in the same valley with 20+ marked drainages including 6 deep ravines with large streams. If 10 days a year of blowing snow, a few pockets of ice rich soil or talus slopes were insurmountable obsticles there would not be even one year-around road in Alaska. B72-7

The largest public objection to the South Ridge Route Alt-3 is coming from Goodpaster R. landowners, yet B72-8

the majority of them drive 2500 pound aluminum jet boats with noisy V8 engines. The few people with cabins on the upper river who might see a glimpse of a headlight or hear a truck at 5 or 10 miles distance drive by over 40 cabins with resultant wave-bank erosion and high noise levels and at all hours in summer light and in winter they travel with snowmachines with subsequent noise and headlights. Priorities seem questionable as per disturbance. B72-8 cont'd.

The Shaw Creek drainage is a small place as compared to the size of Alaska but with its salmon and greyling spawning grounds and virtually untouched wildlife and waterfowl habitat it does a great service to the surounding area. What a shame it would be to put a road through it when there is a better and more viable route with so much less impact available. B72-9

Jack E. Winslow
Box 21
Delta Jct. Ak. 99737
907-895-4815

* The pockets of harvestable timber in the TVSF in Shaw Cr have been logged for over 15 years and are currently being logged by winter ice road access on the South side, The timber on the Hillside Route area was also logged until this year when those sales were canceled. They were also accessable by ice road until this year. B72-6

COMMENT RESPONSE:

B92-1 The basis for selecting the Shaw Creek Hillside Road option is described in Section 5.2.3. Potential impacts to resources described in this document are believed to fairly represent those that would occur from construction and operation of each surface access option.

B92-2 Extending access into new areas can result in changes to game population levels. These changes, and management responses to them, would fall under the purview of the Alaska Board of Game and ADFG.

B92-3 The wildlife baseline descriptions in Section 3.14, and potential impacts to wildlife discussed in Section 4.9, have been reviewed by ADFG, and changes have been made in those sections to reflect its comments. Those comments, and responses to them, may be found in this Appendix E at G11-1 through G11-25.

B92-4 The contemporary subsistence use areas described in Section 3.18 have been reviewed by ADFG and are believed to fairly represent such use areas.

B92-5 Potential impacts to resources described in this document are believed to fairly represent those that would occur from construction and operation of each surface access option.

B92-6 All-season access to the Shaw Creek Valley state forest units has been a longstanding high priority for the DOF. Construction of all-season timber access would have been authorized through a timber sale contract by this time if it were not for the Pogo Mine project application process and the anticipated construction of a road through the state forest for mine access purposes.

The initial easement across private lands at the end of Shaw Creek Road for all-season access to Unit 8 of the TVSF was acquired by ADNR in the 1970s. The first timber sales in Unit 8, with all-season access provisions, went through the review process in 1995. The all-season access route has been through both public and agency review in the 5-Year Timber Schedule annually since 1990. The DOF has been ready to offer sales in Unit 8, including construction of all-season access, for several years. In anticipation of sales in Unit 8, the DOF has already purchased bridges, culverts, and road fabric. To coordinate access routes and minimize impacts, the DOF decided to delay its road construction plans until the Pogo Mine permitting process was completed.

Because operating timber harvesting equipment on steep slopes in winter conditions poses significant safety and operational concerns, the steep topography on the north side of Shaw Creek Flats necessitates all-season access to properly manage the timber resources. In addition to the safety and operational concerns with winter-only logging, the short three-month window for winter harvest activities makes it very difficult to sustain a viable timber industry. A year-round supply of timber provides a stronger economic base for harvesters and sawmills. Delta's forestry industry cannot survive on winter only access. The DOF needs all-season access to timber sale areas because most of the Delta forestry area is currently accessible only during winter months. Even the Gerstle River area, one of the few areas traditionally accessible year around, has become accessible only during winter months in recent years due to flooding.

B92-7 The basis for selecting the Shaw Creek Hillside Road option is described in Section 5.2.3, and the technical feasibility of each route option is described in Section 4.18.4. Potential impacts described in this document are believed to fairly represent those that would occur from construction and operation of each surface access option.

B92-8 Noise impacts for Alternative 3 (South Ridge route) may be found in Section 4.5.4. Noise impacts on residences along the Goodpaster River were considered to be low for this alternative, and were only a minor consideration in selection of the preferred access route.

B92-9 Thank you for your comment.

B93

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Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

After reviewing my comment I feel that not enough attention was given to the weight given the long-term Tanana Valley State Forest Management Plan in determining which route option is preferred.
This is only a plan and lists hundreds of miles of road options, including a road to the Keystone Cr drainage (aprox 3 to 5 mi) within the next 5 years. Considering the DOF's Track record for building roads this is very improbable. If they should acomplish this feat it would be at a rate of less than one mile per year on thier scedule and budget. B93-1
It would take a lot of imagination to forsee 23 mi of all-season road constructed by the DOF.
Please review paragraph 4, page S-21 of the DEIS Executive Summary with an open mind and analyze this logic and consider its consequences.

Thank You
Jack E. Windsor

YOUR NAME: Jack E Windsor - 907 895 4815

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B93-1 Please refer to the response for comment No. B92-6 above.

B94

Subject: Pogo dEIS
Date: Tue, 13 May 2003 14:26:56 -0800
From: Phil & Jean Wildfang <philjean@alaska.net>
To: Ed_fogels@dnr.state.ak.us

Thank you for the opportunity to comment on the Draft Environmental Impact Statement and proposed permit decisions for the Pogo Mine Project.

I have been peripherally involved in this issue for several years and my concerns essentially fall into two categories, preservation of the pristine character of the Goodpaster drainage system and road access.

Clean Water

It seems to me that any mining activity contemplated in Alaska must meet the highest standards possible in protecting and safeguarding our beautiful and bountiful streams and rivers. An activity deemed to be "in compliance" with clean water standards is simply not sufficient in most areas of the state, but especially in this watershed. Tailings disposal and waste discharges that have even the slightest chance of fouling the waters of this area should be prohibited. This calls for a vigorous exploration of all alternatives for dealing with such byproducts. This should include long term disposition safeguards. Pogo appears to be a rich mineral site that has tremendous economic potential for Tech-Pogo Inc. and no expense should be viewed by the permitting agency as being too great to safeguard our water and wetlands. B94-1

Road Access

I support Tech-Pogo in their desire to maintain a private access road and reject the State's proposal to open the first 23 miles to public use. Public use will only exacerbate the noise, dust and pollution impacting the residents of Shaw Creek and increase the possibility of accidents and spills. Additionally, public utilization will erode the wild character of the land and lead to ORV, ATV and other motorized uses serving to degrade and shred the habitat. Monitoring of such uses will likely be non existent or minimal at best and abuses will occur. B94-2
Development will quite likely occur along the road and state maintenance will be required to keep it open, further stretching limited Dept. of Transportation dollars. Lets strive to maintain what roads we have before opening new ones to the public.
Respectfully submitted,

Phil Wildfang
299 Hawk Rd.
Fairbanks, AK 99712

COMMENT RESPONSE:

B94-1 Thank you for your comment.

B94-2 Thank you for your comment.

(21)

B95

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I am in favor with the [illegible] articulated in the proposed draft of the Pogo Gold Mine draft environmental impact statement and adopting the [illegible] permit option that keeps [illegible] closed to public access during the working life of the mine. B95-1

I believe that this project should receive a permit to proceed with full mine development in accordance to stipulations as outlined in the permit applications. B95-2

Sue [illegible] near Ridgeway. B95-3

Shaw Creek hatch option - [illegible] B95-4

[illegible] 28 miles [illegible] (Gold [illegible])

YOUR NAME: [illegible]

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B95-1 Thank you for your comment.
B95-2 Thank you for your comment.
B95-3 Thank you for your comment.
B95-4 Thank you for your comment.

B96

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I Believe Pogo Teck is well AWARE of any problems they may encounter and have shown they will deal with them in a Responsible manner. B96-1

YOUR NAME: Robin Wolf

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B96-1 Thank you for your comment.

B97

I (PRINT YOUR NAME) LISA L. YANCEY FAVOR THE ALTERNATIVE MANAGEMENT OPTION FOR THE POGO/TECH INC. MINE ROAD

POGO PROJECT

GOODPASTER ACCESS / NO CHANGE TO EXISTING ACCESS TO THE GOOD PASTER RIVER

LIABILITY / THE POTENTIAL FOR LOOTING FROM PEOPLE WITH PRIVATE PROPERTY IF THE ROAD IS OPEN TO THE PUBLIC

EXISTING SHAW CREEK ROAD/ BY NOT OPENING THE ROAD TO THE PUBLIC THERE WILL NOT BE A LOT OF TRAFFIC ON THE SHAW CREEK ROAD OTHER THEN MINING EQUIPMENT COMING AND GOING TO THE MINE

RECREATION/ BY NOT OPENING THE ROAD TO THE PUBLIC EXISTING RECREATION IN THE AREA WOULD NOT BE AFFECTED, THAT AND THE ALASKA DEPT. OF FISH AND GAME WOULD NOT MAKE THE AREA A SPIKE FORK FIFTY AREA FOR MOOSE. WITCH WOULD BE A HARDSHIP ON THE PEOPLE THAT DEPEND ON MOOSE MEAT TO FEED THEIR FAMILIES

SAFETY/ BY NOT OPENING ACCESS TO THE PUBLIC WOULD SAVE LIVES AND HELP THE MINE RUN WITH OUT HAVING PEOPLE IN THE WAY B97-1

COMMERCIAL RECREATION/ ACCESS TO SHAW CREEK VALLEY WOULD NOT BE AFFECTED BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS AND WOULD KEEP UNWANTED LOOTERS OUT OF THE AREA

TRAPPING / BY KEEPING THE MINE ROAD CLOSED TO PUBLIC ACCESS YOU WOULD NOT HAVE ANY PROBLEMS WITH TRAPPERS, PEOPLE WOULD NOT BE OUT THERE STEALING THE CATCH AND DESTROYING THEIR TRAP LINES

SUBSISTENCE/ IF THE MINE ROAD WAS OPENED YOU WOULD RUIN THE HUNTING FOR A LOT OF PEOPLE BECAUSE THE ALASKA DEPT. OF FISH AND GAME HAS ALL READY SAID THAT THEY WOULD MAKE THE AREA SPIKE FORK FIFTY INSTEAD OF ANY BULL WITCH WOULD MAKE A HARD SHIP ON PEOPLE THAT HUNT MOOSE TO FEED THERE FAMILIES

ORV USE OF THE SHAW CREEK VALLEY / WOULD NOT BE AFFECTED THEY COULD STILL GO WHERE THEY GO KNOW BY LEAVING THE MINE ROAD CLOSED TO THE PUBLIC, AND KEEP FROM HAVING A BIG SURGE OF PEOPLE IN THE AREA

B97

TIMBER / THE TIMBER IN THE AREA COULD BE LOGGED BY WORKING WITH THE MINE TO USE TO ROAD FOR ACCESS TO THE TIMBER AND ANY ROADS THE LOGGERS MAKE MUST BE RECLAIMED WHEN THEY ARE FINISHED LOGGING

MANAGEMENT OF THE WHOLE ROAD BY THE TECH -POGO INC./ THE MINE SHOULD MANAGE THE WHOLE ROAD AS FAR AS ACCESS FOR SAFETY SO THERE IS NO ONE GETTING RUN OVER AND IN THE WAY OF MINING TRUCKS AND EQUIPMENT, AND TO OF UNWANTED PEOPLE IN THE AREA WHERE WE WILL HAVE PEOPLE STEALING AND LOOTING PRIVATE PROPERTY IN THE AREA, AND WHEN THE MINE IS FINISHED IN THE AREA, THEY RECLAIM THE ROAD BACK TO THE START OF IT AT THE FOWLER DAIRY

B97-1 cont'd.

NAME: LISA L. YANCEY
ADDRESS: ~~PO~~ 927 Faultline St. ~~#5~~ Fairbanks, AK 99711
PHONE : 488-9081
DATE: 04/30/03

COMMENT RESPONSE:

B97-1 Thank you for your comment.

B98

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

I Am in Favor of Teck/Pogo Mine!

B98-1

YOUR NAME: David S. Zimmerman 4/29/03

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

B98-1 Thank you for your comment.

B99

Subject: Pogo Gold Mine Project
Date: Mon, 5 May 2003 14:44:08 -0800
From: "Zook, Mike" <Mike.Zook@asrcenergy.com>
To: <ed_fogels@dnr.state.ak.us>

Dear Sir;

I would like to make comments on the DEIS for the above referenced project. With the declining oil and fishing industries in Alaska, we must ensure the continued prosperity of the region with other enterprises. If we can develop these new industries, and still reasonably meet our environmental agenda, then we must do so.

I endorse the Preferred Alternative identified in the Draft Environmental Impact Statement, with the provision that the Alaska Department of Natural Resources adopts the Alternative Management Option for management of the Shaw Creek Hillside access road.

The Alternative Management Option for the Shaw Creek Hillside Road will result in increased safety for the public, reduced short term impacts to subsistence, trapping and commercial recreation, reduced short-term impacts to wetlands from ORV use and increased revenue to the State from right-of-way fees, material sales and timber sale receipts. B99-1

The EPA and the Alaska Department of Natural Resources should provide timely resolution of the permitting process so that the Pogo Gold Mining Project can move forward.

I endorse the draft NPDES permit and the draft Alaska Department of Environmental Conservation waste disposal permit. B99-2

The Pogo project will be of major benefit to Interior Alaska as it will boost economic activity at a time when the state is approaching an economic slow down.

The new mine will result in increased revenues to the state, as well as new opportunities for Alaska businesses and residents. Pogo will help sustain a healthy and growing mining industry in Alaska. B99-3

Pending receipt of necessary permits, Teck-Pogo plans to invest $250 million to begin construction on the underground mine. The Pogo Gold Mine will generate 500 new jobs during the first two years of construction and 300 permanent year-round jobs during its operational phase.

Teck-Pogo has designed an advanced operation that will minimize the project's footprint on the environment. The project has been designed to meet Alaska water quality standards and not degrade the water quality of the Goodpaster River. B99-4

I wholeheartedly support the development of the Pogo Gold Mine, and feel that we should find a way to meet our environmental goals while allowing this important project to go forward.

Thank you,

Pogo Gold Mine Project

B99

Robert M. Zook

3721 Perenosa Circle

Anchorage, AK 99515

COMMENT RESPONSE:

B99-1 Thank you for your comment.
B99-2 Thank you for your comment.
B99-3 Thank you for your comment.
B99-4 Thank you for your comment.

Appendix E.C

Response to Comments on Draft EIS

Tribal Written Comments

Tribal Consultation – Formal Comment from Dot Lake Village Council

C1

Please Comment on the

Pogo Gold Mine Draft Environmental Impact Statement and Any of the Draft Permit Decisions contained in the DEIS document

For the record Dot Lake Village Council opposes leaving any part of the road intact after The mine closes. The reason for this is the effect it would have on the wild life. When ever you put a road in to the back country you disrupt the natural cycling of wild life. C1-1

Charles P Miller Sr
E-Mail akmadindian@Yahoo.com

YOUR NAME: Charles P Miller Sr.

Please place your comments in the box at tonight's Draft EIS Open House, or send them no later than **May 13, 2003** to:

Hanh Gold
Pogo EIS Project Manager
US Environmental Protection Agency
1200 Sixth Avenue (M/S-130)
Seattle, WA 98101
Or Gold.Hanh@epa.gov

COMMENT RESPONSE:

C1-1 Thank you for your comment.

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C2

Native Village of Tanacross
Tanacross Village Council
PO Box 76009
Tanacross, Alaska 99776-6009

President
Jerry Isaac

Vice President
Roy G. Denny

Members:
Alfred Jonathan
Keith Jonathan
Robert F. Paul
Roge Isaac
Ray Sanford, Sr.

April 30, 2003

Hanh Gold
NEPA Compliance Coordinator
US Environmental Protection Agency
1200 sixth Avenue, OW-130
Seattle, WA 98101

Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

Ref: Draft Environmental Impact Statement for Pogo Mine.

Dear Mr. Gold and Mr. Fogels,

The following comments reflect those of the Native Village of Tanacross:

1. The authorization for the Millsite lease indicates the road will not be reclaimed after the life of the project. While this isn't really a problem, all of the agency comments and agency justification is based on the road being reclaimed. The authorizations and justifications are okay, but what is actually going to be the final solution. C2-1
2. Throughout the permits it indicates there isn't fish habitat, so the state can justify the mixing zone and dissolved oxygen level 2.0 mg/l. The National Marine Fisheries Service, Essesential Fish Habitat Assessment indicated 70% of the Chinook spawn below the project area, so does that mean 30% spawn in the project area. Also there is a request for toxicity testing to collect 10 juvenile Chinook from the downstream end of the project, so further assurance that Chinook salmon spawn in the project area. So is the permit justification correct in this area. C2-2 C2-3
3. There is not Tribal/public participation process in Best Management Practices plan approval or implementation. C2-4

Attached is a specific list of items which was presented to personnel in attendance at the Public Meeting in Fairbanks on April 30, 2003 If you have any questions or need clarification, please do not hesitate to contact me.

Sincerely,

Tricia Waggoner

Tricia Waggoner
Environmental Manager

907.883.5024 Office / 907.883.4497 Fax
E-mail:
jerry_isaac@hotmail.com
director@alaskanativeresources.com

Comments on Pogo Mine Permits

NPDES Permit AK-005334-1

- Page 5 of 30 #8 - the MDL is less than the average monthly limit. So how do you get results which are less than the MDL to average out? C2-5
- #9 – if less than the MDL than can use 0 in reporting on the average. This can skew the results C2-6
- Page 6 of 30 #4 0 same as 9 above
- Page 7 #4 – The DO for fish is 5 while the DO limit in the permit is 2. What happens when juvenile fish are in the area. C2-7
- #5 – the DMR reporting level is 50 x higher than the effluent limit. Can this be reconciled C2-8
- Page 13 #3 – there is an out for POGO to request different MDL's. If requested would this just be approved by EPA and ADEC without public input. C2-9
- Page 14 #2 – Is EPA region 10 doing the QAPP approval? C2-10
- #4 – does EPA and ADEC require approval before modifications to the QAPP
- Best Management Practices – The implementation plan is not required until 180 days after the NPDES permit is approved. The plant manager and the BMP committee annually review the BMP. Is there any opportunity for consultation on the BMP as this will direct what activities take place? C2-11
- What is the process for the Tribe to review DMR's if they choose to. C2-12

NPDES Fact Sheet

- 5 out of 100 years the dam will not maintain C2-13
- Page 7 – "ADEC has authorized a mixing zone at this location because this location does not support salmon spawning" while in the Essential Fish Habitat documentation, Appendix F.3, A.2-2 – "Chinook salmon spawn, rear and overwinter in a 90-mile reach of river encompassing the project area. Approximately 70 percent…lies below the project site." So does the project area support 30% of the Chinook salmon spawning or not. C2-14

ADEC Certificate of Reasonable Assurance

- Authorized Mixing Zone of 10:1 dilution for Fecal Coliform, Nitrates, pH, Dissolved Oxygen and Chlorine from Outfall 002. C2-15
- Appendix C – There isn't a requirement to monitor for thallium. Has thallium been considered an issue? C2-16

Section 404 Authorization

- No comments

907.883.5024 Office / 907.883.4497 Fax
E-mail:
jerry_isaac@hotmail.com
director@alaskanativeresources.com

ADNR Authorizations

- In the **Millsite Lease** Proposes Decision on page 3 – "…DNR is proposing that the first half of road be open to the public and not be reclaimed and the second half of the road be closed to the public and not be reclaimed." Much of the decision documentation looks at the road being reclaimed. Actual instances noted later. C2-17
- What is the Soil Absorption System (SAS) C2-18
- **Road Right of Way** – C2-19
  - Who is responsible to maintain the first half of the road for public purposes.
  - Page 8 – "because a large portion of the access road would be reclaimed after the life of the mine, the impacts on traditional uses, subsistence used, land uses would be minimal…" not consistent with the Millsite Lease. C2-20
  - Page 8 – If the road causes increased use of wildlife and fish resources in the area open to public access than the public will be restricted from utilizing these resources. The area will then be managed for people rather than for fish and wildlife. C2-21
  - Page 11 – "There would be no turnouts." If the road is going to be open to the public with commercial vehicle traffic on the first portion then turnouts should be constructed for safety reasons. C2-22
  - Page 12 - US Coast Guard Approval for the bridge across the Goodpaster River. What is the status of the Coast Approval. C2-23
  - Page 12 - Are there any potential impacts from the temporary camps or airstrips? C2-24
  - Page 13 - "The winter trail will require some clearing and limited re-grading." How much work is anticipated, and will this be reclaimed or left after the clearing and re-grading? C2-25
  - Page 14 – There isn't a decision on the Bus Terminal/Maintenance facility location yet. C2-26
  - Page 15 – "Goodpaster River valley, which has been identified as a sensitive area by the Tanana Basin Area Plan due to its unique character, high fish and wildlife values and high recreational use." C2-27
  - Special Stipulations #11 – Culverts should conform to current technological standards for fish passage (i.e. grayling). There are many instances throughout interior Alaska where culverts are installed and all fish passage is stopped because of culvert design and placement. Monitoring for fish passage on these culverts should be a part of the permit. C2-28
  - #32 Signage – "…the public should monitor the appropriate CB channel while traveling the road,…" Most vehicles do not carry CB radios. How to ensure communication and safety for the public on the open portion of the road. C2-29
  - Attachment 7 – Both options for the 1st half of the road indicate not reclaimed which is consistent with the Millsite Lease. C2-30
- **Power Line Right of Way**
  - The power line goes up an entire tributary of Shaw Creek. Will the clearing for this power line have any effect on the resources of the watershed. C2-31
- **Material Sale**
  - Material Site 2 is next to the Tanana River and will be excavated to a depth of 25' and encompass 22.0 acres. C2-32
- **ADEC Waste Disposal Permit**
  - Teck Monitoring Plan – Table 4.2-1 – Explain exactly when the Facility Safety Inspection will be conducted. The table says annually with a footnote of "during years when Facility Safety Review is carried out." Which is every three years starting at year three? C2-33

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- RTP Dam will be visually inspected at least once per week. There should be a stipulation of more inspections during heavy rainfall. C2-34
- Table 4.6-6 – no mention of thallium in the parameters. Is thallium a concern. C2-35

Statutory and Executive Order Compliance Documentation

- USFWS PDEIS review is based on reclamation of the road. C2-36
- "…we support the proposed reclamation of the access road and power line." C2-37
- EFH Assessment indicated the project area is Chinook spawning and rearing habitat for about 30% of the Chinook population. While the permits indicate that no fish spawn or rear in the project area. C2-38

COMMENT RESPONSE:

C2-1 The text of the proposed millsite lease as referenced in the comment is in error. Appendix D.3 (Proposed ROW Decision) correctly states that "DNR anticipates that the second portion of the road would be reclaimed after the life of the Pogo Mine."

C2-2 The reference to the absence of fish spawning habitat refers only to the vicinity of the proposed mixing zone below the water discharge point approximately 1,500 ft. downstream of the construction camp (Figure 2.3-1a). There is fish spawning habitat in the Goodpaster River both above and below this site.

C2-3 See response to comment No. C2-2 immediately above.

C2-4 Specific stipulations for each of the state permits were included in the preliminary decisions contained in the appendices of the draft EIS, and they were distributed to the Tribes for comment.

C2-5 This issue will be explained in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

C2-6 This issue will be explained in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

C2-7 This issue will be explained in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

C2-8 This issue will be explained in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

C2-9 This issue will be explained in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

C2-10 This issue will be addressed in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

C2-11 This issue will be addressed in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

C2-12 This issue will be addressed in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

C2-13 Comment not understood.

C2-14 The reference to the absence of fish spawning habitat refers only to the vicinity of the proposed mixing zone below the water discharge point approximately 1,500 ft. downstream of the construction camp (Figure 2.3-1a). There is fish spawning habitat in the Goodpaster River both above and below this site.

C2-15 Correct.

C2-16 This issue will be addressed in ADEC's response to comments on the draft Certificate of Reasonable Assurance, and in EPA's response to comments with the final NPDES permit, both of which will be issued after publication of this FEIS.

C2-17 The text of the proposed millsite lease as cited in the comment is in error. Appendix D.3 (Proposed ROW Decision) correctly states that "DNR anticipates that the second portion of the road would be reclaimed after the life of the Pogo Mine."

C2-18 The reader is referred to Section 2.3.10 (Water Discharge) for a description of the soil absorption system.

C2-19 The Applicant would be responsible for maintenance of any segment of the road not open to public use. If a segment of the road were open to public use during mine operations, the State and the Applicant would develop a road maintenance agreement that would define the roles of both entities.

C2-20 See response to comment No. C2-17 above.

C2-21 If increased public access were to affect fish and game populations, public use of these resources could be restricted through regulations adopted by the Board of Fish and the Board of Game.

C2-22 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS. If the first 23 miles of road were to be open for public use, then appropriate measures would be taken to responsibly accommodate this use.

C2-23 The Coast Guard has reviewed and commented on the draft Pogo Mine EIS and requested that additional information be included in the final EIS to insure that its NEPA responsibilities are met. Following publication of

the final EIS, the Coast Guard will adjudicate the Applicant's application for approval of its bridge design.

C2-24 Potential impacts from the mine access road temporary constructing camps and airstrips are discussed on an individual resource basis in Chapter 4 of the document.

C2-25 The amount of grading and clearing would be minor, and the Applicant would be required to reclaim any disturbed areas by stabilizing the ground and revegetating with appropriate plant species. ADNR has issued permits to the Applicant for use of this trail in the past, and all such activities and disturbances have been properly reclaimed.

C2-26 ADNR has received public and agency comments on the proposed location of the bus terminal/maintenance facility during the draft EIS comment period and will consider these comments for its final decision for issuance of the competitive land lease, which will be issued after publication of this FEIS.

C2-27 Correct.

C2-28 All culverts what would pass fish-bearing waters would require a Title 16 fish passage authorization, and would be inspected and monitored following construction.

C2-29 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS. If the first 23 miles of road were to be open for public use, then appropriate measures would be taken to ensure safety and communication on the road.

C2-30 Correct.

C2-31 As a result of comments received on the draft EIS, the Applicant has decided to reroute the power line corridor out of the Sutton Creek drainage and follow the road alignment across the Shaw Creek and Goodpaster divide.

C2-32 Correct.

C2-33 This language will be clarified in ADEC's final decision for issuance of the Waste Disposal Permit, which will occur after publication of this FEIS.

C2-34 This suggestion will be considered in ADEC's final decision for issuance of the Waste Disposal Permit, which will occur after publication of this FEIS.

C2-35 This issue will be addressed in ADEC's response to comments on the draft Certificate of Reasonable Assurance, and in EPA's response to comments with the final NPDES permit, both of which will be issued after publication of this FEIS.

C2-36 The USFWS preliminary draft EIS review comments refer to the Applicant's Proposed Project, which does propose to reclaim the entire mine access road. The draft EIS analyzes that proposed project as well as alternatives, including the Preferred Alternative that would only reclaim the road between Gilles Creek and the mine site.

C2-37 See response to comment No. C2-37 immediately above.

C2-38 The reference to the absence of fish spawning habitat refers only to the vicinity of the proposed mixing zone below the water discharge point approximately 1,500 ft. downstream of the construction camp (Figure 2.3-1a). There is fish spawning habitat in the Goodpaster River both above and below this site.

Appendix E.D

Response to Comments on Draft EIS

Non-Governmental Organization Comments

MAY-13-03 TUE 03:08 PM FAX NO. P. 01

D1

Alaska Forest Association, Inc.

111 STEDMAN STREET, SUITE 200
KETCHIKAN, ALASKA 99901-6599
Phone 907-225-6114
FAX 907-225-5920
Web Site www.akforest.org

May 13, 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

By FAX: 206-553-0165

RE: Teck-Pogo, Inc.'s Gold Mine Project

Dear Mr. Gold:

We support the Pogo Gold Mine Project. This development activity will help the economy of the State as well as the area around the mine. The project should be permitted in a manner that will reasonably protect the local environment; just like is being planned for the timber sale activities in the vicinity. The access road should be built as an industrial road to accommodate the mining activities as well as potential logging activities. D1-1

Please permit the project without delay. The EIS appears to be more detailed than is necessary to analyze the potential impacts. Please work to reduce the time and cost of these EIS documents in the future. D1-2

Thank you for the opportunity to comment.

Sincerely,

Owen J. Graham
Executive Director

COMMENT RESPONSE:

D1-1 Thank you for your comment.

D1-2 Thank you for your comment.

D2

ALASKA MINERS ASSOCIATION, INC.

3305 Arctic Blvd., #202, Anchorage, Alaska 99503 • (907) 563-9229 • FAX: (907) 563-9225 • www.alaskaminers.org

May 10, 2003

Ms. Hanh Gold
NEPA Compliance Coordinator
EPA
1200 Sixth Avenue, OW-130
Seattle, WA 98101

FAX 206-553-0165

RECEIVED
MAY 15 2003
U.S. EPA REGION 10
OFFICE OF WATER

RE: Pogo Gold Project DEIS Comments

Dear Ms. Gold,

The Alaska Miners Association (AMA) is a non profit membership organization established in 1939 to represent the mining industry. The AMA is composed of individual prospectors, geologists and engineers, vendors, small family mines, junior mining companies, and major mining companies. Our members explore for and produce gold, silver, platinum, diamonds, lead, zinc, copper, coal, limestone, sand and gravel, crushed stone, armor rock, etc. Our members live and operate in all parts of Alaska, including the Delta Junction area where the project is located.

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Pogo Gold project. I would like to begin by complementing the agencies involved in this DEIS for their efforts in three specific areas:

First, for developing and including the Findings & Draft Decisions for several of the major permits that will be required for the mine in this combined comment opportunity. I believe that this approach provides both an efficient permitting process and a clearer public process. It is often not feasible to have several permits ready at the same point in time but when it can be done I believe it is beneficial. Having several of the permits ready at the same time allows the general public to see more of a project as a complete picture. Local communities typically do not understand the legal notice and comment requirements, they just want to see a project move forward. When there are many different comment periods for different permits their eyes glaze over and they become confused and cynical about the process which has often taken far longer than they had hoped. D2-1

Second, I wish to complement the agencies on the innovative approach being used for management of water discharges. This is a very workable and important approach when there are extreme restrictions on the use of standard mixing zones that can be developed by the state. D2-2

Third, I wish to complement the agencies on the thoroughness of this DEIS. As I have reviewed the material I have not identified any area that was not adequately addressed in the documents. If any thing, it appears that the detail is more than should have been necessary when considering the very minor level of environmental risk involved in most aspects of the project. D2-3

D2

Regarding the several permits included in this comment - we support issuance of each of these permits as written:

- Preliminary Finding and Decision for material sale.
- Preliminary Finding and Decision for long-term surface lease for staging area.
- Proposed Decision to issue a road ROW for access road from the Shaw Creek Road to the Goodpaster River.
- Proposed Decision to issue a power line ROW.
- Proposed Decision to issue a millsite lease.

D2-4

The one area remaining to be settled is whether or not the Shaw Creek Road will be closed to the public for its entire length or will the western portion be open to the general public. We believe it is essential that the entire road to be closed to non-commercial uses and to the general public during the life of the mine.

We feel that the safety and traffic congestion issues must be the primary concern and the result is that the road should be closed to non-commercial uses. The thought of private motorhomes on that road meeting fuel trucks carrying 10,000 gallons each is not a pretty picture. It is possible that no problems would result but the risk is simply too great. The safety and environmental liabilities and potential problems of an accident are simply too great. It is important that the road be available to other industrial uses and we support that approach.

D2-5

Thank you for the opportunity to comment on this DEIS. We urge that it become Final at the earliest feasible date so construction can begin on this exciting project.

Sincerely,

Steven C. Borell, P.E.
Executive Director

cc: Ed Fogles, State of Alaska DNR

COMMENT RESPONSE:

D2-1 Thank you for your comment.
D2-2 Thank you for your comment.
D2-3 Thank you for your comment.
D2-4 Thank you for your comment.
D2-5 Thank you for your comment.

MAY-29-2003 THU 10:03 AM SURFACE MINING FAX NO. 1 907 269 8930 P. 02/02

D3

Ed

Alaska Outdoor Council
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DEPARTMENT OF
NATURAL RESOURCES
DIV. OF MINING, LAND & WATER

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Executive Director
Jesse Vander-Zanden
Fairbanks

Bob Loescher
Director, Division of Mining and Water
Department of Natural Resources
400 Willoughby Avenue
Juneau, AK 99801-1724

MAY 21 2003
DIRECTOR'S OFFICE
ANCHORAGE

Dear Director Loescher,

On behalf of the Board of Directors, please accept our comments regarding public access options for permitting and approval of construction of the Pogo Mine on state lands.

It is our understanding there are two public access options for comment: one that would allow access to approximately 23 mile after the life of the mine and the other option would allow access to 23 mile during operation of the mine. None of the options at this point appear to allow access to the remaining portion of the road that would eventually extend 50+ miles to the Goodpasture River.

As you can well imagine, having access to the Goodpasture River and the remaining portion of the road past 23 mile is strongly supported by many of our members. We recognize that this is currently not a formal option of the permitting and public comment process, however, we also recognize that this issue could be revisited in a separate public comment process during operation of the mine should the opportunity for access during this process have passed by. If possible, we would encourage your approval of public access to the Goodpasture River during this public process.

We understand the concerns and reasons for limiting public access such as safety standards, potential traffic conflicts, and the fact that the road is being built entirely from private funds. We also understand however that the road is being built *across* public lands, that previous precedent on privately funded roads across public lands favors public access, and that reclamation of the road would be an additional expense to the Pogo Mine and thereby possibly reduce the likelihood of other private-public joint ventures that seek to promote responsible resource development.

D3-1

Alaskans of all ages and genders greatly enjoy the outdoors and the opportunity for reasonable access to it – this is one of those opportunities and we encourage your pursuance of it.

Thank you for the opportunity to comment and we look forward to your response.

Sincerely,

for Mike Kramer

Mike Kramer
Chairman, Access Committee

CC: Tom Irwin, Commissioner, DNR
The Honorable Frank Murkowksi, Governor, State of Alaska
Karl Hanneman, Alaska Regional Manager, Teck-Pogo Inc.

"Protecting your hunting, fishing, trapping, and outdoor heritage since 1953."

Received May-29-03 10:00am From-1 907 269 8930 To-YUKON PACIFIC CORP Page 02

COMMENT RESPONSE:

D3-1 Thank you for your comment.

D4

CENTER for SCIENCE in PUBLIC PARTICIPATION
224 North Church Avenue, Bozeman, MT 59715
Phone (406) 585-9854 / Fax (406) 585-2260 / web: www.csp2.org / e-mail: csp2@csp2.org
"Technical Support for Grassroots Public Interest Groups"

May 13, 2003

Hanh Gold
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Fm: David M. Chambers, Center for Science in Public Participation

RE: COMMENTS OF THE POGO MINE PROJECT DRAFT EIS

POGO TECHNICAL ISSUES

Section 2.3.8 – Development Rock Storage

There are no data from the acid-base accounting, column leaching tests and humidity cell tests presented in the DEIS. D4-1

Recommendation: This is a significant omission in the DEIS.

In particular, a distinction between waste rock that is potentially-contaminating, and that which is non-contaminating, is drawn at 600 ppm arsenic or 0.5% sulfur. This information is not presented in the body of the EIS, but appears only in the Drat Monitoring Plan attached to the Solid Waste Permit in Appendix E. Potential contamination, especially from arsenic, is of concern. The data utilized to justify the selection of these cutoff limits should be presented in the EIS, or appendices. D4-2

Recommendation: A summary of the data that lead to the development of these waste segregation criteria should be given either in Section 2.3.8 where segregation of mineralized and non-mineralized rock is discussed, and/or in Section 4.3 – Water Quality, where there is a discussion of Development Rock Disposal and the resultant water quality.

Recommendation: And, at a minimum graphs from the leaching and humidity cell tests, and the acid-base accounting data should be included as an appendix to the EIS. D4-3

Section 3.5.4 – Site Meteorology

The minesite is fairly warm and dry during the summer months. Has the net evaporation for the summer months been measured as part of the meteorological monitoring? D4-4

Recommendation: The net evaporation (or net precipitation) for the site should be discussed in this section.

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Page #2

Section 4.1 – Surface Water Hydrology/Tailings Disposal

The Recycle (water) Tailings Pond (RTP) collects water from snowmelt, stormwater runoff from the mill, camp and associated roads, and seepage from the dry-stack tailings. The RTP is designed to provide storage for snowmelt runoff and the 100-year, 24-hour-intensity storm.

In the discussion of potential impacts in this Section it is stated:

> "Given the 11-year projected project life, there is approximately a one-in-four probability that a storm discharge would occur from the RTP to Liese Creek during the life of the mine." (DEIS, p. 4-8) D4-5

There are 8 contaminants that could exceed Alaska water quality standards if such a discharge occurs. (Table 4.3-6, p. 4-29) This suggests the design criteria of a one-in-four probably of a discharge during the mine life pose a higher risk of contamination from overflow of the RTP during a large storm than should be expected. It is typical to use design criteria for tailings ponds that will hold contaminated waste to be engineered for snowmelt plus the maximum flood event.

Recommendation: In this case, it would be appropriate to increase the freeboard of the RTP dam so that at a minimum, any discharge would be diluted by the inflow of stormwater to meet the applicable water quality standards before the storm discharge would occur. If these criteria cannot be met by stormwater dilution, then the dam should be designed to hold snowmelt plus the maximum flood event.

Section 4.3 – Water Quality/Surface Dry Stack Water Quality After Mine Closure

a. Underground placement of mineralized waste rock

Table 4.3-4 lists the projected water quality of the seepage and runoff from the dry stack. Arsenic levels are predicted to be 1,600 / 5,100 ug/L (mean / reasonable worst case). These are very high levels of arsenic.

237,000 tons of mineralized waste rock is to be permanently stored in the tailings facility. (Table 2.1, Development Rock Quantities, Pogo Plan of Operations, November 2002 Supplement, p. 2-1) It is not clear from the information presented in the DEIS how much of this arsenic load is due to the mineralized waste rock. There is also additional long term risk for contribution of arsenic and other metals from this mineralized waste due to localized acid drainage in the stack.

It is planned that 411,000 tons on non-mineralized waste rock will be stored underground during mine production (Table 2.1, Pogo Plan of Operations, November 2002 Supplement), so there is room underground to store the mineralized waste presently designated for surface disposal in the dry stack. If the mineralized waste presently designated for surface storage could be placed underground in place of the non-mineralized waste rock, the potential for long term contamination from this waste could be lessened. It is possible that the costs of double-handling this waste could be justified by the lower risk of long-term contamination in the tailings facility. D4-6

Recommendation: A careful look at the potential environmental benefits, and the potential costs of dealing with higher than predicted levels of contamination from this waste – versus the costs double handling this waste as backfill – should be evaluated in the DEIS.

b. Possible error in Table 4.3-7

The mean for SO_4 is listed in Table 4.3-7 as 634 mg/L, while the reasonable worst case untreated is only 386 mg/L. D4-7

It does not make sense that the mean is higher than the reasonable worst case value.

May 13, 2003
Page #3

c. Clarification of Iron discharge value in Table 4.3-14

The values for the discharge of iron (total) from the Off-River Treatment Works to the Goodpaster River exceed the values for the discharge of iron (dissolved) from the water treatment plant to the Off-River Treatment Works. Possible explanations for this are: (1) background river water contains more iron than the discharge from the treatment plant; (2) the level of total iron in the discharge from the treatment plant is significantly higher than the dissolved level; or, (3) there is an error in the calculation of the one of the values. D4-8

Recommendation: Since iron is the only constituent in the table that shows an increase from the Water Treatment Plant to the River discharge, a good explanation of this situation needs to be given in the DEIS.

Section 4.4 – Air Quality

The Pogo Mine is located in a relatively dry area. During the summer, dry tailings placed in tailings area will eventually dry out if not covered, and could create a dust problem. The living quarters for the miners are approximately 3000 feet from the tailings area. D4-9

There is no discussion in the DEIS of the possibility of dust from the tailings, or of how this will be addressed (watering, etc.) if this becomes a problem.

Section 4.5 – Noise

It appears that the living quarters for the miners will be approximately 2000 feet from the mill. The confined Liese Creek Valley could channel this noise up and down the length of the valley. D4-10

There is no analysis in the DEIS of the potential impacts of noise on mine worker living area.

Section 5.2 – Identification of the Environmentally Preferable and Preferred Alternatives

a. Disturbance due to expanded gravel pits

Table 5.3-1 lists "Expanded existing gravel pits and develop new pits" as the environmentally preferable and preferred alternative over "Crush nonmineralized development rock".

Further justification for this decision is given in the Executive Summary:

> "Summary analysis of the two sub-options indicated that overall impacts to wetlands and wildlife would be low, with some positive benefits from newly created ponds in the gravel pits." (Section S.12.1, p. S-17)

Conflicting information presented in the DEIS that raises questions about this conclusion.

From "Gravel Source" – Section 4.9.2, p.4-98: D4-11

> "Expanding existing gravel pits and developing new ones, rather than crushing development rock, would cause surface disturbance to an additional approximately 72 acres on the Goodpaster Valley floor. Approximately 4 acres of such disturbance adjacent to the airstrip would be in Conservation Priority Index high-value habitats. Therefore, mining gravel would have substantially more overall habitat impact than would crushing development rock for gravel."

This statement, which identifies "…substantially more overall habitat impact than would crushing development rock for gravel…" does not support the conclusion in the Executive Summary which states "…overall impacts to wetlands and wildlife would be low…"

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Page #4

Recommendation: Given this information, and supported by general logic that avoiding disturbance of an additional 72 acres would be environmentally preferable if crushed rock could be used in the place of mined gravel, it would seem that the environmentally preferable and preferred alternative should be the "Crush nonmineralized development rock" over the "Expanded existing gravel pits and develop new pits". D4-11 Con't'D.

However, the DEIS also states that "Underground development operations could not produce sufficient rock in time meet the critical path for construction…" (DEIS Table 5.1-1, p. 5-7) While this assertion is not supported by the waste rock production data presented in Table 2.1, Development Rock Quantities, Pogo Plan of Operations, November 2002 Supplement, p. 2-1, which accounts for 347,000 tons of nonmineralized rock produced in exploration and pre-production that is programmed for surface storage, as opposed to 140,000 yd^3 of gravel required for the mine area (DEIS Table 5.1-1, p. 5-7) – the quality of the crushed rock may not be of sufficient quality to meet the various construction needs (e.g. for concrete aggregate and road surfacing), although these tests have apparently not been conducted. D4-12

Recommendation: On the assumption that the gravel would be needed to meet construction specifications, it would still seem that avoiding disturbance of the 4 acres of "Conservation Priority Index high-value habitats" next to the airport would not pose a severe hardship to the timing or cost of the mining project, and might provide some significant habitat benefit.

b. Choice if "Lined" versus "Unlined" as the environmentally preferred alternative

Table 5.3-2 lists "Unlined dry stack" and "Unlined RTP" as the environmentally preferable and preferred alternative over "Lined dry stack" and "Lined RTP".

In Section 4.2.3 – Options Not Related to Surface Access/Tailings Facility Liner, p. 4-18, it is stated that:

> "A lined RTP likely would reduce seepage loss from the facility."

This conclusion makes sense.

Regardless of the results of the modelling for seepage from the tailings themselves, and for seepage from a lined versus an un-lined tailings facility, logic strongly suggests that a lined facility would most likely be more protective of the environment than an un-lined facility. D4-13

Again, it is understandable why the un-lined tailings facility was chosen over the lined facility, a choice that is weighed by cost considerations.

Recommendation: From a purely environmental standpoint, it is difficult to understand why the "Lined dry stack" and "Lined RTP" are not the environmentally preferable and preferred alternatives in the DEIS over "Unlined dry stack" and "Unlined RTP". The lined options should be the environmentally preferable and preferred alternatives.

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Page #5

POGO DRAFT EPA NPDES COMMENTS

1. Monitoring for Arsenic

There is no proposed permit standard for arsenic.

Arsenic is the primary contaminant in the orebody.

For the calculation of the Reasonable Potential Determination for arsenic, an Effluent Concentration of 1.54 ug/L was used. (Fact Sheet, Draft Permit AK-005334-1, Table C-3, p. C-5)

The arsenic in the ore and waste, which is predicted to manifest itself in the water in the RTP – 1,136 ug/L (95% annual maximum dissolved, DEIS Table 4.3-5), and 5,360 ug/L in the mine seepage (DEIS Table 4.3-1), will be reduced in the Water Treatment Plant to 30 ug/L (Water Management Plan Supplement, June 2002, Table 2.4, p. 2-18).

The input arsenic level to the Water Treatment Plant is 5,360 ug/L (95% annual maximum, Water Management Plan Supplement, June 2002, Table 2.3, p. 2-15). The estimated Effluent Concentration for arsenic from the Water Treatment Plant (WTP) is 30 ug/l (95% annual maximum dissolved, Water Management Plan Supplement, June 2002, Table 2.4, p. 2-18). This removal efficiency – a 99.44% reduction in arsenic in the treatment plant effluent – has yet to be demonstrated at the Pogo water treatment plant. D4-14

If any of these numbers are used for the calculation of the Maximum Projected Effluent Concentration, it results in a positive determination of reasonable potential.

From a logical standpoint, it makes sense to measure and set a permit limit for the discharge of a contaminant that has been this problematic from an environmental management standpoint

Recommendation: Arsenic should be regulated with a discharge standard in the NPDES permit.

2. Monitoring for Iron at Outfall 011

The Fact Sheet has listed iron as a contaminant with a reasonable potential to exceed the water quality standard for iron (Fact Sheet, Draft Permit AK-005334-1, Table C-3, p. C-6). Rather than monitor iron at Outfall 001, EPA has elected to monitor iron at Outfall 011 (internal monitoring) to avoid the potential for exceeding water quality standards should the background iron in the Goodpaster River naturally exceed the standard. However, in specifying the monitoring frequency for Outfall 011, EPA has specified only a quarterly grab sample (Appendix B, Draft NPDES Permit, Table 2, page 5 of 30). D4-15

Recommendation: Iron should be monitored at Outfall 011 at a weekly frequency like other contaminants in the permit with reasonable potential to exceed, since this is the compliance point for iron, and since it is not being monitored at Outfall 001.

3. Monitoring for Nickel

Although nickel is listed as a contaminant for monitoring at Outfall 001 in Table 1 of the Draft Permit, it is not listed in the similar Table 1 of the Fact Sheet. Since nickel is identified as a contaminant with the reasonable potential to exceed water quality standards (Appendix B, Fact Sheet, Table C-3, p. C-6), it is assumed that the error lies in Fact Sheet Table 1 rather than in the Draft Permit Table 1. D4-16

Recommendation: Nickel should be regulated with a discharge standard in the NPDES permit.

May 13, 2003
Page #6

POGO DRAFT ADEC WASTE DISPOSAL PERMIT COMMENTS

1. Standards for Revegetation (Draft Permit Section 1.9.3.2)

The Draft Permit lists the condition for judging successful revegetation as:

> "A vegetative cover of 30% after 3 years or as prescribed in the most recent Department approved Reclamation and Closure Plan." (Appendix E, Section 1.9.3.2)

The Draft Permit criteria above contains two important elements of revegetation criteria – a quantitative target for measuring revegetation success, and a time period against which to measure/judge this criteria.

There are a number of additional factors that are important for revegetation. These include:

- Successful revegetation can be determined when the vegetation on the site is similar in diversity and productivity to the surrounding, undisturbed lands for five consecutive growing seasons without human intervention, like irrigation or chemical treatment.
- Success also depends on the ability of the vegetation to control erosion over time, without any physical inputs from the mine operator. D4-17
- All disturbed lands, except for permanent water areas, should be seeded or planted to achieve a vegetative cover of diverse native species.
- The timing of revegetation is important. Plantings should be established in the first growing season after completion of the mining operation, and as soon as the site is prepared for planting with the appropriate growth medium.
- Certification of any seed used in the mine reclamation as weed-free. Weeds are proliferating at an alarming rate across the public lands. The Secretary of the Interior has identified control of weeds as one of the priorities for the Department.

a. More detailed description of revegetation requirements is recommended

For example, the Greens Creek Mine Reclamation Plan contains the following revegetation criteria:

> "Revegetation success will be monitored for three years following seedbed preparation, fertilization, seeding, mulching, and temporary erosion control measures. Fall revegetation surveys will be conducted the first year and a fall survey will be conducted the second and third year. Growth, ground cover, and species survival will be measured and reported on an annual basis."
>
> (Kennecott Greens Creek Mining Company General Plan of Operations, Appendix 14 - Reclamation Plan, October 2000, p. 2-5) D4-18

and;

> "Vegetation establishment and success on each reclaimed facility shall be monitored through the establishment of transect lines. Transect locations for all reclaimed areas shall be selected by KGCMC in consultation with the appropriate agencies. Vegetation inspections of all reclaimed areas shall follow the following guidelines:
>
> - Visual inspections of vegetation cover by life-form will be conducted (including annual grass, perennial grass, forbs, shrubs, trees, litter and standing dead.) Evidence of dieback, subsidence, slope failures or erosion will be noted.
> - Inspections will be conducted on permanent transects.

May 13, 2003
Page #7

- Pedestrian traffic will be restricted to the downhill side of the transect line and people will not be allowed to walk on the plots.
- Vegetation monitoring will be conducted once each year during peak standing biomass.

"Revegetation efforts shall be considered successful when the following conditions are met:

- The total vegetative cover (including live biomass of perennial species, litter, and standing dead) in each revegetated area is equal to or exceeds 80 percent aerial cover, with a 90 percent statistical confidence limit;
- The density of actively growing trees is within 80 percent of target levels contained in the approved reclamation plan with a 90 percent statistical confidence;
- The reclaimed wetland and plant meadow areas have at least three graminoids present each with relative herbaceous cover value equal to or greater than 5 percent, with no one graminoid comprising more than 70 percent relative cover;
- The reclaimed upland forest areas have at least two species of trees and one species of shrubs present, with each species comprising no less than 5 percent or no greater than 95 percent of the relative density value.

"If vegetation monitoring indicates that, due to natural or other causes, a reclaimed area does not exhibit the potential to achieve the revegetation standards described above, a report shall be prepared which describes the area in question, the situation as identified, probable causes, and a corrective action plan. This report shall be submitted by KGCMC to the appropriate agencies within 60 days of problem identification. Following approval of the plan by the appropriate agencies, KGCMC shall implement the plan in a timely manner. The corrective actions to be taken may include, but need not be limited to, re-establishment of topsoil thickness, reseeding, and replanting of trees and shrubs.

(Kennecott Greens Creek Mining Company General Plan of Operations, Appendix 14 - Reclamation Plan, October 2000, p. 2-7 and 2-8:)

Since this standard is already in use in Alaska, it may be appropriate to adopt it for the Pogo mine too.

D4-18 CONT'D.

b. Specifying a Next-Step if the revegetation standard is not met

The permit should also specify what next step(s) will take place if the revegetation standard is not met.

For example:

"If revegetation criteria are not met, then within one year an evaluation of the problems resulting in the failure of the revegetation will be evaluated by an independent revegetation expert, and a new revegetation plan will be developed in conjunction with this expert for approval by ADEC."

D4-19

c. Changing the revegetation standard

Establishing adequate revegetation standards is too important an issue to the public to allow the possibility of a last minute change in the reclamation plan, which would not receive public scrutiny, to take place.

Recommendation: The vegetation standard should remain a part of the permit, and should be changed only according to the standard permit modification procedures.

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2. Financial Assurance Calculation (Draft Permit Section 3)

Reclamation at the Pogo Project is planned to occur both concurrent with operations and after mining and milling have ceased. The two principle objectives to reclamation and closure of the Pogo Project are (1) to stabilize the land for post-mining use, and (2) to ensure water quality is not influenced after mining.

Reclamation is described in five phases. Phase I involves reclamation of disturbance from exploration and construction areas not needed for reclamation. Phase II describes concurrent reclamation activities including reclamation of stockpiled mineralized development rock. Phase III includes final reclamation and closure of the mine site including removing facilities not needed for closure, stabilizing the site, and setting up a temporary closure camp. Phase IV, entitled post closure reclamation, begins once mine site closure is complete and includes operation of the water treatment plant for up to ten years and monitoring and maintenance. Phase V is post closure monitoring which will begin once water quality standards are met and all reclamation is complete. This includes a five year monitoring period for groundwater, stormwater, and surface water.

The Pogo Project reclamation plan and closure cost estimates were prepared in accordance with standard engineering cost estimation procedures and are consistent with methods commonly used by industry as well as state and federal agencies. The Pogo Project reclamation and closure costs are estimated at $21,651,000 to cover the cost of mine site reclamation and closure, water treatment, and monitoring and maintenance of reclamation work, and surrounding water quality.

Current financial assurance amounts estimated for the Pogo Project guarantee reclamation takes place in the event of bankruptcy, or other circumstances where reclamation is not completed by Teck-Pogo Incorporated and joint venture partners are evaluated in this report. This technical review is based on analysis of the existing reclamation plans and financial assurance cost estimates provided in the POGO Project Documentation Series for Permitting Approval Reclamation & Closure Plan, December 2002.

D4-21

If the state of Alaska becomes responsible for reclamation at the Pogo Project it is critical that adequate funding is available for completion of the required tasks. It is well documented at other mine sites (e.g. Summitville Mine in Colorado; Zortman Landusky, Beal, and Basin Creek mines in Montana; and Brohm Mine in South Dakota) that in the event the operating company files bankruptcy costs incurred by the State to perform reclamation are significantly higher than those originally estimated (Kuipers 2000). In some cases costs incurred by state and federal agencies can be 10 to 100 times higher than those estimated in reclamation plans and financial assurance calculations (Kuipers 2000). For these reasons this review of the Pogo Mine reclamation plan and financial assurance(s) takes a conservative approach to cost estimating.

CSP² has calculated several estimates of the Pogo reclamation bond based on several scenarios, described below. At a minimum, we believe that the reclamation bond should be increased to $27,786,454 (Scenario 1), and possibly to $$34,491,185 (Scenario 2). In order to choose a "recommended" scenario, we need additional information/detail on some of the reclamation details. Scenario 3 and Scenario 4 are provided to estimate what the State's financial liability should water treatment be required for longer than the 10 year term assumed in the reclamation plan – a term that can probably be described as an estimate.

Financial assurance estimates calculated in this review were performed in accordance with standard cost estimation procedures and are consistent with methods commonly used by state and federal regulatory agencies. Site-specific reclamation tasks and associated areas of disturbance were developed from the

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aforementioned financial assurance estimate. Assumptions, reclamation tasks and associated costs used in this estimate are the same as those used in the existing reclamation plan and financial assurance(s), except where noted in the explanations for each scenario.

First, the existing financial assurance estimate was replicated (as Scenario 0) in a format that allows for unit costs to be determined for specific reclamation tasks. Next, four scenarios were developed where unit costs, indirect costs, and project timelines were evaluated and varied as described in the following sections. Finally, cash flow worksheets were generated for each scenario.

Detailed estimate calculations and the resulting scenarios and assumptions are available on request from CSP². Table 1 below summarizes the financial assurance amounts calculated for this review.

Table 1. Pogo Project Financial Assurance Costs Summary

Pogo Project Reclamation Plan	Pogo Project	CSP² Scenarios			
	Scenario 0	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
	Based on 2002 reclamation plan.	Based on 2002 reclamation plan with increased indirect costs.	Based on Scenario 1 with changes to unit costs.	Based on Scenario 2 with 50 years water treatment.	Based on Scenario 2 with 100 years water treatment.
Capital Costs	$13,474,394	$17,292,139	$19,327,837	$20,559,837	$22,099,837
Operating Costs	$8,177,388	$10,494,315	$15,163,348	$59,743,666	$110,215,666
Total	$21,651,782	$27,786,454	$34,491,185	$80,303,503	$132,315,503

D4-21

Pogo Project Scenario 0

For Scenario 0 labor costs, equipment costs, material costs, and volumes estimated for specific reclamation tasks used duplicate those provided in the cost estimation worksheets in the Pogo Project reclamation plan. Subcontract costs estimated were added into the labor estimates. Equipment costs and efficiencies are based on contractor quotes. These costs are typically estimated with the Caterpillar Performance Handbook, but the estimated equipment costs for the Pogo Project tend to coincide with other Alaska mine site estimates. Wage rates are not based on the Davis Bacon Wages for Alaska; however, the hourly wage rates used seem to coincide with labor costs estimated at other mines in Alaska. Material costs are based on contractor estimates.

Scenario 0 was generated to determine unit costs for specific reclamation tasks used in the Pogo Project cost estimate. Unit costs are evaluated and changed in subsequent scenarios. Although data inputs for Scenario 0 were derived from the Pogo reclamation plan slight differences in total amounts are observed. The Scenario 0 reclamation plan financial assurance amount differs by $782 ($21,651,000 - $21,651,782). This results in less than a <1.0% difference when compared to the financial assurance generated for the Pogo Project.

Review of the Pogo Project reclamation plan and associated financial assurance calculation revealed the following observations:

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- *Reclamation plan needs more detail re closure tasks.* Periodic reevaluation will be necessary are more accurate volumes and project timelines are determined.

- A detailed reclamation and closure schedule illustrating estimated timeframes for closure of major mine components (underground mine, impoundments, etc.) was not included in this reclamation plan. This is commonly used to generate a cash flow worksheet to determine the present dollar amount required to post financial assurance.

- Wetland habitat seems to comprise a significant (40%) portion of the land area proposed for disturbance under this proposal. Wetland reclamation and/or reconstruction for closure is often more costly than revegetation on 'dry land'. The cost estimate provided in Appendix F of the reclamation plan does not readily differentiate between wetlands and 'dry land' reclamation. Additional consideration should be given to the cost of contouring and revegetation planned on wetlands, and these areas should be distinguishable in the detailed cost estimation worksheets.

- The reclamation plan and cost estimate include costs for salvage of mine site equipment and facilities. No salvage credit was applied to the cost estimate.

- Water treatment after closure will utilize existing water treatment facilities until compliance standards are achieved. According to the reclamation plan water treatment facilities are planned for use up to 10 years after closure. The Pogo Project reclamation plan does not provide assurance that ARD problems from underground mine workings (a majority of sulfides and CN will be disposed of in paste) have been evaluated and will not occur, while the Liese Zone contains two tabular low-sulfide (3%) quartz zones. Based on experience at other mine sites with acid generating materials, ARD impacts can be expected to continue for a significant time period following reclamation. Although conditions will most likely improve following reclamation, water treatment facilities may be needed well into the future.

  Due to the significant impacts on groundwater and surface water quality ARD has been demonstrated to cause, the potential for long-term water treatment should be examined more closely. The possible need for water treatment facilities into the future is addressed in Scenarios 3 and 4 of this review where water treatment is continued for periods of 50 and 100 years respectively.

- Maintenance and monitoring plans are not adequately described in the reclamation plan. Water quality assurance monitoring is presented as a singe line item for Phases I through IV, and it is not clear if this is intended for site inspections or analysis costs, or both. For all 5 reclamation phases a detailed monitoring schedule including monitoring sites, parameters to be measured, frequency, and duration should be determined.

  In addition to monitoring, a detailed maintenance schedule should be developed. This should include regular inspections and maintenance as needed for the plugged portals, engineered soil covers, impoundment stability, revegetation success, etcetera.

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CSP² Scenario 1

Scenario 1 duplicates the Pogo Project reclamation plan (Scenario 0) financial assurance capital and operating costs with changes made to indirect costs as noted below. Scenario 0 indirect costs are calculated at 20% of the estimated contract costs, and Scenario 1 indirect costs are 54% of the estimated contract costs. The difference results from increases in Scenario 1 indirect costs to account for additional mobilization/demobilization, engineering redesign, procurement, construction management, contractor overhead, additional agency administration and inflation.

A financial assurance cost estimate should be performed under the assumption that reclamation is performed by a third-party under contract to the appropriate regulatory agency. Factors including contractor ownership, standby, overhead, engineering redesign, etcetera result in higher costs than those typical of reclamation costs when performed by mining companies. Indirect costs represent one of the most common areas in which financial assurance requirements are underestimated (Kuipers 2000). Indirect costs are added to this estimate to account for additional costs incurred in the event of agency management and oversight of reclamation and closure.

The Pogo Project cost estimate included indirect costs for contingency (5%), mobilization and demobilization (2%), contractor profit and overhead (10%), and agency administration (3%). In this estimate, indirect costs amount to 20% of the operating and capital contract costs.

The following indirect costs were applied to **CSP²** Scenario 1:

D4-21

- *Contingency.* Contingency costs reflect the level of detail and completeness of the cost estimate, as well as the degree of uncertainty of factors and assumptions used in the cost estimate. A contingency amount of 5% was applied to the estimated contract costs in the Scenario 1 cost estimate, which is the same percentage used in the Pogo Project cost estimate.

- *Mobilization / Demobilization.* Mobilization/demobilization costs account for the transport of equipment and materials to and from the mine site, as well as infrastructure needs. A mobilization/demobilization amount of 5% was applied to contract costs estimated in Scenario 1. The Pogo Project cost estimate uses 2% for mobilization / demobilization.

- *Engineering Redesign.* Engineering redesign costs stem from a lack of detailed information and plan development in a financial assurance estimate, as well as the need to account and design for actual conditions at the time of reclamation and closure. An engineering redesign cost of 3% was applied to the estimated contract costs used in Scenario 1. The Pogo Project cost estimate did not include any amount for engineering redesign.

- *Engineering, Procurement, Construction Management.* This indirect cost accounts for the requirement of construction engineering, procurement, and construction management on behalf of the agencies in the event they become responsible for reclamation. An indirect cost of 5% of the contract costs was used in Scenario 1, while the Pogo Project cost estimate does not account for the cost of this activity.

- *Contractor Overhead.* Contractor overhead accounts for administrating, management, public relations, safety, environmental, legal, performance bonding and other costs associated with doing

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business. A contractor overhead cost of 15% was applied to the estimated contract costs used in the Scenario 1 cost estimate. The Pogo Project cost estimate included 5% for contractor overhead.

- *Contractor Profit.* This indirect cost accounts for contractor profit. A contractor profit amount of 10% was applied to Scenario 1. The Pogo Project financial assurance estimate includes a contractor profit rate of 5%.

- *Agency Administration.* Agency administration includes costs incurred by state and federal agencies in situations where reclamation and closure are performed by regulatory agencies. Agency administration costs were accounted for as 8% of the contract costs in Scenario 1, and 3% of the contract costs for the Pogo Project cost estimates.

- *Inflation.* Inflation indirect costs account for the difference in the dollar value between the time the estimate was generated and reclamation and closure are performed. An inflation amount of 3% was applied to the contract costs estimated in Scenario 1. Inflation was not accounted for in the Pogo Project estimate.

Application of these indirect costs in Scenario 1 results in an overall increase of 28% over Scenario 0. The Pogo mine reclamation plan costs were estimated as $27,786,454 under Scenario 1. Indirect costs for Scenario 1 amount to 54% of the estimated operating and capital contract costs, while indirect costs were 20% for Scenario 0.

CSP² Scenario 2

D4-21

Scenario 2 includes the addition of indirect costs as described for Scenario 1, as well as changes to unit costs and reclamation tasks as described below.

- *Growth Media application.* The Pogo Project reclamation plan uses a 6 inch cover of growth media where required before revegetation. This cover depth may not be adequate to apply sufficient amount of growth media to all surfaces. For example, the most common surface receiving growth media in this estimate are gravel pads that will most likely require greater than 6 inches of cover for long-term success and stability.

  Scenario 2 assumes application of a 12 inch cover of growth media to ensure that all surfaces are adequately covered with the growth media upon application. Unit costs for this item were doubled to account for additional hauling and growth media application required. Unit costs and volumes of growth media required were doubled for each specific reclamation task for this item. Contingent growth media stockpiles discussed in the reclamation plan should be evaluated for adequate growth media volume to provide 12 inch covers.

- *Re-Seeding Costs.* The unit costs estimated in the Pogo Project reclamation plan for re-seeding seem low when compared to other operations. The revegetation procedures described in Appendix B of the reclamation plan describe different methods for minimally disturbed and highly disturbed areas. Minimally disturbed areas are to be scarified and fertilized to allow for natural recovery, while highly disturbed areas are prepared and reseeded.

  Scenario 2 uses a revegetation unit cost of $1,500/acre ($0.31/yd) on flat surfaces, and all surfaces are assumed to be flat (detail not provided in cost estimate). These unit costs are based on Montana

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Department of Environmental Quality (MDEQ) financial assurance recommendations based upon agency experience. In addition, minimally disturbed areas not planned for reseeding in Scenario 0 were included in the revegetation costs of Scenario 2. This includes the drystack cover, solid waste facility cover, and airstrip.

- *Sludge Disposal.* Sludge from water treatment facilities will be backfilled underground while the mine is operating. After closure of the underground mine, sludge disposal will be required for the 10 year water treatment period. A sludge disposal unit cost of $20,000/year to dispose of sludge generated from water treatment activities was added to Scenario 2.

- *Water Treatment Plant.* The Pogo Project reclamation plan assumes that existing water treatment facilities will be utilized after closure for up to 10 years, or until water quality standards are met. The water treatment plant is anticipated to operate at 180 gpm for 8 months per year for 10 years. A cost of $3,500,000 for 10 years of water treatment at this flow rate results in a unit cost of $6.00/1000 gallons treated water.

Scenario 2 assumed a water treatment cost of $10.50/1000 gallons treated, based on the average unit cost of similar water treatment plants. At the same flow rate, this results in a 10 year water treatment cost of $6,531,840.

D4-21

Application of these additional costs in Scenario 2 results in an increase of the current financial assurance amount by 59%. The Pogo Project reclamation plan costs were estimated as $34,491,185 under Scenario 2.

CSP² Scenario 3

Scenario 3 utilizes the same assumptions and changes made in Scenario 2, with the addition of 50 years of water treatment. As previously discussed, the Pogo Project reclamation plan does not include adequate detail regarding water quality, quantity, and acid rock drainage impacts to assess the adequacy of the estimated maximum 10 years of water treatment and 20 years of monitoring and maintenance.

Therefore, Scenario 3 was developed to determine the cost differences should water treatment, monitoring, and maintenance need to be extended for 70 years (50 years water treatment plus 20 years monitoring and maintenance). In this case, water treatment plant operation and maintenance costs were increased to reflect an operational period of 50 years. This includes a sludge disposal cost of $1,000,000 for 50 years of water treatment. Water treatment plant operating costs are estimated at $32,550,000 for this timeframe. Water treatment plant capital replacement costs totaling $4,614,000 were also assumed. For capital replacement costs, a water treatment plant capital cost of $2,614,000 was assumed based on the CSP² water treatment plant capital unit cost of $6,535/gpm and a water treatment plant capacity of 400 gpm.

Monitoring and maintenance under this scenario is performed as described in the reclamation plan with the time period extended. Long-term operation and maintenance expenses increased to $5,234,490. As mentioned previously, more detail is needed to determine the activities planned for post-closure monitoring to assess its adequacy. Under this scenario monitoring planned for Phases I to IV was extended for 50 years at an annual cost of $50,000 per year, and Phase V monitoring was not changed.

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Application of these additional costs in Scenario 3 results in an increase of the current financial assurance amount by 271%. The Pogo Project reclamation costs were estimated as $80,303,503 under this scenario.

CSP² Scenario 4

Scenario 4 utilizes the same assumptions as Scenario 2, with the addition of 100 years of water treatment to mitigate acid generating drainage. This scenario was developed to determine the cost difference if water quality standards were not met for 100 years after closure. Monitoring and maintenance under this scenario continue for 120 years, or 20 years after water quality standards have been met.

In this case, water treatment plant operation and maintenance costs were increased to reflect an operational period of 100 years. Water treatment plant operating costs are estimated at $65,100,000 for this timeframe. Water treatment plant capital replacement costs of $4,614,000 were assumed. Sludge disposal costs for 100 years of treatment were estimated at $2,000,000.

D4-21

Monitoring and maintenance under this scenario is performed as described in the reclamation plan with the time period extended to 120 years. Long-term operation and maintenance expenses increased to $7,734,490. As mentioned previously, more detail is needed to determine the activities planned for post-closure monitoring to assess its adequacy. Under this scenario monitoring planned for Phases I to IV was extended for 100 years at an annual cost of $50,000 per year, and Phase V monitoring was not changed.

Application of these additional costs in Scenario 4 results in an increase of the current financial assurance amount by 511%. The Pogo Project reclamation plan costs were estimated as $132,315,503 under Scenario 4.

Recommendation: At a minimum, we believe that the reclamation bond should be increased to $27,786,454 (Scenario 1), and possibly to $$34,491,185 (Scenario 2).

References

Kuipers, JR. February 2000. *Hardrock Reclamation Bonding Practices in the Western United States.* Boulder: National Wildlife Federation.

COMMENT RESPONSE:

D4-1 A summary of the acid-base accounting and kinetic tests has been added to Section 4.3.2.

D4-2 A summary of the waste rock data on which the waste rock segregation criteria were developed has been added to Section 4.3.2.

D4-3 These data are contained in Appendix C of the February 2002 Water Management Plan (Teck-Pogo Inc., 2002b).

D4-4 Text discussing site specific evaporation data has been added to 3.5.4.

D4-5 Section 4.1 states that to provide for storage of both snowmelt runoff and the 100-year, 24-hour storm event, the RTP volume would have to be an estimated 30 million gallons. The applicant has proposed a more conservative design, using a probabilistic method that resulted in a 40 million gallon design capacity.

The model that was developed to estimate water quality in the RTP is likely to be representative of normal weather conditions, but is likely to be conservative during periods of extreme high flows. As noted by the commenter, a storm that approached or exceeded the 40 million gallon capacity would result in substantial dilution within the RTP prior to any storm discharge. In the model, however, this dilution has not been accounted for, as the water quality of the various inflows to the RTP are not adjusted based on the magnitude of the flow. As a result, it is the rare probabilistic occurrence of extreme flows together with extreme water quality that results in the modeled exceedances. In reality, these combinations of events are unlikely to occur, and any discharge caused by a storm in excess of the 100-year storm event likely would be masked by the effects of storm runoff from the watershed in general.

D4-6 An evaluation of the potential environmental benefits and economic costs of placing additional mineralized waste rock underground has been added to Section 4.3.2.

D4-7 The comment is correct that the average sulfate concentration is greater than the reasonable worst case concentration for the estimated quality of the mineralized development rock seepage as listed in Table 4.3-7. The average sulfate concentration (634 mg/kg) is a conservative value based on results of actual development rock seepage from the exploration adit. The reasonable worst case value (386 mg/kg) was based on laboratory leaching rates and geochemical modeling. These values should have been adjusted previously to be consistent. The reasonable worst case value should have been increased somewhat. The values used, however, have resulted in a conservative estimation for the average case, and increasing the sulfate reasonable worst case concentration would have had a small effect on the water quality predictions.

D4-8 A clarification has been added to the text discussing Table 4.3-14 in Section 4.3.3.

D4-9 Text has been added to Section 2.3.6 to reflect the comment.

D4-10 Text has been added to Section 4.5.2 to reflect the comment.

D4-11 The response to this comment, and to the following comment (D4-12), are interrelated. Sections 4.9.2 (Gravel Source), 4.9.3 (Alternative 4, Water Discharge), 4.18.2 (Gravel Source), 5.2.1 (Gravel Source), S.12.1 (Gravel Source), and associated descriptions in Table 5.1-1 (4.18 Technical and Economic Feasibility) and Executive Summary Appendix A Table A-1 (4.18 Technical and Economic Feasibility) all have been redrafted and expanded to better discuss these issues. The option to mine gravel still remains in both the Environmentally Preferable Alternative as well as the Preferred Alternative, as discussed in Section 5.2.1.

D4-12 See response to comment D4-11 immediately above, particularly Section 4.9.3 (Alternative 2, Water Discharge, Off-river Treatment Works).

D4-13 Sections 4.18.3 (Tailings Facility Liner), 5.2.2 (Tailings Facility Liner), S.12.2 (Tailings Facility Liner), and associated descriptions in Table 5.1-2 (4.18 Technical and Economic Feasibility) and Executive Summary Appendix A Table A-2 (4.18 Technical and Economic Feasibility) all have been redrafted and expanded to better discuss this issue. The unlined tailings facility option still remains both the Environmentally Preferable Alternative as well as the Preferred Alternative.

D4-14 This issue will be addressed in ADEC's 401 Certification and EPA's response to comments with the final NPDES permit, both of which will be issued after publication of this FEIS.

D4-15 This issue will be addressed in ADEC's 401 Certification and EPA's response to comments with the final NPDES permit, both of which will be issued after publication of this FEIS.

D4-16 This issue will be addressed in ADEC's 401 Certification and EPA's response to comments with the final NPDES permit, both of which will be issued after publication of this FEIS.

D4-17 These suggestions will be considered in ADEC'S final decision for issuance of the waste disposal permit, which will occur after publication of this FEIS.

D4-18 These suggestions will be considered in ADEC'S final decision for issuance of the waste disposal permit, which will occur after publication of this FEIS.

D4-19 These suggestions will be considered in ADEC'S final decision for issuance of the waste disposal permit, which will occur after publication of this FEIS.

D4-20 These suggestions will be considered in ADEC'S final decision for issuance of the waste disposal permit, which will occur after publication of this FEIS.

D4-21 These suggestions will be considered by ADEC, in consultation with ADNR, for ADEC's final waste disposal permit which will be issued after publication of this FEIS.

D5

DELTANA COMMUNITY CORPORATION
P.O. Box 930
Delta Junction, Alaska 99737

RESOLUTION
Deltana Community Corporation
Delta Junction, Alaska

Resolution #2203-03

Whereas Deltana Community Corporation provides community services to the residents of the Delta area (unorganized), including, but not limited to: utilities, fire protection, community facilities, trails, bridges and roads; and

Whereas Deltana Community Corporation receives and administers State, Federal and Private grant funds for the benefit of all Delta area residents; and

Whereas the business of Deltana Community Corporation shall be managed by a Board of Directors, which shall exercise all powers of the corporation; and

Whereas Deltana Community Corporation provides a voice for local residents in the community;

THEREFORE BE IT RESOLVED that the Deltana Community Corporation supports the DEIS "Agency Preferred Alternative". Under this alternative, Shaw Creek Hillside all-season road will be open to general public use for the first 23 miles where the road is within or adjacent to the Tanana Valley Forest, and then closed for the remaining 26 miles to the mine. D5-1

Passed and Approved at a meeting of the Deltana Community Corporation held on April 10, 2003.

By: _____
Paul E. Knopp, President

Attest: _____
Kathy Sonnichsen, Administrator

COMMENT RESPONSE:

D5-1 Thank you for your comment.

APR-29-2003 10:10 FROM:DELTA CHAMBER OF COM 907 895 5141 TO:19072698930 P:1/1

D6

DELTA CHAMBER OF COMMERCE

RESOLUTION 2003-006

WHEREAS, teckcominco/Teck-Pogo Inc., Mining Corporation is proposing the development of the Pogo gold project, an underground mine that would produce 350,000 ounces to 500,000 ounces of gold annually, and

WHEREAS, an all-season road along Shaw Creek is proposed to provide access to the site from the Richardson Highway, and

WHEREAS, the Delta Chamber of Commerce is concerned with the overall economic well-being of the Delta area community, and

WHEREAS, the economic recovery strategy of the Delta area includes mining as a major component of that strategy, and

WHEREAS, teckcominco/Teck-Pogo Inc., Mining Corporation's operation may be a key element in the economic recovery for the Delta area and its residents if Delta becomes the service center for the mine, and

WHEREAS, teckcominco/Teck-Pogo Inc., Mining Corporation has already shown local hire and local purchase practices;

THEREFORE BE IT RESOLVED THAT the Delta Chamber of Commerce supports the Preferred Alternative Plan of the Draft Environmental Impact Statement, for all mining operations for the Pogo Gold Mine Project. D6-1

BE IT FURTHER RESOLVED THAT the Delta Chamber of Commerce supports Department of Natural Resources "Alternative Management Option" for the management of the road, and that the first 23 miles of the road remain intact and open to public use after mining is completed. D6-2

Passed and approved by the general membership on 4/10/03, 2003.

Signed: _____
Frederick W. Sheen, President

PO Box 987 • Delta Junction, Alaska 99737 • 907-895-5068 • 1-877-895-5068 toll free • 907-895-5141 fax • deltacc@wildak.net
www.DeltaJunctionAlaska.com

COMMENT RESPONSE:

D1-1 Thank you for your comment.

D1-2 Thank you for your comment.

D7

Delta Regional Economic Development Council

WORKING TOGETHER TO CREATE A BRIGHTER FUTURE

Board Members

Paul Knopp, President
Seat: Agriculture
Farmer

Whit Hicks, Vice President/Treasurer
Seat: Natural Resources Development
Executive Director
Delta Mine Training Center

Karla Giese, Secretary
Seat: Business Development
Small Business Owner
Fitness in Time

Steve Fields
Seat: Deltana Community Corporation
Board Member

Susan Kemp
Seat: City of Delta Junction
Council Member
City of Delta Junction

Larry Smith
Seat: Tourism
Board Member
Delta Convention and Visitors Bureau

Mike Jenkins
Seat: Delta Chamber of Commerce
Board Member
Delta Chamber of Commerce

Nancy Morris
Seat: Social Development
Teacher

Michelle Trainor
Seat: Delta/Greely School District
Board Member
Delta/Greely School District

JudyDewar
Seat: Regional Planning
Adult Learning Programs of Alaska

P. O. Box 780 Delta Junction, AK 99737

To: Agencies

From: Delta Regional Economic Development Council

Date: April 22, 2003

The Delta Regional Economic Development Council (DREDC) is a nonprofit organization that represents most of the economic and social service interests in the greater Delta Junction community (see attachment of members). The DREDC works to coordinate efforts to expand the local economy and improve the quality of life in the region. The DREDC comments reflect a comprehensive position of the community.

It is the position of the DREDC to support the proposed mine permit as summarized in the Preferred Alternative on pages 5-34 through 5-37 of the Draft EIS, published March 2003. The DREDC also supports the Alternative Management Option as stated in the Pogo EIS, appendix D.3, with minor additions. This option is both reasonable and most likely to maintain the quality of life in the area with the least negative impact on the residents that live nearby. The economic benefit of this project will affect the Delta region for many years. It is our estimation that strictly controlling the road corridor will minimize the alteration to the current land use and reduce the environmental impact in the area. D7-1 D7-2

We would like to see the Preferred Alternative permitted with the following additions:

- The road corridor is closed at the point of new construction to use other than mine related and logging traffic.
- A 660 foot aesthetic buffer will be left on each side of the road corridor. This buffer should not be logged or quarried.
- Any alteration to use of the closed section of the road must come to the public for comment. Additional permitting should be required to alter this use.
- An employee parking area will be permitted and constructed at the Richardson Highway intersection or nearby along the Richardson Highway instead of further up Shaw Creek Road.
- The entire road and power line corridor should be closed for hunting and access to hunting by motorized vehicle for ½ mile on each side for the entire length of the road that will be constructed.

D7-3

We recognize and appreciate the extensive efforts the agencies have committed to this process. If further comments are needed, please contact our council.

Sincerely,

Paul Knopp, President

D7

Delta Regional Economic Development Council

WORKING TOGETHER TO CREATE A BRIGHTER FUTURE

Board Members

Paul Knopp, President
Seat: Agriculture
President
Farmer

Whit Hicks, Vice President/Treasurer
Seat: Natural Resources Development
Executive Director
Delta Mine Training Center

Karla Giese, Secretary
Seat: Business Development
Small Business Owner
Fitness in Time

Steve Fields
Seat: Deltana Community Corporation
Board member

Susan Kemp
Seat: City of Delta Junction
Council Member
City of Delta Junction

Larry Smith
Seat: Tourism
Board Member
Delta Convention and Visitors Bureau

Mike Jenkins
Seat: Delta Chamber of Commerce
Board Member
Delta Chamber of Commerce

Nancy Morris
Seat: Social Development
Teacher

Michelle Trainor
Seat: Delta/Greely School District
Board Member
Delta/Greely School District

JudyDewar
Seat: Regional Planning
Adult Learning Programs of Alaska

P O. Box 780 Delta Junction, AK 99737

Date Passed: April 21, 2003

A RESOLUTION BY THE DELTA REGIONAL ECONOMIC DEVELOPMENT COUNCIL IN SUPPORT OF THE POGO MINE PROJECT

WHEREAS, the Delta Regional Economic Development Council is a nonprofit organization that represents the economic and social service interests in the greater Delta Junction community

WHEREAS, Teck-Pogo, Inc. (Tech-Pogo) has invested over $70 million to study, design, and permit the Pogo Gold Mine Project, and

WHEREAS, Tech-Pogo, upon receipt of the agency permits, will employ over 500 people during construction and over 300 hundred people for the life of the mine, and

WHEREAS, the United Stated Environmental Protection Agency (EPA), with the State of Alaska Department of Natural Resources (DNR) and the U.S. Army Corps of Engineers, has published a Draft Environmental Impact Statement (DEIS) on March 14, 2003, and

WHEREAS, the DEIS presents the EPA's and cooperating agencies preferred alternative, titled Environmentally Preferable and Preferred Alternatives on pages 5-34 through 5-37, including Figure 5.3-1, and

WHEREAS, DNR has requested public comment on the DEIS,

NOW THEREFORE BE IT RESOLVED THAT the Delta Regional Economic Development Council supports the Preferred Alternative described in the final Environmental Impact Statement with the following amendments:

- The road/powerline corridor will be closed at the end of the existing Shaw Creek Road to all access except mine traffic and limited access to Division of Forestry timber sales,
- DNR plan a 660 foot aesthetic buffer (no timber harvest or quarrying) on each side of the access corridor in consideration of future uses,
- Any use of this corridor other than currently proposed Teck-Pogo operations will require a public comment opportunity, and additional permits as required by State and Federal regulations,
- The entire road/powerline corridor will be closed to hunting for ½ mile on each side of the road during the life of the mine,
- Teck-Pogo is permitted to construct a secure parking and staging area somewhere other than Shaw Creek Road or the access corridor to reduce traffic on the residential section of Shaw Creek road.

D7-3

BE IT FURTHER RESOLVED THAT this resolution be distributed to:

EPA
U.S. Army Corps of Engineers
Commissioner Tom Irwin, DNR
City of Delta Junction
Teck-Pogo Inc.
Alaska State Legislature

President — Date 4-22-03 — Secretary — Date 4/22/03

COMMENT RESPONSE:

D7-1 Thank you for your comment.

D7-2 Thank you for your comment.

D7-3 Closure of state land to hunting, and means of access for hunting, are regulated by the Alaska Board of Game through a separate process outside the scope of this EIS. The other issues in this comment will be addressed by ADNR in its final decision for issuance of the ROW, which will occur after publication of this FEIS.

D8

Comments on the Pogo Gold Mine Draft Environmental Impact Statement: May 12, 2003

Of the Proposals presented in the draft EIS, the Goodpaster River Property Owners Association (GPRPOA) are in favor of Proposal #1 with the following exceptions:

ACCESS CONCERNS:

1) Whereas, one of the founding purposes of the GPRPOA is to protect the pristine quality of the Goodpaster River drainage, the members of the association feel that access and use of the all-season road as well as the power line easement that will run near it, should be designated for Private Pogo Mine business traffic only. If it were open to public access, the impact and pressure on the river and surrounding habitat would be increased and its value as wilderness would be compromised. D8-1
2) In addition, there should be a buffer zone along the road corridor for its entire length that would preclude any hunting, fishing, or other recreational activity by any person within one half mile on either side of the road. D8-2
3) In reference to the proposal for Public Access along the first 25 miles of the mine road, we feel that the road should remain private with no public access. This way there will be one entity, Pogo, responsible and liable for the road. D8-3

MINING OPERATIONS CONCERNS:

1) We are concerned that the proposed volume of discharge into the river at 400 gpm could cause changes in the nature of the river such as river bed variations and seasonal problems associated with freeze-up and break-up. D8-4

WINTER ICE ROAD CONCERNS:

The building and using of a winter road over the existing winter trail has potential for great impact on the trail users as we have experienced in the past. We would ask Pogo to take a proactive, rather than reactive, attitude toward the safety and accommodation of all trail users. Allowing current trail users to give input during the planning stages of this aspect of the project will not only enhance our co-existence on the trail, but should also lend a wealth of knowledge of the trail that could be helpful in the road building. Furthermore, the safety of each and every property owner is our concern, regardless of their location along the trail, either first or last, and regardless of how easy or difficult it will be to accommodate their safe travel. In particular we have the following comments: D8-5

1) The trail will need to be widened from its current dimensions to accommodate safe passage of vehicle traffic and trail users, including snow machines and dog teams.
2) The portion of the road bed that will be traveled by the traditional users should be the original trail as opposed to rough, hazardous new portions of the road. This is to prevent damage to snow machines and sleds.
3) Water crossings should be bridged to prevent overflow problems and to ensure safe passage of trail users.
4) The Winter Road should not be built with less than 12 inches of accumulated snow on the ground.
5) Where trees and brush are cut, the slash should be hauled away to leave the trail in its normal scenic condition.

Steven D. Wood
President, Goodpaster River Property Owners Association

COMMENT RESPONSE:

D8-1 Thank you for your comment.

D8-2 Closure of state land to hunting, and means of access for hunting, are regulated by the Alaska Board of Game through a separate process outside the scope of this EIS.

D8-3 Thank you for your comment.

D8-4 The reader is directed to the discussion of water discharge for Alternative 3 in Section 4.1.3.

D8-5 These suggestions will be considered by ADNR for its final decision for issuance of the winter road permit, which will occur after publication of this FEIS.

D9

GREATER ★ FAIRBANKS
CHAMBER
OF COMMERCE

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phone: (907) 452-1105, fax: (907) 456-6968
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Commissioner's Office
APR 14 2003
Department of
Natural Resources

Introduced by:	Natural Resources
Other Review:	Transportation
Date Introduced:	March 25, 2003
Date Passed:	April 1, 2003
Date Transmitted:	April 8, 2003

Resolution 03-0401

A RESOLUTION BY THE GREATER FAIRBANKS CHAMBER OF COMMERCE IN SUPPORT OF THE POGO MINE PROJECT

WHEREAS, Teck-Pogo Inc. (Teck-Pogo) applied for permits in August, 2000 to construct a new underground gold mine at the Pogo project located northeast of Delta Junction, and

WHEREAS, subject to completion of the EIS process and receipt of the necessary permits, Teck-Pogo plans to invest approximately $250 million to build the mine, employing up to 500 people during the two years of construction with 300 people employed year-round for the 10-year life of the project, and

WHEREAS, the U.S Environmental Protection Agency (EPA), with the State of Alaska and the U.S. Army Corps of Engineers as cooperating agencies, published a Draft Environmental Impact Statement (DEIS) for the Pogo project on March 14, 2003 that identifies an agency preferred alternative for project development, and

WHEREAS, in the DEIS, the agencies selected the Shaw Creek Hillside corridor, the route proposed by the company, as the preferred route for the all-season access road to the project, and

WHEREAS, the Alaska Department of Natural Resources (DNR) has asked for public comment on the potential management strategies to be used for the road corridor, and

WHEREAS, Teck-Pogo has proposed to pay for construction and maintenance of the road, portions of which will be single lane, and has designed it for industrial use for 12 –20 vehicle trips per day, and

Benefactors
Alaska Airlines
Alaska Communications Systems
Alaska Railroad
Alyeska Pipeline Service Company
AT&T Alascom
BP Exploration (Alaska) Inc.
CellularOne
ConocoPhillips Alaska, Inc.
CTG Alaska
Denali State Bank
Design Alaska
Fairbanks Building & Construction Trades Council "The Unions"
Fairbanks Natural Gas, LLC
Fairbanks Urgent Care Center
First National Bank Alaska
Flowline Alaska
Fort Knox Mine
GCI
Golden Heart Utilities
Golden Valley Electric Association
Guardian Flight, Inc.
Key Bank of Alaska
Mt. McKinley Bank
North Star Computing
Northrim Bank
Santina's Flowers & Gifts
Tanana Valley Clinic
Third Sector Technologies, Inc.
Totem Ocean Trailer Express
Usibelli Coal Mine
WebWeavers
Wells Fargo Bank Alaska
Wendy's
Westmark Fairbanks Hotel & Conference Center
Williams Alaska Petroleum

D9

GREATER ★ FAIRBANKS
CHAMBER
OF COMMERCE

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WHEREAS, the DNR "Alternative Management Option" to open the first half of the road to the public after mining is finished would result in improved safety during mining operations, fewer short-term environmental impacts, and increased revenue to the State, but would also allow immediate use of the road for timber management according to the five-year plan for the Tanana Valley State Forest, and

WHEREAS, the benefits that would accrue to the State from improved public access into this region would occur under the "Alternative Management Option" after mining operations are completed,

NOW THEREFORE BE IT RESOLVED that the Greater Fairbanks Chamber of Commerce supports the agency preferred alternative with the provision that DNR adopt the "Alternative Management Option" for the management of the road, and that the first 23 miles of the road remain intact and open to public use after mining is completed. D9-1

BE IT FURTHER RESOLVED THAT this resolution be distributed to:

U.S. Army Corps of Engineers
Alaska Congressional Delegation
Governor Frank Murkowski
Alaska State Legislature
Commissioner Tom Irwin, Alaska Department of Natural Resources
Teck-Pogo, Inc.
City of Delta Junction
City of Fairbanks
Fairbanks-North Star Borough Assembly

PASSED in Fairbanks, Alaska this 1st day of April, 2003 by the Greater Fairbanks Chamber of Commerce Board of Directors.

Terry Aldridge
Board Chair

Kara Moriarty
President/CEO

Benefactors
Alaska Airlines
Alaska Communications Systems
Alaska Railroad
Alyeska Pipeline Service Company
AT&T Alascom
BP Exploration (Alaska) Inc.
CellularOne
ConocoPhillips Alaska, Inc.
CTG Alaska
Denali State Bank
Design Alaska
Fairbanks Building & Construction Trades Council "The Unions"
Fairbanks Natural Gas, LLC
Fairbanks Urgent Care Center
First National Bank Alaska
Flowline Alaska
Fort Knox Mine
GCI
Golden Heart Utilities
Golden Valley Electric Association
Guardian Flight, Inc.
Key Bank of Alaska
Mt. McKinley Bank
North Star Computing
Northrim Bank
Santina's Flowers & Gifts
Tanana Valley Clinic
Third Sector Technologies, Inc.
Totem Ocean Trailer Express
Usibelli Coal Mine
WebWeavers
Wells Fargo Bank Alaska
Wendy's
Westmark Fairbanks Hotel & Conference Center
Williams Alaska Petroleum

COMMENT RESPONSE:

D9-1 Thank you for your comment.

D10

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PHONE: (907) 452-5021 FAX: (907) 452-3100
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May 13, 2003

Hahn Gold, NEPA Compliance Coordinator
US EPA, Region 10
1200 Sixth Avenue, OW-130
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Ed Fogels, Project Manager
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
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Luke Boles, Environmental Engineering Assistant
Alaska Department of Environmental Conservation
610 University Avenue
Fairbanks, AK 99709

Submitted by electronic mail and USPS

RE: Comments on the Draft Environmental Impact Statement and Associated Proposed Permit Decisions (State and Federal) for the Pogo Mine Project, Delta Junction, Alaska

Dear Ms. Hahn, Mr. Fogels and Mr. Boles:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement and associated proposed permit decisions for the Pogo mine project. Rather than send individual letters to the appropriate agencies and generate a significant courtesy copy list, we are submitting state and federal comments together in this letter. We also hereby incorporate by reference the comments from the Center for Science in Public Participation.

The Northern Alaska Environmental Center (Northern Center) is a non-profit environmental organization based in Fairbanks, Alaska. The Northern Center promotes conservation of the environment in Interior and Arctic Alaska through advocacy, education, and sustainable resource stewardship. The majority of our members are Alaskans who care deeply about the health and vitality of the environment that supports the communities in which they live and work.

Of primary concern to this organization and its members, and to Alaskans generally, is that our clean waters remain unpolluted. We want to continue to be able to

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drink Alaska water and eat Alaskan fish without fear that the water has been contaminated by heavy metals, industrial or human waste, or other toxics. We also want assurance that a corporation proposing new industrial development is fiscally responsible and accountable, and promotes sound environmental, labor, and human rights practices at all of its operations, regardless of country of location. And while these two issues – clean water and corporate accountability – are important wherever new industrial development is proposed in Alaska, they become even more so when it occurs in an area, such as the Goodpaster watershed, that is presently roadless, pristine, and of high biophysical and recreational value.

The Northern Center recognizes the significant efforts in design, data collection, and outreach expended by Teck-Pogo, Inc. ("Teck") during the project development and permit application phases. We also appreciate the level of scrutiny that EPA and other state and federal agencies have applied to the various components of the proposed project. We expect that Teck's commitment to protecting the environmental integrity of the Goodpaster region, to mitigating negative impacts to residents and users of the Shaw Creek and Goodpaster River areas, and to restoring the mine site, after closure, to a condition that will promote wildlife and recreation, will continue undiminished throughout the life of the mine. Likewise, we expect that the responsible state and federal agencies will continue their present level of involvement in monitoring environmental performance and compliance, and will remain responsive to public concerns and complaints, should any arise.

Additionally, because the Pogo deposit is high-grade with a current estimated reserve of approximately 5.2 million ounces of gold, is located on state land, and, most importantly, is in a region of exceptional biophysical, recreational and scenic value, we anticipate that Teck-Pogo, Inc., a wholly-owned subsidiary of Teck Cominco will pay royalties on all the gold that it extracts and exports. The Pogo project is owned by Sumitomo Metal Mining, Inc., arguably the world's oldest mining company and a member of one of the world's largest and most powerful group of companies and subsidiaries. Teck Cominco, itself a large multinational mining company with diversified holdings, will extract gold worth, at $300/ounce, over 2 billion dollars. Although there are significant capital costs associated with building a remote underground mine, it is reasonable to expect that there will be net income on Pogo gold because of the value of the deposit, and the financial solidity and assets of the project's backers.

Although the state's royalty structure allows numerous deductions from mineral value prior to assessing the 3% royalty fee, we believe one mark of good corporate responsibility is paying royalties on all metal produced by declining to engage in accounting practices that take maximum advantage of the net income structure. Our expectation, then, is that Teck-Pogo, Inc. will pay royalties on all gold mined, and that we will not see a duplication of the Fort Knox scenario, wherein Fairbanks Gold Mining, Inc. has extracted well over a billion dollars in gold, but has yet to pay a dime in royalties.

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Comments on the Draft Environmental Impact Statement, NPDES permit

I. Introduction

Teck has proposed developing an underground gold mine on undisturbed State land in the Goodpaster River Valley, 38 miles northeast of Delta Junction, Alaska. The surface water in the vicinity of the project is essentially undeveloped and pristine. Man-made structures modifying the flow regime or flow characteristics are nonexistent. Liese Creek is an intermittent stream and runs 2.2 miles before draining into the Goodpaster River.

The mining operations will result in the creation of 5.4 million tons of excess mine tailings and 2.65 million tons of excess development rock. In order to dispose of this waste, Teck will remove 85 percent of the moisture from the tailings and place them and the rock in the upper reaches of Liese Creek and its surrounding wetlands. This "dry-stack" disposal area consists of approximately 43 acres of wetlands and stream waters, all of which will be eliminated. In addition, Teck will impound Liese Creek, and pollutants from the dry-stack will be discharged into the creek and its surrounding wetlands.

II. The Alternatives Analysis Is Deficient Because the Agencies Failed to Analyze in Detail Any Disposal Location Other than Liese Creek that Does Not Involve the Use of a Stream or Wetlands

The DEIS employed a three-step alternatives analysis. The DEIS indicates that, in the first step, the agencies considered thirteen locations for the disposal of the tailings. However, the agencies analyzed only one disposal location in the next two steps: Liese Creek and its surrounding wetlands. The agencies must analyze in detail or, at least, discuss the reasons for eliminating the other disposal alternatives that do not impact any streams or wetlands.

D10-1

The alternatives analysis is the "heart of the environmental impact statement." 40 C.F.R. § 1502.14 (2002). NEPA requires the agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." 40 C.F.R. § 1502.14(a) (2002).

With respect to the filling of wetlands, the alternatives analysis must be even more rigorous. Where, as here, the activity "does not require access or proximity to or siting within [wetlands] to fulfill its basic purpose (i.e., is not 'water dependent'), practicable alternatives that do not involve [wetlands] are presumed to be available, unless clearly demonstrated otherwise." 40 C.F.R. § 230.10(a)(3) (2002) (emphasis added).

D10

These standards have not been met here. Appendix A to the DEIS indicates that thirteen disposal locations were identified, seven to the west and six to the east of the Goodpaster River. The agencies rejected the western sites as technically infeasible. Of the remaining six eastern sites, only one site did not involve mining waste disposal into a stream or wetlands, and the agencies summarily rejected that site because it had insufficient storage volume. The DEIS does not, however, indicate whether there are any other reasonable disposal locations that are not in waters or wetlands. Accordingly, the agencies have failed to rigorously explore all alternatives and has not "clearly demonstrated" that there are no alternative disposal locations to the wetlands. D10-1 CONT'D.

III. NPDES Permits Are Required Both for the Disposal of the Mine Tailings and Development Rock into Liese Creek and its surrounding wetlands and for the Discharges from that Pile

Based on the information contained in the DEIS, it appears that Teck's NPDES permit will not include: (1) the disposal of 7.65 million tons of tailings and development rock into Liese Creek and the 43 acres of surrounding wetlands and (2) the discharge from the tailings/rock pile into Liese Creek and its wetlands. However, under the Clean Water Act, Teck must apply for an NPDES permit for these discharges.

The purpose of the Act "is to restore and maintain the chemical, physical, and biological integrity of the Nation's Waters." 33 U.S.C. § 1251(a). In order to fulfill this purpose, the Act prohibits the discharge of any pollutant into waters of the United States, except if done in compliance with the Act. 33 U.S.C. §§ 1311(a), 1342(a). The DEIS indicates that Liese Creek and its surrounding wetlands are waters of the United States. DEIS at 3-55 and Table 3.5-1. The mine tailings and development rock are pollutants. 33 U.S.C. § 1362(6). Therefore the disposition of the tailings and rock in Liese Creek and its surrounding wetlands and the subsequent discharges from that pile into the creek and wetlands are prohibited unless authorized by a permit. D10-2

The DEIS does not explain why the agencies are not regulating these discharges. Pursuant to the Freedom of Information Act, we have obtained a document (attached) which indicates that the agencies may treat the entire 43 acres of wetlands and Liese Creek as a waste treatment facility. According to the document, once Liese Creek is impounded, the section above the impoundment will "be classified a waste treatment facility (WTF) and therefore would not be considered a water of the United States." Attachment at 1. This document contains a map which has a line encircling Liese Creek and its surrounding wetlands from the impoundment to just above the mineralized development rock stockpile. *Id.* at 2. The document explains that "[e]verything within the line is considered a waste treatment facility, therefore not subject to Corps authority." *Id.* at 1.

There is no provision in the Clean Water, however, which gives the EPA or the Corps the authority to convert "waters of the United States" into a waste disposal facility. In fact, in enacting the Clean Water Act, Congress intended to end the practice of using

D10

waters for waste disposal. *See* S. Rep. No. 92-414, at 7 (1971) ("The use of any river, lake, stream or ocean as a waste treatment system is unacceptable").

EPA's regulations also do not permit the use of waters of the United States for waste disposal. Those regulations prohibit the use of waters of the United States for the purpose of waste assimilation. 40 C.F.R. § 131.10(a). Furthermore, the fact that the Corps will issue a 404 Permit to impound Liese Creek does not convert the waters and wetlands above the dam into a waste treatment facility or change their status as "waters of the United States." EPA's regulations provide that "[a]ll impoundments of waters otherwise defined as waters of the United States" are still "waters of the United States." 40 C.F.R. § 230.3(s)(4) (2002). *See also* 33 C.F.R. § 328.3(a)(4) (same).

The document in the record discussed above indicates that the agencies believe that, if a permit were required, it would be a 404 Permit from the Corps and not a 402 Permit. This is incorrect. Section 404 permits apply to activities involving "the discharge of dredged or fill material into the navigable waters at specified disposal sites." 33 U.S.C. § 1344(a). Notwithstanding the Corps' recent rule change to the contrary, *see* 67 Fed. Reg. 31,129 (May 9, 2002), the Clean Water Act gives the Corps jurisdiction under Section 404 to issue permits only where the discharge of fill material has a constructive purpose, not where its purpose is the disposal of waste. This is precisely how the Corps construed the Section 404 program since Congress enacted the Clean Water Act and until the Corps's 2002 rule change. *See, e.g.*, 33 C.F.R. § 323.2(e), (f) (2001); Memorandum of Agreement Between the Assistant Administrators for External Affairs and Water, U.S. Environmental Protection Agency, and the Assistant Secretary of the Army for Civil Works Concerning Regulation of Discharge of Solid Waste Under the Clean Water Act, 51 Fed. Reg. 8,871 (Mar. 14, 1986). Accordingly, since the sole purpose of the disposition of the tailings and rock into Liese Creek is to dispose of waste, the Corps does not have jurisdiction to regulate that activity under Section 404. Instead, EPA has jurisdiction pursuant to Section 402. D10-2 CONT'D.

In short, the Clean Water Act and EPA's regulations do not permit the agencies to convert Liese Creek and its surrounding wetlands into a waste treatment facility. Instead, they require Teck to obtain an NPDES permit for all of its discharges. Specifically, Teck must apply to EPA for (1) a 402 Permit to discharge the tailings and development rock into Liese Creek and its surrounding wetlands and (2) a 402 Permit for the discharges from the tailings and rock pile into Liese Creek.

IV. The Draft NPDES Permit Should Regulate Arsenic and Require Weekly Monitoring for Iron

The draft NPDES Permit is deficient because it does not contain a limit for arsenic, a primary contaminant in the orebody, and it requires only quarterly, as opposed to weekly, monitoring for iron. D10-3

D10

A. Arsenic

The DEIS predicts that the level of arsenic will be 5,360 µg/L in the mine seepage under reasonable worst-case conditions. DEIS at Table 4.3-1. This concentration was used as the input arsenic level to the Water Treatment Plant (95% annual maximum, Water Management Plan Supplement, June 2002, Table 2.3, p. 2-15). Since the estimated effluent concentration for arsenic from the treatment plant is 30 µg/L (95% annual maximum dissolved, Water Management Plan Supplement, June 2002, Table 2.4, p. 2-18), the agencies apparently have assumed that the treatment plant will remove 99.44% of the arsenic from its effluent. Whether Teck's treatment plant can achieve this removal efficiency has not been demonstrated. Therefore, the assumption that it will do so under reasonable worst-case conditions is not tenable. D10-3 cont'd.

If a more realistic removal efficiency were used, arsenic would likely exceed 30 µg/L. Arsenic should therefore be regulated with a discharge standard in the NPDES permit. Furthermore, in light of EPA's new limit of 10 µg/L for arsenic under the Safe Drinking Water Act, the agencies should consider using an interim limit which will become stricter after the State has amended its water quality standard for arsenic.

B. Iron

The Fact Sheet has listed iron as a contaminant with a reasonable potential to exceed the water quality standard for iron. DEIS App. at C-6, Table C-3. Rather than monitor iron at Outfall 001, EPA has elected to monitor iron at Outfall 011 (internal monitoring) in order to avoid the potential for exceeding water quality standards should the background iron in the Goodpaster River naturally exceed the standard. However, in specifying the monitoring frequency for Outfall 011, EPA has specified only a quarterly grab sample. DEIS App. at B-5, Table 2. Iron should be monitored at Outfall 011 at a weekly frequency like other contaminants in the permit. D10-4

V. A Lined RTP and Dry Stack Should Be the Environmentally Preferred Alternative

Table 5.3-2 includes an "Unlined dry stack" and "Unlined RTP" in the environmentally preferred alternative over a "Lined dry stack" and "Lined RTP." However, a lined facility would be more protective of the environment than an un-lined facility. Indeed, as the DEIS notes (p. 4-18), a "lined RTP likely would reduce seepage loss from the facility." Therefore, EPA should include the lined RTP and dry stack in the environmentally preferred alternative. D10-5

Comments on the Draft Environmental Impact Statement Relative to Segregation/Disposal of Waste (Development) Rock

The sections of the DEIS that deal with the disposal of waste (development) rock from the pre-production and operations phases of the Pogo mine have a few minor inconsistencies with the proposed Solid Waste Disposal Permit and Teck's proposed

D10

monitoring plan. This makes it difficult to follow exactly the process for dealing with potentially polluting waste rock.

First, on page 2-17 of the DEIS, under the applicant's preferred alternative, Section 2.3.8 Development Rock Storage, third paragraph, the applicant states: " During the exploration phase, the development rock would be segregated as mineralized or nonmineralized;..." It is unclear if this refers to the waste rock already excavated and stored at the 1525 portal as a result of earlier exploration, or if this includes additional waste rock that will be removed during the two-year pre-production period. If the latter, then the opening wording should be changed from "exploration" to "pre-production." While disposal of the mineralized waste rock from the various portals is described, it is unclear what will be done with the nonmineralized waste rock, and where it will be stored, if not used in surface construction. Also, the classification parameters for segregating the waste rock should be given here, as well as a more detailed schedule for the transport of the mineralized waste rock from the 1525 portal dump to the dry-stack tailings facility. Despite the 1525 portal dump being lined, mineralized waste rock should be moved to the dry-stack facility as soon as practicable, since that facility is covered by the Solid Waste Disposal permit, and more closely monitored than the 1525 portal dump. D10-6

Likewise, in Chapter 4, Environmental Consequences, Section 4.2 Ground Water, Alternative 4, Options Common to All Alternatives, Development Rock Disposal, first paragraph (page 4-30), the statement "During operation, these two types of rock might or might not be segregated" is confusing and provides insufficient information about the process for handling waste rock. This section should clearly indicate to a reader that 1) there will be a significant amount of development rock left underground (approximately 436,000 tons), which will not be segregated, since it will not be brought to the surface, and 2) that all development rock brought to the surface will either be tested and segregated, or, if not tested, assumed to be mineralized and disposed of in the dry-stack facility. D10-7

There should also be a schedule for the disposal of mineralized waste rock in the dry-stack facility – beyond the basic statement that it is projected that the mineralized waste will be encapsulated in the dry-stack by year 7. If the mechanics of dry-stack construction and accumulation dictate that the mineralized waste rock will not be incorporated/encapsulated before year 7, then this should be stated. D10-8

Comments on the Proposed Decision for the Pogo Project Right-of-Way, ADL 416809

While the Northern Center originally preferred the winter road option, we realize that with several warm Interior winters recently, the option of a winter ice road does not meet the transportation needs of Teck. Therefore, we neither oppose nor support the Proposed Decision for the Pogo Project – which would construct the all-season Shaw Creek Hillside Road – of which the first 23 miles would be open to the public and not D10-9

D10

scheduled for reclamation at end-of-mine life, while the remaining 26 miles would be for the exclusive use of Teck and reclaimed at end-of-mine life. D10-9 cont'd.

On the proposed decision document, we have the following comments.

I. Issuance of a Combined Right-of-Way for the Shaw Creek Hillside Route

If road access must be built for the Pogo mine project, we do not disagree with the State's proposed Right-of-Way decision for the Shaw Creek Hillside Route, including opening the first 23 miles to the public, for the following reasons *and contingent upon the following recommendations*:

- The first 23 miles wind in and out of the Tanana Valley State Forest. We believe that it is appropriate that a road that traverses a public resource, such as a state forest, remain open for all public uses, provided that DNR undertakes proper management actions, including monitoring of public use patterns, to protect the resource from degradation by off-road vehicles and to limit the development of unauthorized trails.
- TVSF regulations stipulate that all roads are multiple use – barring significant public safety concerns. The amount of mine traffic is projected at levels too low to cause significant public safety issues that cannot be controlled with proper management.
- Construction of this portion of the road is likely to increase public use of the existing Shaw Creek Road as well as of the portions of the TVSF that it accesses. However, it is reasonable to assume that this increase will come more from local residents (Delta area) than from people traveling from Fairbanks or elsewhere in the Interior. It is highly unlikely that this particular road will become a destination for auto tourists; therefore, the likelihood of collisions between RVs and mine traffic is remote.
- Although people living on Shaw Creek Road will be negatively impacted from increased traffic and noise, it is reasonable to assume that most of the increased noise and traffic will result from the operation of the mine, not from the public using the road. Therefore, making this portion private exclusive to Teck is not likely to significantly mitigate these negative impacts. On the other hand, by maintaining public access, the agencies will provide benefits to local residents and users such as access to the TVSF for personal-use firewood and building logs, more opportunities for small sawyers, and increased opportunities for some types of hunting (for example, grouse) and recreation.

D10-10

We recommend that the first 23 miles of the Shaw Creek Hillside Route, except for those portions of the Shaw Creek Road that already exist, be closed at end of mine of life.

D10

II. Establishment of a Reimbursement for Services Agreement Between Teck-Pogo, Inc. and DNR

We recommend that during the life of the Pogo mine, Teck enter into a Reimbursement for Services Agreement (RSA) with the Alaska Department of Natural Resources that would reimburse costs for additional staffing of forestry/resource specialists, at a level determined to be sufficient by the Division of Forestry and the Division of Mining, Land and Water, for the purposes of monitoring public use and assisting in the management and protection of resources in the Shaw Creek units of the Tanana Valley State Forest, and in the coordination and organization of meetings of the Goodpaster Review Working Group, as needed. D10-11

Teck has an existing RSA with DNR that reimburses costs, including salaries, incurred during the preparation of their permits for the Pogo mine; therefore, this type of agreement is not without precedent. Further, an agreement to reimburse this type of staffing is consistent with Teck's recognition of the high value of the Shaw Creek and Goodpaster region's natural and recreational resources and its commitment to minimize environmental and community impacts resulting from the Pogo mine and access road.

III. Location of the Bus Terminal/Maintenance Facility Site

If the Shaw Creek Hillside Road is constructed, we recommend that the bus terminal/maintenance facility be constructed within Material Site #2, adjacent to the Richardson Highway, rather than west of the TAPS crossing, so as to reduce traffic on Shaw Creek Road. D10-12

IV. Process for Future Applications for Use of the Private Exclusive Right-of-Way

On page 37, fourth paragraph, the Proposed Decision states "other uses of the second portion [i.e. from Gilles Creek to the Pogo Mine] are prohibited, unless DNR makes a determination to authorize additional uses. In making this determination, DNR **will** consider:

- Input from the public and agencies,
- Input from the Goodpaster Review Working Group as established in the 1991 Tanana Basin Area Plan,
- The impacts of additional resource development and road use on the resources identified in Section IX of this finding, and
- Appropriate reimbursements by new users to Teck-Pogo or its assigns for road construction and maintenance."

(emphasis added). D10-13

First, we recommend substituting "shall" for "will." While we appreciate the intention within the Proposed Decision to set forth a process for handling future applications to use the private exclusive portion of the ROW, the process for granting additional users access must be mandatory, not discretionary. This will assure all

D10

stakeholders – including residents, Teck and its assigns, recreationalists, hunters, fishers, etc. – that the application process will not only be transparent and participatory, but that it can be counted on to occur if and when an application for road use is submitted to DNR. D10-13 CONT'D.

Second, we recommend that, under the second bullet point, the permit identifies the stakeholders that comprise the Goodpaster Review Working Group. Representatives from conservation, tourism, and potentially the military should be included. There should also be a process delineated for adding new interests (for example, a borough representative, should a Delta Borough be created) to the group. D10-14

Third, Section IX of the Proposed Decision evaluates "reasonably foreseeable, significant effects" of the Right-of-Way on identified resources. While this is important information to consider when evaluating a future application for use, this does not specifically include a cumulative impacts analysis, nor does this specifically require that DNR, in the future, evaluate data collected *after* road and mine construction in order to determine what, if any, impacts road and mine operation have had. Therefore, this bullet point should be modified to include stipulations that DNR will conduct a cumulative impacts analysis similar to that which was done during this permitting process, as well as review monitoring data that has been collected since baseline, to ensure that road and Pogo operations have not had significant deleterious effects on the Goodpaster, Shaw Creek, and surrounding environment. D10-15

Comments on the Draft Solid Waste Disposal Permit # 0131BA002

I. Segregation, Disposal and Monitoring of Waste Rock

Under Section 1.2 Limitations, stipulations governing the disposal of mineralized waste (development) rock should be tighter. Section 1.2.1 states that waste materials that are covered under this section include development rock that is limited to approximately 24,500 tons deposited weekly in the dry-stack facility (over life of mine of 11 years – roughly 14 million tons). Section 1.2.7 goes on to state: "The limitations in section 1.2 do not preclude the surface storage prior to treatment/disposal of development rock…" Teck's monitoring plan, which is incorporated into this permit, under Section 4.4.1 Development Rock Segregation & Storage, states "Development rock will be mined, brought to the surface, segregated by individual blasted rounds and held for assay. When the assays are complete, the material will be classified as 'mineralized' or 'nonmineralized' based on the classification procedure developed during the excavation of the underground exploration drift in 1999 and 2000." D10-16

Taken together, these references in the Solid Waste Disposal permit present a cloudy picture of how waste rock will be segregated, disposed of, and monitored. So that the public may better understand the classification/disposal process, as well as to be sure that the most conservative handling of potentially polluting waste rock is undertaken at all times at the Pogo mine, we recommend the following changes/clarifications:

D10

- The monitoring plan should clearly differentiate between waste rock that is left underground (and thus does not need to be segregated) and waste rock brought to the surface – which shall either be tested and segregated, or if untested, shall be classified as mineralized and deposited in the dry-stack facility.
- The classification procedure for mineralized/nonmineralized should be clearly outlined in the monitoring plan, rather than referenced.
- Limitation 1.2.7 should be modified such that the surface storage of waste rock prior to treatment/disposal is constrained to specific sites identified in the permit and plan of operations. There should also be a time limitation established on how long waste rock may remain in a temporary storage site prior to segregation and disposal. D10-16 CONT'D.
- Restore the mineralized cut-off level for arsenic to 200 mg/kg rather than the proposed 600 mg/kg. There is no supporting test data provided in the plan of operations, the proposed Solid Waste Disposal Permit or the proposed monitoring plan that supports the elevation of the arsenic cut-off level. The justification for this elevation contained in Teck's Plan of Operations, February 2002 (and removed from the updated Plan of Operations, November 2002) is that this change is "based on the low arsenic values observed in seepage from the development rock stockpiles to date as well as updated test results…" (page 2-7, February 2002). Since this reference is deleted in the latest revision of the Plan of Operations, and no supporting data are provided to justify the decision, at a minimum, 200 mg/kg should remain the cut-off level, and the sulfur percentage and the arsenic concentration should both be stipulated in the limitations.

Further, there are no stipulations in the Solid Waste Disposal Permit or in the proposed monitoring plan for testing and monitoring for acid generation potential in the waste rock brought to the surface. The cut-off for sulfur in segregating mineralized waste from nonmineralized is 0.5%. However, at the True North mine, where sulfur levels are roughly 0.01% in waste rock, FGMI is required to do quarterly acid/base accounting of all waste rock. If static evaluations show less than a 3:1 ratio of net neutralization to net acid generation, kinetic testing is required. The same should be required of waste rock brought to the surface at Pogo – especially since the sulfur levels are much higher at Pogo, even in the "nonmineralized" waste rock, than they are at True North. D10-17

Comments on the Reclamation & Closure Plan, December 2002

The Reclamation & Closure Plan identifies as one of its performance objectives the establishment of a viable vegetative cover that will not need fertilization after five years. This is an important goal that must be met if mine site reclamation is to achieve the goals of public recreation and wildlife habitat. As some mine site closures in the western United States have demonstrated, it is not uncommon to have reasonably good vegetative cover while there is care and maintenance of the site (i.e. fertilizer application), only to have the cover die out after the site is closed. Harsh climates with poor soil development, such as those in the western desert states and Interior Alaska, D10-18

D10

exacerbate the problem. It is also important that a hardy, invasive species does not dominate the new growth. Therefore, we urge the use of local species and the collection of local seeds for revegetation, as well as the use of the minimum amount of fertilizer for the shortest possible time. D10-18 Cont'd.

Although an "alpine grass meadow" is likely the only landform that the closed dry-stack will approximate, construction of the perimeter ditches further emphasizes the artificiality of the final landscaping. Establishing a more natural drainage pattern, rather than one of ditches outlining the edges of the dry-stack, would contribute to better restoration of the site. We recognize the importance of reducing erosion and breaching the engineered cover, but we urge consideration of alternatives – such as constructing armored drainages mimicking original drainage patterns of Liese Creek – rather than a contour ditch. D10-19

Again, thank you for the opportunity to comment on the Draft Environmental Impact Statement and proposed decision documents for the Pogo mine project. Please continue to keep us informed on project developments. Responses and questions may be directed to my attention at the address above.

Sincerely,

Mara C. Bacsujlaky, Assistant Director/Mining Coordinator

eCC: Victor O. Ross, USACOE

D10

402/404

Refresher: Consensus was to utilize an establish a boundary (either by road/berm/diversion ditches) to define where the Corps', EPA's, and/or the State jurisdictional or permitting options would apply. We were proposing that everything within the established boundary be classified a waste treatment facility (WTF) and therefore would not be considered a water of the United States.

Second issue-if the EPA and the Corps cannot decide on specific jurisdictional boundaries, then is there a possibility of utilizing special conditions on the 401 to settle the differences.

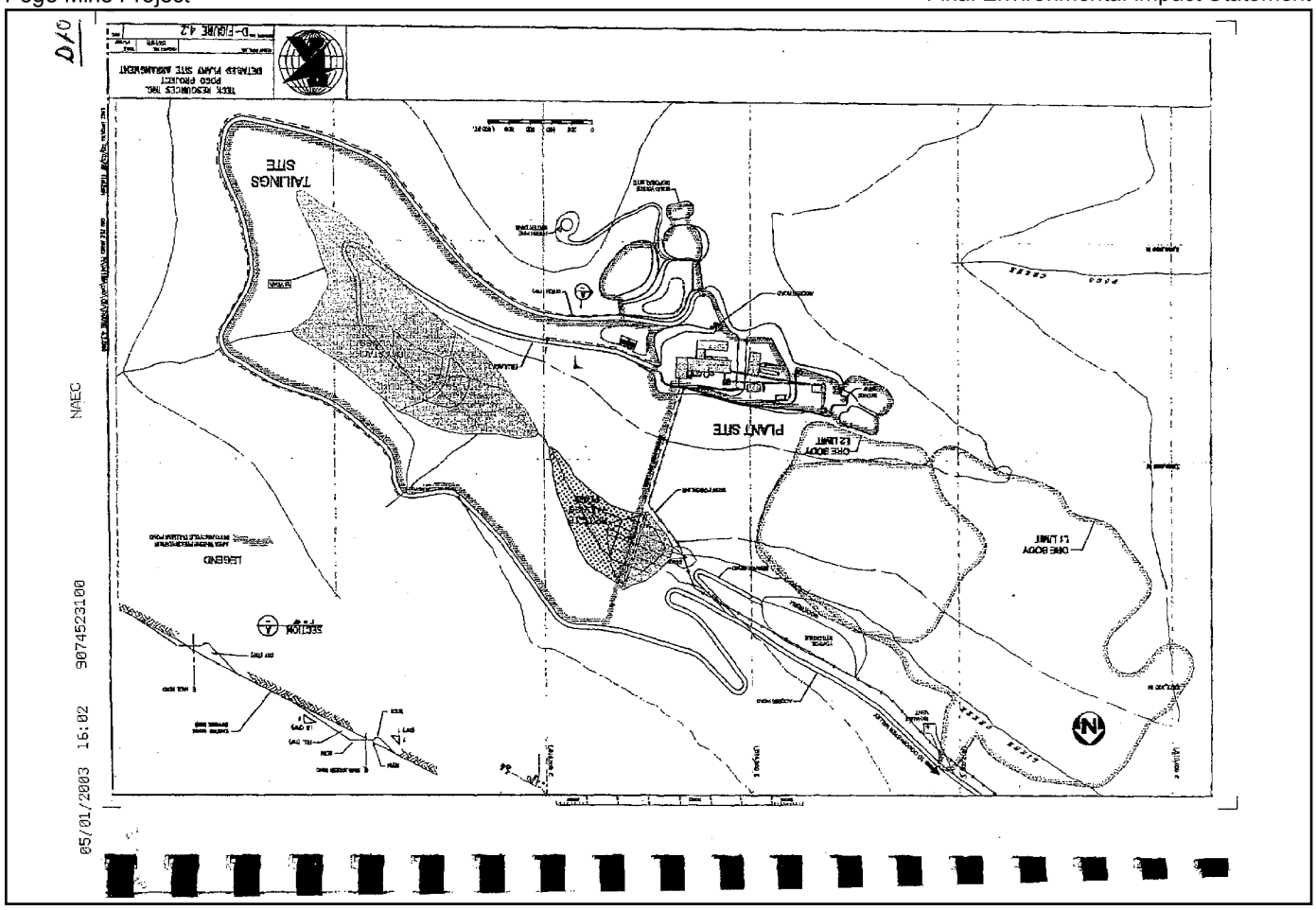
1. Pink line indicates Corps jurisdiction boundary. Everything within the line is considered a waste treatment facility, therefore not subject to Corps authority.

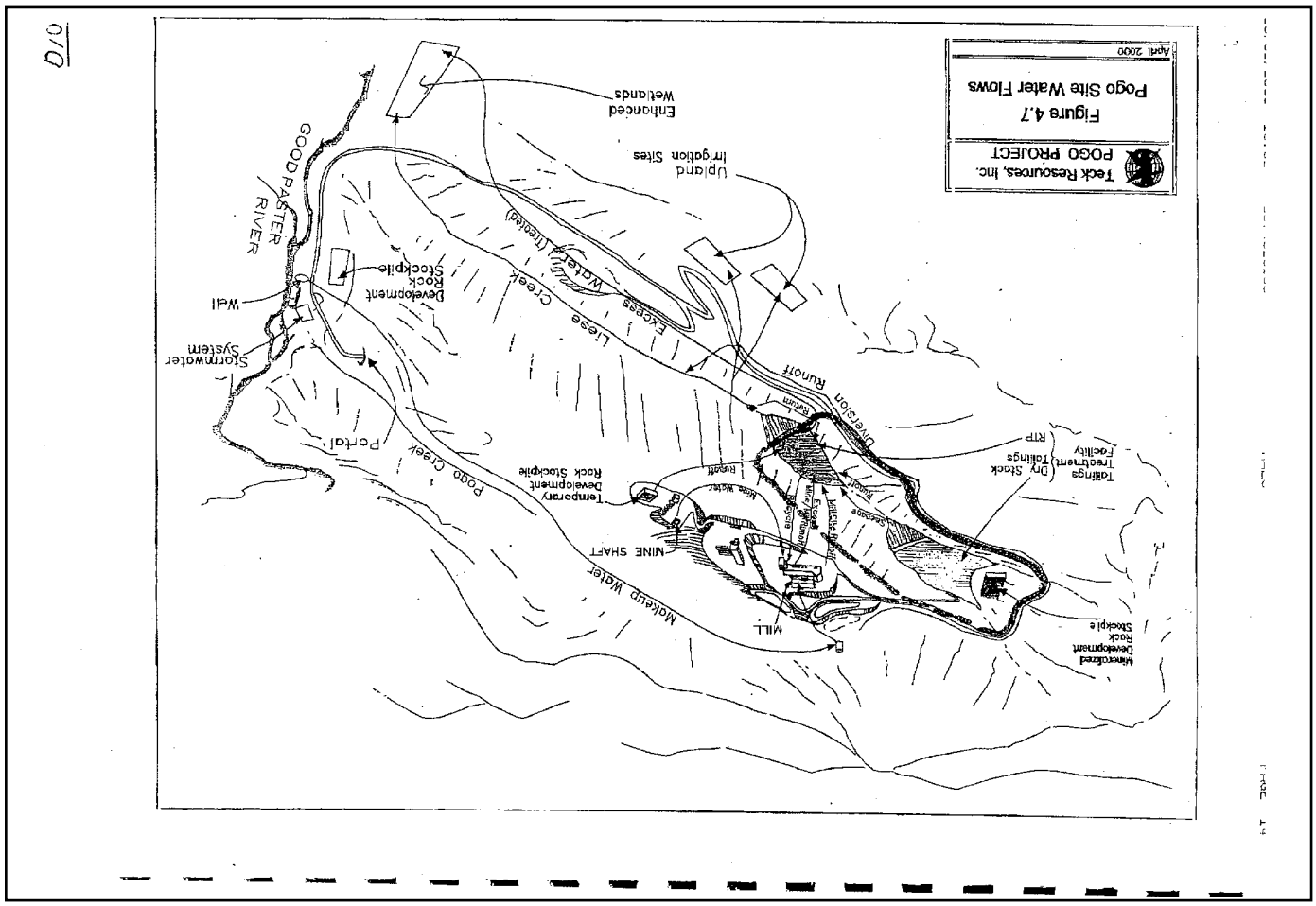
2. Dotted lines section-pink: There are several proposals for closing the WTF boundary line question below the mill site.

a. contour elevation to match opposing side.

b. construct a collection and diversion berm to ensure all mill site runoff is ran into the treatment facility from at single point.

c. there will be a road (purple dotted line Figure 4.2) around the entire waste treatment facility-what would it take to design it to act in a similar manner as the northern road/berm.


TECK RESOURCES INC.
POGO PROJECT
DETAILED PLANT SITE ARRANGEMENT
D-FIGURE 4.2
PLANT SITE
TAILINGS SITE
ORE BODY
LEGEND
SECTION
NAEC
05/01/2003 16:02 9074523100


Teck Resources, Inc.
POGO PROJECT
Figure 4.7
Pogo Site Water Flows
April 2000
Mineralized Development Rock Stockpile
MILL
Makeup Water
MINE SHAFT
Temporary Development Rock Stockpile
Pogo Creek
Portal
Tailings Treatment Facility
Dry Stack Tailings
RTP
Diversion Runoff
Excess Water (Treated)
Liese Creek
Development Rock Stockpile
Well
Stormwater System
GOOD PASTER RIVER
Upland Irrigation Sites
Enhanced Wetlands

COMMENT RESPONSE:

D10-1 The text in Appendix A, Section 1.2, that discusses the screening process for tailings disposal location has been redrafted to describe in further detail the analysis that was conducted to screen the location options to clearly demonstrate there were no reasonable disposal locations that would not impact wetlands.

D10-2 Changes to the dry-stack tailings facility construction plan have occurred since the Applicant's Proposed Project was described in Section 2.3 of the DEIS. The new plan, which details these changes, may be found in the COE 404 Public Notice contained in Appendix B of this FEIS.

In response to comments from the State of Alaska, the Applicant has proposed to augment the project's growth media balance by clearing, grubbing, and stockpiling the organic material from the dry-stack facility footprint. In addition, an erosion control/drainage blanket and under drain system consisting of nonmineralized rock would be placed within the footprint prior to placement of any tailings.

The COE regulates placement of dredge and or fill material into waters of the United States. Mechanized land clearing of wetlands is considered a discharge of fill material into those waters. Land clearing operations involving vegetation removal with mechanized equipment such as front-end loaders, backhoes, or bulldozers with sheer blades, rakes, or discs in wetlands; or windrowing of vegetation, land leveling, or other soil disturbances in wetlands, are considered placement of fill material and are regulated activities under COE jurisdiction. The placement of nonmineralized waste rock into cleared wetlands also would be regulated as placement of fill material into waters of the United States. Appendix B shows the volume of nonmineralized rock fill that would be placed into such waters.

A COE 404 permit may only be issued after the Applicant obtains a Certificate of Reasonable Assurance, or waiver of certification, from ADEC as required by Section 40l(a)(l) of the CWA. ADEC must certify that the State's water quality standards would not be violated.

Placement of the erosion control/drainage blanket in the dry-stack facility footprint would convert existing wetlands to uplands. Thus, tailings placed on the erosion control/drainage blanket would be placed in uplands. The COE does not regulate fill placement in uplands, and therefore no CWA Section 404 permit would be required for placement of dry-stack tailings. The tailings, however, would require a solid waste permit from ADEC.

An EPA NPDES permit for discharge of tailings would be neither required nor appropriate. Seepage collected from the dry stack would be directed from the under drain system to the RTP. All effluent discharges from the RTP would pass through the on-site treatment facility, and all water discharged from the treatment facility would be subject to effluent limits and other provisions of a NPDES permit.

D10-3 This issue will be addressed in ADEC's 401 Certification and EPA's response to comments with the final NPDES permit, both of which will be issued after publication of this FEIS.

D10-4 This issue will be addressed in ADEC's 401 Certification and EPA's response to comments with the final NPDES permit, both of which will be issued after publication of this FEIS.

D10-5 The reader is directed to the response to comment D4-13.

D10-6 The text in Section 2.3.8 (Waste Rock Storage) has been redrafted to reflect the comment.

D10-7 The discussion of development rock disposal in Section 4.3.2 has been redrafted to reflect the comment.

D10-8 Presenting an estimated schedule for disposal of mineralized development rock in the tailings dry stack is not considered reasonable at this time because there are many unknown factors that would make it of little practical value. All mineralized development rock brought to the surface and not immediately encapsulated in the dry stack would be stockpiled either on impervious geotextile layers on the valley floor below the existing 1525 Portal of the exploration adit (Figure 2.3-1 a), or temporarily within the dry stack footprint itself (Figure 2.3-1 e).

The only exception might occur below the existing 1525 Portal where the nonmineralized development rock is presently stockpiled. As this rock were used as fill material in the laydown area and for road construction, it would free up the existing engineered polypropylene lined pad and allow placement of additional mineralized development rock on the existing lined pad as temporary storage. If there were more mineralized rock than could fit on the existing lined pad, the excess mineralized rock would be temporarily stored immediately to the north of the existing lined pad and would be moved to the temporary stockpile within the overall footprint of the dry stack in upper Liese Creek within 2 years. It is projected that all mineralized rock would be encapsulated in the dry-stack tailings by year 7 of the project.

D10-9 Thank you for your comment.

D10-10 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

D10-11 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

D10-12 This issue will be addressed in ADNR's final decision for issuance of the competitive land lease which will occur after publication of this FEIS.

D10-13 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

D10-14 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

D10-15 This issue will be addressed in ADNR's final decision for issuance of the ROW, which will occur after publication of this FEIS.

D10-16 These suggestions will be addressed in ADEC's final decision for issuance of the waste disposal permit which will occur after publication of this FEIS.

D10-17 This issue will be addressed in ADEC's final decision for issuance of the waste disposal permit, which will occur after publication of this FEIS.

D10-18 This issue will be addressed in ADNR'S final Plan of Operations Approval, which will be issued after publication of this FEIS.

D10-19 This issue will be addressed in ADNR'S final Plan of Operations Approval, which will be issued after publication of this FEIS.

D11

Testimony of Resource Development Council
On Pogo Gold Mining Project
Fairbanks, Alaska
April 30, 2003

Good evening. My name is Bill Brophy, a member of the Resource Development Council. I am here tonight testifying on behalf of RDC.

The Resource Development Council supports the Preferred Alternative identified in the Draft Environmental Impact Statement, with the provision that the Alaska Department of Natural Resources adopts the Alternative Management Option for management of the Shaw Creek Hillside access road. RDC also endorses the draft NPDES permit and the draft Alaska Department of Environmental Conservation waste disposal permit. D11-1 D11-2 D11-3

RDC is a statewide business association which works closely with Alaska's basic industries, including tourism, fishing, oil and gas, mining and timber. RDC's membership includes individuals and companies from these industries, as well as from support sectors such as construction, labor and other technical service providers, Native corporations and local communities.

The Pogo project is good for Alaska, especially for the Interior where it will boost economic activity and generate hundreds of new construction and permanent year-round jobs. Pending receipt of necessary permits, Teck-Pogo is prepared to invest a quarter billion dollars to construct the underground mine and its related infrastructure. The project will bring new opportunities for Alaska businesses and residents and will help sustain a healthy and growing mining industry in the state.

D11

The Teck-Pogo operation has been designed in such a way as to minimize operational impacts on the environment. The project is designed to meet Alaska water quality standards and it will not degrade the water quality of the Goodpaster River.

Regarding the issue of public use of the Shaw Creek Hillside road, RDC believes it would be better to keep the road classified for industrial use only, while mining is occurring. The Alternative Management Option will lead to an increased margin of safety for the public during mining operations and it will result in reduced short-term impacts to subsistence and trapping, as well as wetlands from ORV use. D11-2

I [redacted] conclude by urging the EPA and the Alaska Department of Natural Resources to provide timely resolution of the permitting process so that the Pogo Gold Mine can move forward.

Thank you for the opportunity to provide comments regarding this important project.

COMMENT RESPONSE:

D11-1 Thank you for your comment.
D11-2 Thank you for your comment.
D11-3 Thank you for your comment.

D12

RESOURCE DEVELOPMENT COUNCIL

Growing Alaska Through Responsible Resource Development

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May 2, 2003

Hanh Gold
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Dear Ms. Gold:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Pogo Gold Mining Project near Delta, Alaska.

The Resource Development Council supports the Preferred Alternative identified in the DEIS, with the provision that the Alaska Department of Natural Resources adopts the Alternative Management Option for management of the Shaw Creek Hillside access road. RDC also endorses the draft NPDES permit and the draft Alaska Department of Environmental Conservation waste disposal permit. D12-1 D12-2 D12-3

RDC is a statewide business association which works closely with Alaska's basic industries, including tourism, fishing, oil and gas, mining and timber. RDC's membership includes individuals and companies from these industries, as well as from support sectors such as construction, labor and other technical service providers, Native corporations and local communities.

121 West Fireweed Lane, Suite 250, Anchorage, Alaska 99503-2035
Phone: 907/276-0700 Fax: 907/276-3887 Email: Resources@akrdc.org Website: www.akrdc.org

D12

The Pogo project is good for Alaska, especially for the Interior where it will boost economic activity and generate hundreds of new construction and permanent year-round jobs. Pending receipt of necessary permits, Teck-Pogo is prepared to invest a quarter billion dollars to construct the underground mine and its related infrastructure. The project will bring new opportunities for Alaska businesses and residents and will help sustain a healthy and growing mining industry in the state.

The Teck-Pogo operation has been designed in such a way as to minimize operational impacts on the environment. The project is designed to meet Alaska water quality standards and it will not degrade the water quality of the Goodpaster River.

Regarding the issue of public use of the Shaw Creek Hillside road, RDC believes it would be better to keep the road classified for industrial use only while mining is occurring. The Alternative Management Option will lead to an increased margin of safety for the public during mining operations and it will result in reduced short-term impacts to subsistence and trapping, as well as wetlands from ORV use. D12-2

In conclusion, RDC urges the EPA and the Alaska Department of Natural Resources to provide timely resolution of the permitting process so that the Pogo Gold Mine can move forward.

Thank you for the opportunity to provide comments regarding this important project.

Sincerely,

RESOURCE DEVELOPMENT COUNCIL
For Alaska, Inc.

Carl Portman
Deputy Director

COMMENT RESPONSE:

D12-1 Thank you for your comment.
D12-2 Thank you for your comment.
D12-3 Thank you for your comment.

D13

Alaska Support Industry
ALLIANCE
4220 'B' Street, Suite 200
Anchorage, AK 99503
Phone: (907) 563-2226
Fax: (907) 561-8870
www.akalliance.org

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THE ALLIANCE
... for responsible development of Alaska's Oil, Gas & Mineral Resources

April 22, 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

RE: POGO Gold Mining Project

Dear Mr. Gold:

The Alaska Support Industry Alliance more widely known as the Alliance is a non-profit state-wide trade association with chapters in Anchorage, Fairbanks and Kenai. The Alliance is comprised of over 420 member companies who derive their livelihood from Alaska's oil, gas and natural resources industries. The employment base represented by Alliance membership exceeds is over 25,000 Alaska residents.

The membership of the Alaska Support Industry Alliance endorses the Preferred Alternative identified in the Draft EIS, with the provision that the Alaska Department of Natural Resources adopts the Alternative Management Option for management of the Shaw Creek Hillside access road. D13-1

Pending receipt of permits, Teck-Pogo will invest over $250 million to begin construction of the underground mine. Teck-Pogo estimates that the Pogo Gold Mine will generate 500 new jobs during the first two years of construction and over 300 permanent year-around jobs during its proposed 11 years of operations. The Pogo project will be a major benefit to Interior Alaska as it will boost economic activity at a time when the state is approaching significant fiscal uncertainty. D13-2

We believe **the Alternative Management Option** for the Shaw Creek Hillside Road will result in increased safety for the general public and reduced short term impacts to subsistence living and impacts to wetlands from ORV use.

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D13

Pogo Gold Mining Project
Page 2

We urge EPA and Alaska DNR to provide a timely review and resolution of the permitting process so that the Pogo Gold Mine project can move forward.
Thank you for your time and this opportunity to provide public input on behalf of the Alaska Support Industry Alliance. Should you have any questions please do not hesitate to contact The Alliance office at 907-563-2226.

Sincerely,

Larry J. Houle
General Manager

cc: Karl Hanneman
Teckcominco
3520 International Street
Fairbanks, AK 99701

COMMENT RESPONSE:

D13-1 Thank you for your comment.

D13-2 Thank you for your comment.

D14

TOK COMMUNITY UMBRELLA CORPORATION
An Alaska Nonprofit Corporation
RESOLUTION OF THE BOARD OF DIRECTORS 03-06

THE BOARD OF DIRECTORS of the Tok Community Umbrella Corporation, held a board meeting on April 10, 2003 @7:30 P.M. in Tok, Alaska. A quorum of the board was present.

Whereas: This Corporation is organized exclusively for the promotion of social welfare as described in the Internal Code of 1954. The corporation will operate primarily to further the common good and general welfare of all the people of the community of Tok.

A RESOLUTION of the Board of Directors of the Tok Community Umbrella Corporation regarding support for future development of Teck-Pogo Inc for the development and operation of the Pogo Mine.

THE BOARD OF DIRECTORS of the Tok Community Umbrella Corporation hereby takes the following action:

Whereas: Tech-Pogo Inc representative conducted a public meeting in Tok this month;

Whereas: Tech-Pogo intent to employ 500 local people during the two years of construction with 300 local people employed year round for the 10 year life of the project;

Whereas: Tech-Pogo's policy is to hire local people and provide all the training needed for employment at the mine and operations;

Whereas: Tech-pogo company policy is a drug and alcohol free work environment they are willing to invest in the communities for drug and alcohol programs;

Whereas: Tech-Pogo intends to build 49.5-mile road into the mine and return it back to the State after operation of the mine ceases;

Whereas: Tech-Pogo pans to invest $250 million to begin construction by the end of 2003 for a new underground gold mine on state land 38 miles northeast of Delta Junction;

Whereas: The "Alternative Management Option" on the management of the road will;

a. increase safety for the public
b. reduce short term impacts to subsistence, trapping and commercial recreation
c. reduce short term impacts to wetlands from ORV use
d. Increase revenue to State from right-a-ways fees
e. Increase revenue to State from material sales
f. Increase revenue to State from timber sales
g. No change to existing public access to region

Whereas: Future development of an economic platform is limited

Whereas: The community as a whole supports the development of the project.

D14

1. THEREFORE LET IT BE RESOLVED:
Tok Community Board of Directors believes it is in the best interest of the community to support the future development of the road under the "Alternative Management Option" for Tech-Pogo Mine. D14-1

2. THEREFORE LET IT BE RESOLVED
Tok Community Board of Directors believes it is in the best interest of the community to support a timely development of the road and Pogo Mine. D14-2

Dated this 10th Day of April 2003, Tok, Alaska.

Debra A Muir, President

I, the undersign do hereby certify:
1. That I am the duly elected and acting secretary of Tok Community Umbrella Corporation, and:
2. That the forgoing Resolution represents action taken at the regular board meeting of the Tok Community Umbrella Corporation, held on April 10, 2003.
IN WITNESS WHEREOF, I have hereto subscribed my name and affixed the seal of the corporation.

Kathy Morgan, Secretary

COMMENT RESPONSE:

D14-1 Thank you for your comment.

D14-2 Thank you for your comment.

D15

Stephen Tack
<sltack63@hotmail.com>
05/14/2003 02:20 AM

To: Hanh Gold/R10/USEPA/US@EPA
cc:
Subject: Fwd: RE: Tech-Pogo DEIS comments

>From: Bill Ridder <bridder@wildak.net>
>Reply-To: "bridder@wildak.net" <bridder@wildak.net>
>To: "'Stephen Tack'" <sltack63@hotmail.com>
>Subject: RE: Tech-Pogo DEIS comments
>Date: Tue, 13 May 2003 20:31:42 -0800
>
>Steve,
>Sounds good. Except for one key point. For safety. Don't you think that
>public access should be controlled for the entire road for the life of the
>mine? Public interference with mine traffic poses a very real potential
>hazard to the environment. Plus, it would decrease the state's profit from
>access fees. Keeping the road open would necessitate funds from the state
>to provide safety and management, such as pull off's, two lane bridges,
>trash pick up, etc.
>
>Bill
>
>-----Original Message-----
>From: Stephen Tack [SMTP:sltack63@hotmail.com]
>Sent: Tuesday, May 13, 2003 2:44 PM
>To: bridder@wildak.net
>Subject: Tech-Pogo DEIS comments
>
>We appreciate the opportunity to comment on the draft EIS for the Tech-Pogo
>mine project. Our group is very concerned that this project not damage the
>Goodpaster River or Shaw Creek in any way. The Goodpaster River is one of
>the finest Arctic Grayling streams in Interior Alaska and is also an
>important king and chum salmon spawning stream. Shaw Creek is an important
>grayling spawning stream as well as providing summer feeding habitat and
>some overwintering habitat. Though many aspects of such a large and
>complex
>project can potentially degrade the aquatic habitat or impact the fish
>resource directly, we feel that the draft EIS did a good job of
>recognizing
>these dangers and addressing them.
>
>There are two situations, however, that we would like to add additional
>support to:
>
>1. We are concerned about the potential impact of road crossings of the
>major tributaries of Shaw Creek. The findings in the EIS indicate that
>Caribou Creek is an important grayling spawning stream, but little seems to
>be known about the other tributaries, Rosa, Keystone, and Gilles Creeks.
> We
>would like to reinforce the indication in the EIS that bridges be used to
>cross these and any other large streams and that the work is done so as not
>to interfere with the movement of grayling into these streams during spring
>breakup and associated high flows. We also strongly support limiting the
>public access at Gilles Creek, and removing the road beyond Gilles Creek
>when commercial work has ended beyond this point.
>
>2. The second situation involves remediation of the barrow pits. There is
>an an opportunity here to develop one or more of the most accessible pits
>as

D15-1

D15-2

D15-3

D15

>stockable fishing lakes if they were contoured properly and on public land.
>We would like to see a requirement for at least one pit to be so developed
>as part of this project.

D15-3 cont'd.

>In contrast, the pits in the Goodpaster flood plain present a considerable
>hazard to rearing fish during high water events. The EIS passes this off a
>minor problem "because most salmon and grayling spawning occurs below the
>mine site". This may be true of salmon, but there is many miles of river
>above the mine in which grayling spawn.
>. We wonder if there isn't a better way to remediate these pits than just
>abandoning them. We would like to see consideration of the effects of
>opening a river channel through the pits. We would like to see a discussion
>of this option involving ADF&G and DNR.

D15-4

>
>Respectfully submitted by
>Stephen L Tack, for the board of directors of the Midnight Sun Chapter of
>Trout Unlimited
>
>_____
>The new MSN 8: advanced junk mail protection and 2 months FREE*
>http://join.msn.com/?page=features/junkmail
>
_____
Add photos to your e-mail with MSN 8. Get 2 months FREE*.
http://join.msn.com/?page=features/featuredemail

COMMENT RESPONSE:

D15-1 Rosa (two crossings), Keystone, and Gilles creeks will be bridged. The reader is referred to Section 2.3.3 (Access).

D15-2 Thank you for your comment.

D15-3 This suggestion will be considered by ADNR for its final Plan of Operations Approval, and final decision on Competitive Material Sale, which will be issued after publication of this FEIS.

D15-4 The Section 4.8.2 gravel source discussion describes potential impacts to fish from high water events, and identifies mitigation measures to reduce such impacts. The agencies are working to evaluate specific mitigation measures to address fish entrapment in the gravel pits during high water. Such measures will be considered by ADNR for its final Plan of Operations Approval, which will be issued after publication of this FEIS.

Appendix E.E

Response to Comments on Draft EIS

Municipal Government Comments

MAY-20-2003 TUE 08:51 AM EPA OFFICE OF WATER FAX NO. 2065530185

05/19/2003 14:15 9078954375 DELTA JCT ALASKA E1

City of Delta Junction
Alaska 99737
907 - 4656
The Northernmost Mile of the Alaska Highway

POGO GOLD MINE RESOLUTION

RESOLUTION 2003-03

A RESOLUTION SUPPORTING PERMITTING AND CONSTRUCTION OF THE POGO GOLD MINE

WHEREAS, Teck-Pogo, Inc. has worked closely and cooperatively with the City of Delta Junction and the Delta community concerning its proposed new gold mine; and

WHEREAS, Teck-Pogo, Inc. has demonstrated a desire to be a real asset to Delta through such efforts as a production work schedule that will encourage the miners and their families to live in the Delta to Fairbanks area through a 4 day on, 4 day off work shift schedule; and

WHEREAS, Delta's motto is "the friendly frontier", the City covets jobs for our current residents and anticipates welcoming an influx of hard working miners and their families to become Deltans too.

NOW THEREFORE BE IT RESOLVED THAT, the City of Delta Junction generally supports the Agency Preferred Alternative with the two following suggestions:

1.) The City takes no position concerning the mining road use or access other than to advocate availability of the road for timber operations on the adjoining State forest lands. E1-1

Received May-20-03 07:50am From-2065530185 To-YUKON PACIFIC CORP Page 02

MAY-20-2003 TUE 08:51 AM EPA OFFICE OF WATER FAX NO. 2065530185

05/19/2003 14:15 9078954375 DELTA JCT ALASKA E1

City of Delta Junction
Resolution 2003-03
May 6, 2003
Page 2

2.) The City suggests that the employee bus station be located on the Richardson Highway to hold down noise, dust and traffic for the benefit of Shaw Creek Road residents, and for safety reasons entering and leaving the Highway, and to reduce road maintenance needs. E1-2

AND BE IT FURTHER RESOLVED, that the permitting Agencies are hereby encouraged to speedily grant the necessary permits and leases so that the Pogo gold mine can become reality. E1-3

PASSED AND APPROVED by a duly constituted quorum of the City Council this 6th day of May, 2003.

SIGNED: Roy Gilberson, Mayor ATTEST: Patricia E. White, City Clerk

COMMENT RESPONSE:

E1-1 Thank you for your comment.

E1-2 Thank you for your comment.

E1-3 Thank you for your comment.

Received May-20-03 07:50am From-2065530185 To-YUKON PACIFIC CORP Page 03

Appendix E.F

Response to Comments on Draft EIS
Legislator Comments

F1

STATE OF ALASKA

Interim:
119 North Cushman, Rm. 205
Fairbanks, Alaska 99701
(907) 456-7423
Fax: (907) 451-9293

Session:
State Capitol Building
Juneau, Alaska 99801
(907) 465-3466
Fax: (907) 465-2937

REPRESENTATIVE JIM HOLM
DISTRICT 9

April 30, 2003

RECEIVED
MAY - 5 2003
U.S. EPA REGION 10
OFFICE OF WATER

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Dear Mr. Gold,

This letter is to express my support for the Pogo gold mine project in Interior Alaska and to urge resolution of the permit process in a timely manner. F1-1

I endorse the "Agency Preferred Alternative" in the Draft EIS, with the provision that DNR adopt the "Alternative Management Option" for management of the access road. F1-2

Anything that can be done to expedite the permitting process will be greatly appreciated.

Sincerely,

Representative Jim Holm
JH/bc

COMMENT RESPONSE:

F1-1 Thank you for your comment.

F1-2 Thank you for your comment.

Toll Free: 1-866-465-3466
Representative_Jim_Holm@legis.state.ak.us
Official Business

F2

Alaska State Legislature

SESSION/ INTERIM OFFICE
State Capitol Building
Juneau, Alaska 99801-1182
Phone: 907-465-4527
Fax: 907-465-2197
Toll Free: 800-491-4527

INTERIM DISTRICT OFFICE
P.O. Box 798
Tok, Alaska 99780
Phone: 907-883-2669
Fax: 907-883-2670

Representative Carl M. Morgan, Jr.
District 6

April 11, 2003

RECEIVED
U.S. EPA REGION 10
OFFICE OF WATER

Mr. Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

Dear Mr. Fogels:

The following are my comments on management of the preferred access road route, to a new underground gold mine on state land, adjacent to Shaw Creek located south of Fairbanks and 38 miles northeast of Delta Junction.

After reviewing the summary of management options for the road, I recommend the "ALTERNATIVE MANAGEMENT OPTION" be adopted by the Department of Natural Resources. It is clear that the alternative management option will provide increased safety for the public while reducing state and corporate liability, reduce the short term impacts to subsistence, trapping and commercial recreation, and reduce short term impacts to wetlands from recreational vehicle use. Further, this option will increase revenue to the State for right-of-way fees, and from timber sale receipts. F2-1

An expedited decision by DNR to allow the Pogo Mine Project to become a reality in 2003 will provide an economic boon to the region through new jobs, and provide new revenues to the State of Alaska.

Sincerely,

Carl M. Morgan, Jr.
Alaska State Representative

cc: Hanh Gold, NEPA Compliance Coordinator

COMMENT RESPONSE:

F2-1 Thank you for your comment.

F3

GARY WILKEN
SENATOR
West Fairbanks

Interim:
1851 Fox Ave.
Fairbanks, Alaska 99701
Tel: (907) 451-4347
Fax: (907) 456-8163

Alaska State Legislature
Senate

During Session:
State Capitol Building
Juneau, Alaska 99801-1182
Tel: 451-5301 (from Fbks)
Tel: (907) 465-3709 (outside Fbks)
Fax: (907) 465-4714
Website: www.garywilken.com
E-Mail: Senator_Gary_Wilken@legis.state.ak.us

March 31, 2003

U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, WA 98101

Dear Pogo Gold Mine DEIS staff,

I reviewed with interest the executive summary of the *Draft Environmental Impact Statement for the Pogo Gold Mine Project*, Delta, Alaska. The project applicant, Teck-Pogo, Inc., proposes to develop an underground gold mine on State of Alaska land in the Goodpaster River Valley approximately 38 miles northeast of Delta Junction in Interior Alaska. The capital cost of the gold mine project is estimated at $200 million to $250 million and, with the known reserves, the mine's operating life is estimated at approximately 11 years.

At the present time, residents living in or near the mine's closest communities, Delta Junction and Tok, are not required to financially support their local schools as these communities do not have taxing authority. Over 80,000 Alaskans reside in villages or communities that do not contribute any financial help to their schools, but instead receive all their local education funding from the State of Alaska. F3-1

While some areas of the state do not have the financial wealth to help support their local school districts, the Delta Junction/Tok region has been identified as a financially stable area with the necessary wealth to help support K-12 public education. On February 19, 2003 the Local Boundary Commission (LBC), a constitutionally created commission that considers local government boundary changes, highlighted seven local areas in Alaska's unorganized borough that

Home of the
University of Alaska

F3

meet the statutory standards for borough incorporation. The LBC determined that the Upper Tanana Basin Model Borough, encompassing Delta Junction and Tok, meet the economic capacity, population and stability, and regional commonality standards for borough incorporation.

The pivotal question concerning the formation of this new regional government is not "if" but "when." The Delta Junction/Tok area of the state will incorporate as a local borough and the residents of this area will join 87 percent of all Alaskans who financially support their local school district. As a profitable venture within the future borough, the Pogo Gold Mine will be expected to help pay its fair share to the local school district, as do other resource extraction projects in Alaska. I respectfully suggest that this prospective expense be calculated into the Pogo Gold Mine's business plan. As a good cooperate neighbor, Teck-Pogo, Inc. would desire nothing less than to help support the region's local schools. F3-1 CONT'D.

Thank you for the opportunity to comment on this draft environmental impact statement.

Sincerely,

Gary Wilken
Senator, Fairbanks

Cc: Mr. Karl Hanneman

COMMENT RESPONSE:

F3-1 Thank you for your comment.

MAY-08-03 THU 03:33 PM FAX NO. 2698904

F4

GARY WILKEN
SENATOR
Fairbanks

Interim:
1851 Fox Ave.
Fairbanks, Alaska 99701
Tel: 451-5501 (from Fbks)
Tel: (907) 465-3709 (outside Fbks)
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Alaska State Legislature
Senate

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Fax: (907) 465-4714
Website: www.garywilken.com
E-Mail: Senator.Gary.Wilken@legis.state.ak.us

April 30, 2003

Honorable Tom Irwin, Commissioner
AK Dept. of Natural Resources
400 Willoughby Ave, 5th Floor
Juneau, Alaska 99801-1724

Dear ~~Commissioner~~ TOM Irwin,

I'm writing in support of the "Alternative Management Option" as offered by DNR for management of the haul road used by the Pogo Mine Project.

I believe we are all in agreement that this is a very worthwhile project to expand Alaska's economy via resource extraction. Clearly a critical component to the mine's functionability is the haul road used to transport ore. Pogo-Tech is investing a substantial amount of resources into this project, including the fees necessary to secure the rights of way for the road and power line. Given the intended scope, size, and purpose of the haul road, opening it for public use could potentially seriously hinder the mine's ability to perform, expose the area to unwanted environmental risks, and especially increase the risk of endangerment should traffic on this road be any more than that authorized by the Mine itself. F4-1

It's reasonable to conclude that given the purpose and condition of this industrial haul road, and in the best interests of public and environmental safety, we should allow the Pogo Mine to complete the job it has set out to do before we open this road to public use.

Thank you very much for your consideration.

Sincerely Yours,

Gary Wilken
State Senator, Fairbanks

Commissioner's Office
MAY 0 2 2003
Department of
Natural Resources

Cc: Mr. Karl Hanneman, Teck-Pogo, Inc.

Golden Heart of Alaska

COMMENT RESPONSE:

F4-1 Thank you for your comment.

Appendix E.G

Response to Comments on Draft EIS
Agency Comments

G1

DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

MAY 13 2003

Ms. Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Colonel Jerry I. Siegel
Commander, 611 Air Operations Group
9480 Pease Avenue, Ste 102
Elmendorf AFB, AK 99506-2100

Dear Ms. Gold

As the airspace director for 11th Air Force in Alaska, we are sensitive to land management issues involving activity below the military training airspace in which we use. The Pogo mine lies in the southern portion of Yukon 1 Military Operations Area (MOA), classified by the FAA as Special Use Airspace. We have been working closely with Teck-Pogo management staff for over four years with respect to managing our training operations in the mine's vicinity. We are writing to comment favorably to the Draft Environmental Impact Statement (EIS), with the preferred alternative as modified and outlined in the State of Alaska's Department of Environmental Resources letter dated April 4, 2003.

Building a road will reduce the air traffic support currently required. We understand that once completed, air re-supply sorties will be reduced to approximately two per week. This will greatly reduce the likelihood of conflicts and will offer their support pilots greater opportunity to use our Special Use Airspace Information Service to facilitate deconfliction.

However, we have one concern. The modified alternative will keep the first 23 miles of road open after the mine ceases operations. We understand and endorse the need for roads in our state. We don't have many. However, the Department of Defense and the Air Force in particular are facing training airspace encroachment issues all over the country (as evidenced by congressional testimony given on 1 Apr 03). This road will offer greater access to that part of the state for recreation, etc. With it will likely come noise complaints about our training activity. The remaining road will lie beneath the Birch MOA (floor 500' above ground) and Yukon 1 MOA (100' above the ground). The Alaska MOA EIS Record of Decision, 1 Apr 1997, levied several mitigated areas in this area on our training operations (Pogo mine was not one of them). Please remind the State of Alaska that we will work with them through established inter-agency processes, but it will be difficult to add any more mitigation to the training airspace should it ever be requested. Our national defense readiness will be impacted if we continue to add restrictions to the airspace. G1-1

Thank you for the opportunity to comment. This project is a worthy endeavor for the people of our state and it's economy. My staff has visited the mine site and can attest to the professionalism and environmental stewardship that Teck-Pogo staff possess. My point of contact is Captain Gary Rolf, (907) 552-4056, gary.rolf@elmendorf.af.mil.

Sincerely,

JERRY I. SIEGEL, Colonel, USAF

cc:
11 AF/CV
611 ASG/CC
AAL-500
AAL-530
AAL-004
HQ AF XOO-CA

COMMENT RESPONSE:

G1-1 Thank you for your comment.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

G2

May 19, 2003

RECEIVED
MAY 21 2003

Hanh Gold
NEPA Compliance Coordinator
US Environmental Protection Agency
1200 Sixth Ave. OW-130
Seattle, WA. 98101

Dear Ms. Gold:

The National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement for the Pogo Gold Mine Project. NMFS review was focused on Appendix F.3, the Draft Essential Fish Habitat Assessment (DEFHA). NMFS concurs with the Environmental Protection Agency's (EPA) Assessment that "On the basis of the scope and nature of impacts expected from the project and mitigation measures identified above, no substantial adverse individual or cumulative effects of EFH are expected in the project area." NMFS supports the special conditions in the DEFHA proposed by EPA. Please contact Larry Peltz at (907) 271-1332 if you have any questions. G2-1

Sincerely,

Jonathan M. Kurland
Assistant Regional Administrator
for Habitat Conservation

COMMENT RESPONSE:

G2-1 Thank you for your concurrence.

ALASKA REGION - www.fakr.noaa.gov

G3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
ALASKA OPERATIONS OFFICE
Room 537, Federal Building
222 W. 7th Avenue, #19
Anchorage, Alaska 99513-7588

April 22, 2003

MEMORANDUM

SUBJECT: Pogo Mine DEIS

FROM: Cindi Godsey
Alaska Mining Coordinator

TO: Hanh Gold
NEPA Compliance

The table below contains comments on the identified sections of the DEIS. The second table contains corrections and typographical errors that were noted as I read the document.

Page/Section	Issue Comments	
S-18/¶6 and 5-29/Direct Discharge	ADEC is not going to adopt a higher MCL for iron. What is actually pending is the removal of the applicability of secondary drinking water MCLs to the WQS. (There are several references to this topic in Chapter 4 that got it right).	G3-1
1-11/1.7.1	This section states how EPA and ADNR will use the EIS but not the Corps.	G3-2
1-12/ Storm water	Section 402 of the CWA is not applicable to non-point sources. Even though it may not seem to be, by definition storm water is a point source subject to 402(p).	G3-3

Printed on Recycled Paper

2

3-5	Goodpaster section page 3-4 says that the Goodpaster near the mouth is slow but has a relatively deep main channel but then on page 3-5, it says it is slow but relatively shallow Also page 3-5 says that the river has a well-established channel but on 3-4, and again on 3-62 (3.13.1 ¶1), it talks about the lower reaches becoming multi-channeled and highly meandering	G3-4
4-8	Tailings Disposal section discussion is present about the dam possibly overtopping 22 times in 1000 years but it doesn't mention the possibility of its overtopping 45 times in 1000 years as it does on page 2-58 and again on 4-45 The 45 times is attributed to the use of the off-river treatment works because there would be times that the river flow would be too low to withdraw water but it doesn't seem to account for the use of well water in the mixing chamber as stated would be done during low flows on page 2-58, ▹1, ✦5	G3-5
4-19/4.2.5 ▹1	says that a certain alternative would not cause impacts to WQ - but this isn't the WQ section, it is the groundwater section and the next ▹ talks about impacts to groundwater rather than to WQ	G3-6
4-41	Water Discharge/Development Phase section states "not suitable for anadromous fish spawning" but the WQS at 18 AAC 70.255(h) says "For streams and rivers, or other flowing fresh water subject to (e)(3) of this section, a mixing zone will not be authorized in an area of (1) anadromous fish spawning; or (2) resident fish spawning redds for Arctic grayling, northern pike, . . ." Is the area not suitable for any type of spawning or only anadromous spawning? Because if it would be suitable for resident fish spawning redds then a mixing zone wouldn't be allowed. This is also an issue with Alternative 3 on page 4-90.	G3-7

3

4-45/4.3.5	Last line "the cumulative impacts of additional mines would be low" should be changed to "the cumulative impacts of additional mines in compliance with the proper permits would be low"	G3-8
4-170 ¶3	this says that the shift change would entail 2 - 30 minute periods but in the noise section (last ¶ of page 4-62) it says "each of the hour-long periods" when discussing shift change	G3-9

Page/Section	Typographical Comments	
S-18/¶2	visual impacts would removed	G3-10
S-18/¶4	"underground well injection" should probably be underground injection well	G3-11
S-20/¶5	interruptions for remainder of year	G3-12
1-1/¶3	mentions the road twice (at least it is the same length both times)	G3-13
1-2/1.3 ¶4	In late 1997, The applicant	G3-14
	pages 1-4 and 1-6 are blank	G3-15
2-13 ¶3	44 and 70 fights per week (pretty rough place!)	G3-16
2-20 ¶1	dry-tack	G3-17
2-31/2.3.14	root wads, and, growth media	G3-18
2-70	text for section 2.5.1 ends without punctuation - is there more?	G3-19
3-1/3.1.2	I know that terrane and terrain mean the same thing but should one spelling be used throughout the document - both are used	G3-20
3-3/¶2	looks and reads like a line of text may be missing	G3-21
3-36	Goodpaster River Valley section ¶1 contains a font change	G3-22

4

Page/Section	Typographical Comments	
3-40/3.9.2 ¶1	Noise levels for general mining operations noise levels used in this analysis are stated as sound pressure levels	G3-23
/3.9.3 ¶2	approximately3	G3-24
3-43 top	ATVs) (both recreational - there is no opening (on the previous page to match with the closing one after ATVs	G3-25
3-72/¶2	Tech-Pogo	G3-26
3-97/¶1	activity military personal (perhaps active military personnel?)	G3-27
¶3	(those that draws new money . . .)	G3-28
3-103	Education section the text states that the Healy Lake School was K-9 but the table says it was K-12	G3-29
3-158	Tanana River section offers salmon, , grayling	G3-30
4-9	Mill & Camp section "discharge of Liese Creek" should it be "flow?"	G3-31
4-20/4.3.1 ¶2	into Shaw Creek or tributary could - "a tributary"	G3-32
4-35	Disposition section ▹2 BMPs instead of BMPS	G3-33
4-69	Contributions to Abundance . . . section Similarly, dust, particles	G3-34
4-87/4.8.1	Routine and accidental spills of petroleum products - since when are spills routine?	G3-35
4-92 ¶4	process faculties	G3-36
4-95/4.9.1	✦ Habitat - development pf residential	G3-37

5

Page/Section	Typographical Comments	
4-118	Delta Area Housing ¶3 150 personnel . . . including 50 military and 150 civilian -- another look at the numbers may be in order.	G3-38
4-123	Delta Area Public Services ¶3 "population, according data published"	G3-39
4-125	Socioeconomic Impacts . . . Borough ¶2 "$3million $4million in payroll"	G3-40
4-129	Last ¶ in Borough Formation "Fairbanks North Star, , Denali, and Matanuska-Susitna"	G3-41
4-163/4.16.3	Alternative 2 Power Supply "semi-primitive mororized"	G3-42
4-182/4.19.2	▹ 1 - measures that would used to build	G3-43
4-183/4.20.1	"substitute resources of environment" should "of" be "or"?	G3-44

COMMENT RESPONSE:

G3-1 The text in the Summary and Section 5.2.2 has been changed to reflect the comment.

G3-2 Text has been added to Section 1.7.1 to reflect the comment.

G3-3 Text in Section 1.7.2 has been redrafted to reflect the comment.

G3-4 Text in Section 3.5.1 has been redrafted to reflect the comment.

G3-5 Discussion of overtopping 45 times in 1000 years is not appropriate in Section 4.1.2 because this section describes the Applicant's Proposed Project and not the off-river treatment works. A discussion of overtopping 45 times in 1000 years is appropriate, however, in Section 4.1.3, and such a discussion has been included there.

The use of supplemental groundwater for addition to the off-river-treatment works process was not included in the frequency estimate of RTP overtopping. Using supplemental groundwater for dilution in the treatment works would allow a greater overall volume of water to be discharged during low flows in the Goodpaster River. Hence, the estimate of the RTP over topping 45 times in 1000 years for this discharge option is conservative.

G3-6 Text in Section 4.2.5 has been redrafted to reflect the comment.

G3-7 Text in Sections 4.3.3 and 4.8.3 has been redrafted to reflect the comment.

G3-8 Text in Section 4.3.5 has been redrafted to reflect the comment.

G3-9 Text in Section 4.17.4 has been redrafted to reflect the comment.

G3-10 Text in Section S.12.2 has been redrafted to reflect the comment.

G3-11 Text in Section S.12.2 has been redrafted to reflect the comment.

G3-12 Text in Section S.12.3 has been redrafted to reflect the comment.

G3-13 Text in Section 1.1 has been redrafted to reflect the comment.

G3-14 Text in Section 1.3 has been redrafted to reflect the comment.

G3-15 This has been corrected in the FEIS.

G3-16 Text in Section 2.3.3 has been redrafted to reflect the comment.

G3-17 Text in Section 2.3.9 has been redrafted to reflect the comment.

G3-18 Text in Section 2.3.14 has been redrafted to reflect the comment.

G3-19 Text in Section 2.5.1 has been redrafted to reflect the comment.

G3-20 Text in Sections 3.1.2 and 3.17.1 has been redrafted to reflect the comment.

G3-21 Text in Section 3.5 has been redrafted to reflect the comment.

G3-22 Font in Section 3.7.3 has been changed to reflect the comment.

G3-23 Text in Section 3.9.2 has been redrafted to reflect the comment.

G3-24 Text in Section 3.9.3 has been redrafted to reflect the comment.

G3-25 Text in Section 3.9.5 has been redrafted to reflect the comment.

G3-26 Text in Section 3.13.1 has been redrafted to reflect the comment.

G3-27 Text in Section 3.16.2 has been redrafted to reflect the comment.

G3-28 Text in Section 3.16.2 has been redrafted to reflect the comment.

G3-29 Table 3.16-12 has been changed to reflect the comment.

G3-30 Text in Section 3.21.1 has been redrafted to reflect the comment.

G3-31 Text in Section 4.1.2 has been redrafted to reflect the comment.

G3-32 Text in Section 4.3.1 has been redrafted to reflect the comment.

G3-33 Text in Section 4.3.2 has been redrafted to reflect the comment.

G3-34 Text in Section 4.6 has been redrafted to reflect the comment.

G3-35 Text in Section 4.8.1 has been redrafted to reflect the comment.

G3-36 Text in Section 4.8.3 has been redrafted to reflect the comment.

G3-37 Text in Section 4.9.1 has been redrafted to reflect the comment.

G3-38 Text in Section 4.11.1 has been redrafted to reflect the comment.

G3-39 Text in Section 4.11.4 has been redrafted to reflect the comment.

G3-40 Text in Section 4.11.4 has been redrafted to reflect the comment.

G3-41 Text in Section 4.11.5 has been redrafted to reflect the comment.

G3-42 Text in Section 4.16.3 has been redrafted to reflect the comment.

G3-43 Text in Section 4.19.2 has been redrafted to reflect the comment.

G3-44 Text in Section 4.20.1 has been redrafted to reflect the comment.

G4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

May 13, 2003

Reply To Attn Of: CEJ-164

FROM: Susanne Salcido
Environmental Justice Coordinator
Office for Civil Rights, Enforcement and Environmental Justice

TO: Hanh Gold
Environmental Engineer
Office of Water

Subject: Draft Environmental Impact Statement for the Pogo Gold Mine Project

I have reviewed the Pogo Gold Mine Project Draft Environmental Impact Statement (DEIS) for its compliance with Environmental Justice issues. I also reviewed the document in conjunction with the original comments on the Preliminary Draft Environmental Impact Statement (PDEIS) reviewed by Mike Letourneau, formerly of this Office.

Mr. Letourneau commented that the PDEIS needed to provide the rationale for identifying the Native American, Russian and Korean populations as minority and/or low income populations. Our review indicates that this was addressed adequately in the DEIS. G4-1

Mr. Letourneau commented that the PDEIS needed to assure that the concerns expressed by those that will be impacted are reflected in the proposed alternatives and mitigation measures, to guarantee that Environmental Justice concerns are properly addressed. Our review indicates that this was addressed adequately in the DEIS. G4-2

Mr. Letourneau commented that the PDEIS needed to provide additional definitions of subsistence, from federal agencies and Native American communities, because additional definitions will help assure the reader that the impacts on communities that rely on subsistence activities, have been properly identified and addressed. Our review indicates that this was addressed adequately in the DEIS. G4-3

If you have any questions regarding these comments, or need additional information, please feel free to contact me at extension 3-1687.

COMMENT RESPONSE:

G4-1 Thank you for your comment.
G4-2 Thank you for your comment.
G4-3 Thank you for your comment.

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United States Department of the Interior
Fish and Wildlife Service
FAIRBANKS FISH AND WILDLIFE OFFICE
101 12th Ave., Box 19, Room 110
Fairbanks, Alaska 99701
May 9, 2003

RECEIVED
U.S. EPA REGION 10
OFFICE OF WATER

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Re: Draft Environmental Impact Statement for Pogo Gold Mine

Dear Ms. Gold:

The U.S. Fish and Wildlife Service has reviewed EPA's Draft Environmental Impact Statement (DEIS) for the Pogo Gold Mine Project. Teck-Pogo Inc. proposes to develop the underground Pogo Mine on State of Alaska land in the Goodpaster River valley approximately 38 miles northeast of Delta Junction, Alaska. The geologic resource of the mine is approximately 5.6 million ounces of gold. The proposed mine would use crushing, grinding, gravity concentration, floatation, and cyanide leaching processes to extract the gold. The tailings would be placed back underground and in an engineered disposal area in the Liese Creek valley. The mine would operate 24 hours a day, 365 days a year. Mine development is projected to begin in fall, 2003 with construction lasting approximately 2 years and have an operating life of approximately 11 years. At the end of mine life, Teck-Pogo proposes to seal and reclaim the mine. The Agency Preferred Alternative combines the mine access route and powerline from Alternative 2 (the Shaw Creek Hillside All-Season Road) and the water treatment system from Alternative 4 (the Off-River Treatment Works). Under this alternative, the 49-mile Shaw Creek Hillside All-Season Road would be open to general public use for the first 23 miles where the road is within or adjacent to the Tanana Valley State Forest, and then closed for the remaining 26 miles to the mine. The last 26 miles would be reclaimed, and the first 23 miles of the road would be retained permanently. A 50-mile power line would parallel the road. Mine site facilities include a mill and camp complex, dry stack tailings pile and recycle water tailings pond, 3,000-foot airstrip located on the Goodpaster Valley floor just north of the mouth of Leise Creek, gravel pits, laydown and fuel storage areas, and a local network of roads.

We have the following comments on the DEIS:

2.3 Applicant's Preferred Alternative

Alternative 2 is the Applicant's Proposal. The Agency's Preferred Alternative is discussed in Section 5 - Agency Determination of Preferred Alternative. Section 2.3 should be changed from G5-1

"Applicant's Preferred Alternative" to "Applicant's Proposal" to eliminate confusion regarding the Preferred Alternative. As the DEIS is written, there appears to be two preferred alternatives - the Applicant's and the Agency's. There should only be one Preferred Alternative. Potential impacts of the Preferred Alternative, as compared to other alternatives, should be the focus the final EIS. G5-1 CONT'D.

4.12 Land Use

Options for permanent and temporary access roads are discussed in sections 4.12.4 and 4.12.5. The Agency Preferred Alternative modified the Applicant's Proposal (Alternative 2) to include reclamation of roughly one-half of the proposed 49-mile access road. The DEIS effectively analyzes temporary and permanent access road options, but lacks a thorough analysis of the newly proposed combination of temporary and permanent access in the Agency Preferred Alternative. The FEIS should address the direct, indirect and cumulative effects of the preferred access alternative. G5-2

4.8 Fish and Aquatic Habitat

Section 4.8.2. As stated in the DEIS and PDEIS, the Goodpaster River is a high-value fish-bearing stream. The proposed location of the 3,000 ft. airstrip abuts an outside bend of the Goodpaster River. Outside bends of rivers are very susceptible to erosion and bank failure during floods and high sediment discharge. Clearing for the airstrip could lead to river channel changes with increased downstream sedimentation and possible loss of spawning and macroinvertebrate habitat. Erosion resulting from airstrip construction could have a major local impact on the Goodpaster River if it occurred during salmon spawning. On page 4-89, the DEIS states that from the perspectives of local topography and flight safety, the airstrip location cannot meet both the Service requested 300-foot buffer and the FAA runway alignment requirements. The applicant proposes to use mitigation and reclamation measures to maintain river bank stability and to prevent encroachment on the airstrip. The most effective way to stabilize a river bank is to maintain a vegetated buffer. A minimum buffer of 50 feet would help stabilize the river bank. The airstrip should be engineered to include a vegetative buffer ranging from 50 to 300 feet depending on runway alignment requirements. Trimming willow to a 3 foot height along the bank will keep roots in tact and stabilize the river bank while providing visibilty. Rather than using rip rap to stabilize the bank, the Service asks you consider, as you work to mitigate impacts, leaving the bank vegetated and utilizing methods discussed in the enclosed paper, *The Cross-Vane, W-Weir and J-Hook Vane Structures... Their Description, Design and Application for Stream Stabilization and River Restoration* by D. L. Rosgen, P.H. The in-stream structures discussed in this paper reduce near-bank shear stress and stream power while increasing center channel shear stress and stream power to retain both flood-flow and sediment transport capacity. Testing has shown that submerged vanes like J-Hooks not only redirect velocity away from the riverbank thereby reducing erosion, but improve fish habitat by creating slow-water pools downstream of the structures. G5-3

4.20 Mitigation, Reclamation and Monitoring

2

Table 4.20-1 effectively summarizes resource protection measures that are being proposed by Teck-Pogo Inc. The Service commends Teck-Pogo Inc. for their recognition of the importance of this area to fish and wildlife, and we support the proposed mitigation measures. We have the following suggestions for improving the mitigation plan.

Wildlife. Mitigation measure #1 states, "Gravel pits excavated and maintained with appropriate pit slopes to ensure stability and avoid wildlife entrapment." The Service suggests you consider the following additional mitigation for creating and enhancing productive wildlife habitat when reclaiming gravel pits:

- Design reclaimed gravel pits to include a shallow littoral zone, extending at least 20 feet from shore with a maximum underwater shoreline slope of 20H:1V with a maximum water depth of 12" at 20 feet from shore. Extreme shallows (1-3") should be a portion of the 20-foot littoral zone to provide habitat for wading birds and shorebirds.
- The perimeter of the reclaimed gravel pit should be irregularly-shaped with coves, spits and peninsulas to provide a diversity of shoreline habitat.
- Overburden stockpiled from the gravel pit operation should be returned to the pit, taking care to spread a portion of it within the littoral zone. Organics from the overburden will facilitate plant growth.

G5-4

Subsistence. Mitigation measure #1 states, "All-season road open only to Pogo-related vehicles. Gated, video monitored, and patrolled to ensure compliance." With the new Agency Preferred Alternative, the all-season road would be open to general public use for the first 23 miles where the road is within or adjacent to the Tanana Valley State Forest, and then closed for the remaining 26 miles to the mine. The last 26 miles would be reclaimed, and the first 23 miles of the road would be retained permanently. Mitigation for subsistence should be addressed under the Agency Preferred Alternative. G5-5

As we stated in our September 7, 2000 and September 25, 2002 letters, there are no threatened or endangered species in the project area, and thus impacts to listed species are not anticipated. G5-6

We appreciate this opportunity to comment. Please contact Elaine Gross at 456-0209 should you have any questions concerning these comments.

Sincerely,

Steven A. Lewis
Field Supervisor

3

cc: Doug Mutter, DOI, Anchorage
Cindi Godsey, EPA, Anchorage
Leroy Phillips, COE, Anchorage
Ed Fogels, ADNR, Anchorage
Steve McGroarty, ADNR, Fairbanks
Jack Winters, ADF&G, Fairbanks
Pete McGee, ADEC, Fairbanks
Karl Hanneman, Alaska Regional Manager, Teck Resources, Inc., 3520 International St, Fairbanks, 99701

Attachment: *The Cross-Vane, W-Weir and J-Hook Vane Structures... Their Description, Design and Application for Stream Stabilization and River Restoration* by D. L. Rosgen, P.H.

Literature Cited

Rosgen, David L. 2001. The Cross-Vane, W-Weir and J-Hook Vane Structures... Their Description, Design and Application for Stream Stabilization and River Restoration. In 2001 Wetlands Engineering & River Restoration Conference, August 27-31, Reno, NV.

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The Cross-Vane, W-Weir and J-Hook Vane Structures...Their Description, Design and Application for Stream Stabilization and River Restoration

D. L. Rosgen, P.H.*

* Professional Hydrologist, Wildland Hydrology, Inc. 1481 Stevens Lake Road. Pagosa Springs, Colorado 81147; PH 970-731-6100; wildlandhydrology@pagosa.net

Abstract

The descriptions, design specifications, placement locations, spacing and various applications of Cross-Vane, W-Weir and J-Hook Vane structures are presented. These structures were developed and subsequently applied to: 1) establish grade control, 2) reduce streambank erosion, 3) facilitate sediment transport, 4) provide for irrigation diversion structures, 5) enhance fish habitat, 6) maintain width/depth ratio, 7) improve recreational boating, 8) maintain river stability, 9) dissipate excess energy, 10) withstand large floods, 11) maintain channel capacity, 12) be compatible with natural channel design, and 13) be visually acceptable to the public.

Relations to determine the minimum size of rock for these structures are presented based on bankfull shear stress. Drawings for each structure are provided that display appropriate use of footers, cross-section shape, profile shape, appropriate channel locations, angles, slopes, spacing and elevations. Velocity isovels are presented to describe changes in the distribution of energy produced by the structures. The structures all reduce near-bank shear stress and stream power, while increasing center channel shear stress and stream power to retain both flood-flow and sediment transport capacity. These structures have been installed on 14 rivers with bankfull widths varying from 9m (Lower Blanco River in Southwestern Colorado) to 150m (Bitterroot River in Northwestern Montana) and slopes varying from 0.05 to .0003 and in bed material ranging from cobble and gravel to sand bed streams. Since 1986, the author has restored and monitored a wide variety of stream types involving over 48 km of rivers and evaluated various structure performance following major floods. This monitoring has resulted in the development, implementation and assessment of the Cross-Vane, W-Weir and J-Hook vane structures.

Introduction

Structures in river engineering are designed to help stabilize channel boundaries. However, monitoring their effectiveness have indicated that many structures, contrary to the intended design, caused river instability. Structures are often selected and installed without an understanding of sediment transport and violate the dimension, pattern and profile of the stable river. Relations for canal design based on rigid boundary theory, clear water discharge, and uniform flow have been implemented on natural channels, with less than effective results. Work conducted by Leopold, et al, (1964) found that river form is associated with an integration of eight interrelated variables, that if any one variable is changed, it sets up mutual, concurrent adjustments of the other variables in the stream system until a new quasi-equilibrium is reached (stability). The eight variables are slope, width, depth, velocity, discharge, boundary roughness, size of sediment transported, and concentration of sediment. The variables can be integrated into morphological relations for stable natural rivers as described by "reference reach" by stream type

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(Rosgen, 1998). Structures are often placed in rivers in an attempt to correct some of the adverse effects of channel adjustment due to instability. Unfortunately, many structures are often installed to "patch a symptom" rather than achieve the stable channel form. Appropriately used structures can assist in maintaining the stable dimension pattern and profile (Rosgen, 1996).

River engineering structures need to be incorporated with a clear understanding of the river variables that constitute the stable form. Structure failures are generally associated with designs incompatible with the "rules of the river". For example, cross-channel check dams decrease energy slope upstream of the structure. Data from natural rivers indicate a negative power function relation between sinuosity and slope (Figure 1), thus when slope is decreased there is a corresponding increase in sinuosity through lateral migration following bank erosion. Most failures of check dams occur when they are "out flanked" by the river through lateral adjustment upstream of the structure. Consequently, many check dams often accelerate excess bank erosion. Check dams generally decrease upstream velocity, slope, and depth, increase roughness, and induce sediment deposition. These changes lead to instability and contribute to the failure of the structure. Structures have also failed due to excessive bedload deposition that leads to a loss of channel capacity and subsequent change in the stable dimension, pattern and profile of the river.

Streambank stabilization structures proliferate as bank erosion accelerates. Most of the structures implemented involve "hardening" the banks. Changes in near-bank stress and/or stream power associated with unstable channels can accelerate bank erosion.
Work conducted by Parker (1978), and Bathurst (1979), described secondary circulation patterns and the distribution of boundary shear stress in both straight and meandering rivers. Ikeda, et al, (1988), described the erosion and transport of grains from the bank region to the center of the channel as a result of bank erosion. They also described the process of lateral momentum transfer due to turbulence that resulted in eddy diffusion and induced net lateral transport of longitudinal fluid momentum from regions of high momentum to regions of low momentum. These processes resulted in a lateral redistribution of bed shear stress. Secondary cells associated with down welling (high boundary shear stress) and upwelling (low boundary shear stress) occur in the near-bank region creating very high velocity gradients (Bathhurst, et al, 1979). Boundary shear stresses associated with high velocity gradients, can accelerate erosion rates, and are shown in the velocity isovel constructed from vertical velocity profiles (Figure 2). The streambank erosion prediction methodology developed by Rosgen (1996, 2001), utilizes computations of near-bank stress for assessing various erosion rates. Any structures that can reduce near-bank stress will reduce bank erosion by several orders of magnitude.

New attempts at similar problems

To offset near-bank forces to reduce streambank erosion, Paice and Hey (1989) installed submerged concrete vanes on the outside of meander bends to control secondary circulation and redirect river currents to decrease boundary shear stress in the outer bank region. These attempts were successful in reducing erosion by redirecting erosive currents in the near-bank region. Iowa Vanes (Ogdaard and Mosconi, 1987) were previously used to redirect currents away from streambanks to reduce accelerated erosion. Submerged vanes were installed and tested by Hey (1992) not only to re-direct velocity distribution but to also provide improved fish habitat.

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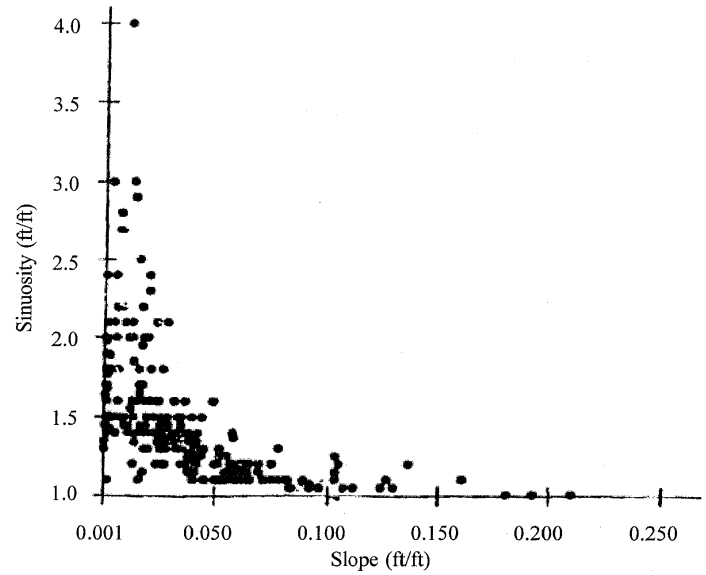

Figure 1. Relation of sinuosity to slope for natural rivers

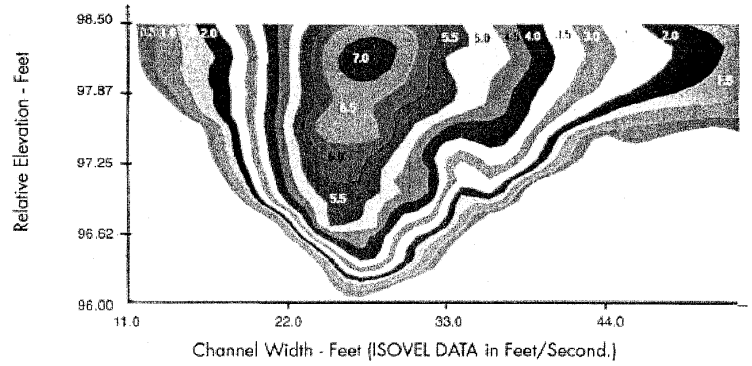

Figure 2. Velocity isovels for a "C3" stream type reach showing variations in velocity distribution (Rosgen, 1996, pg 6-42).

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Structures that modify velocity distribution such as deflectors, bank barbs, spur dikes and other similar designs often accompany "bank hardening." The US Army Corps of Engineers recently developed bendway rock weirs (Derrick, et al, 1994). This structure points slightly upstream at a departure angle of 60-70 degrees from a tangent line from the bank. The intent of the bendway weir was initially to "scalp" point bars and re-locate the thalweg to the inside of the bend for navigation. In addition, this structure subsequently induced sediment deposition in the near-bank region. There is generally re-circulation, back eddy erosion on the upstream side of the structure due to the abrupt nature of re-directing the angle of attack of the near-bank velocity vectors. This structure has been installed on large rivers and has been effective in meeting its design objectives in many instances (Derrick, 1996).

Spur dikes and bank barb structures are common bank protection structures but generally produce an upstream and downstream re-circulation eddy that often increases bank erosion. This tends to occur when the thalweg is forced too far across the channel and/or the structures are oriented 45 to 90 degrees upstream from a tangent line to the bank. Bank barbs create a vertical vortices due to their abrupt angle to the bank that is often responsible for bank erosion and accelerated scour at the "point" of the barb. Rock and/or log deflector structures, pointing downstream, often direct the velocity vectors into the bank when flows overtop the structure increasing near-bank velocity gradients and causing accelerated bank erosion. Subsequently, some of these structures have created unexpected adverse adjustments in the channel.

Vortex Rock Weirs and Root Wads were installed in the 1980s for grade control, fish habitat and streambank erosion protection (Rosgen, 1996). After monitoring for approximately 15 years, the author determined that these structures produced back-eddy erosion during major floods resulting in streambank erosion and the loss of some structures. The problems of the Root Wad and Vortex Rock Weir structures were documented which subsequently led to major changes in their design.

As additional objectives of river engineering have evolved there has arisen a need for a "softer" substitute for streambank stabilization. The departure from traditional "hard" procedures has been slow but steady as the use of natural materials and methods have grown in popularity. This has, in turn, encouraged the pursuit of additional techniques to offset existing problems of various structures observed in the field. A properly designed river structure should meet more than one specific objective (such as grade control).
Structures should also:

1. Maintain the stable width/depth ratio of the channel;
2. Maintain the shear stress to move the largest size particle to maintain stability (competence);
3. Decrease near-bank velocity, shear stress or stream power;
4. Maintain channel capacity;
5. Ensure stability of structure during major floods;
6. Maintain fish passage at all flows;
7. Provide safe passage or enhance recreational boating;
8. Improve fish habitat;
9. Be visually compatible with natural channels;
10. Be less costly than traditional structures;

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11. Create maintenance-free diversion structures;
12. Reduce bridge pier/footer scour, road fill erosion and prevent sediment deposition.

The use of rip-rap, gabions, concrete lined channels, bin walls, interlocking blocks, groynes, Kelner Jacks, spur dikes, rock jetties, barbs, reinforced revetment, sheet piling, log cribs, concrete check dams, and loose rock check dams are not only expensive but often do not meet the above stated objectives for river structures. A central problem with riprap, gabions, toe rock protection and similar structures is the increase in near-bank velocity, velocity gradient, stream power, and shear stress. These problems often lead to either on-site failures or problems immediately upstream and/or downstream of the structures. This, in combination with their high cost, resultant poor fish habitat and "less than natural" appearance, led to the development in the early 1990's of the Cross-Vane, W-Weir and J-Hook Vane.

Description of Structures

Cross-Vane

General description

The design of the Cross-Vane structure is shown in plan, profile and section view in Figure 3. The Cross-Vane is a grade control structure that decreases near-bank shear stress, velocity and stream power, but increases the energy in the center of the channel. The structure will establish grade control, reduce bank erosion, create a stable width/depth ratio, maintain channel capacity, while maintaining sediment transport capacity, and sediment competence. The Cross-Vane also provides for the proper natural conditions of secondary circulation patterns commensurate with channel pattern, but with high velocity gradients and boundary stress shifted from the near-bank region. The Cross-Vane is also a stream habitat improvement structure due to: 1) an increase in bank cover due to a differential raise of the water surface in the bank region; 2) the creation of holding and refuge cover during both high and low flow periods in the deep pool; 3) the development of feeding lanes in the flow separation zones (the interface between fast and slow water) due to the strong downwelling and upwelling forces in the center of the channel; and 4) the creation of spawning habitat in the tail-out or glide portion of the pool.

The Cross-Vane is also a popular boating feature as kayakers routinely do "enders" and "surf" the vane portion of the structures installed on the Lake Fork of the Gunnison River near Lake City, Colorado and the San Juan River in Pagosa Springs, Colorado. The invert portion (center 1/3, see Figure 3) of the structure creates a standing wave, but is associated with a "run" immediately downstream of the invert. As a result the potential development of a dangerous re-circulation pool that traps "swimming paddlers" is eliminated. The structure "chutes" the swimmers and/ or their boats into the deep, low velocity pool approximately half a bankfull width below the invert.

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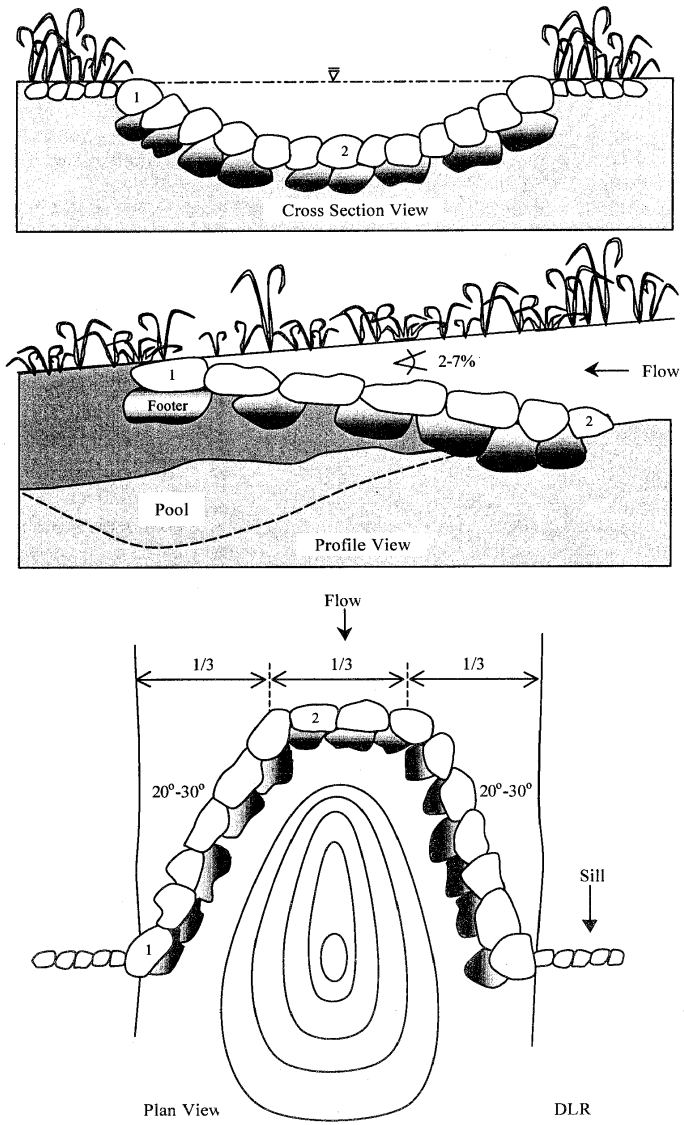

Figure 3. Cross section, profile and plan view of a Cross-Vane

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Major floods have tested the Cross-Vane structure such as the 1996 flood on the San Juan River in Pagosa Springs, which passed a flood stage of 3.5 meters above the top of the structures on a 0.005 slope. A detailed contour map prepared in 2000 demonstrates the channel shape and location of the deep pool (Figure 4). The structure did require post-flood maintenance and it is still performing properly as a diversion structure, a kayak playground and an excellent fly-fishing location where fisherman can be frequently observed. Although bedload transport of particle size up to 220 mm occurred during the flood, the pools did not fill. The strong downwelling currents in the center of the channel maintained a high bedload transport keeping the pool deep as evidenced in Figure 4.

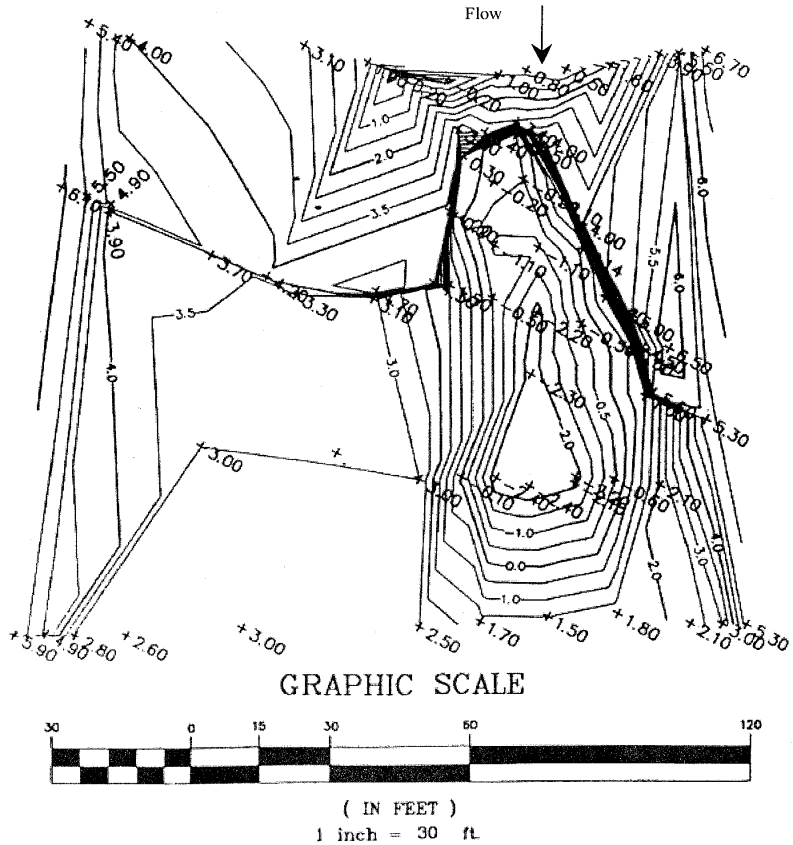

Figure 4. Contour map of Cross-Vane following major flood – San Juan River, CO.

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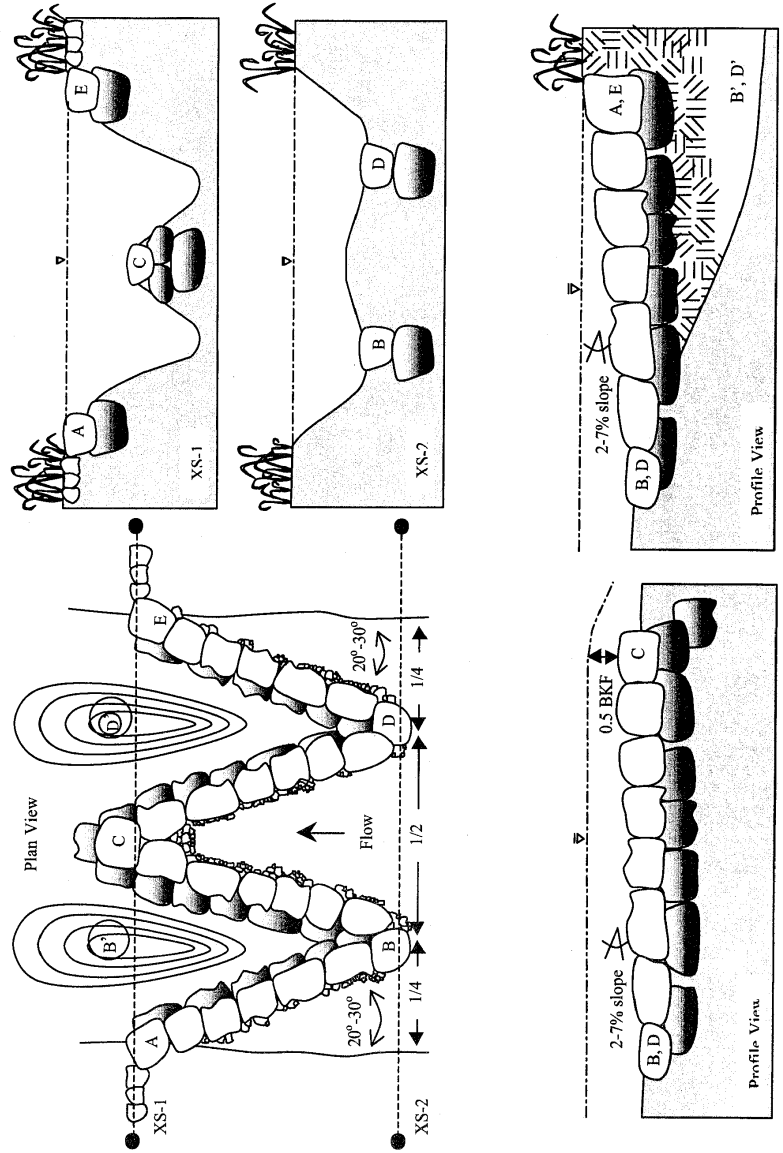

Figure 5. Plan, cross section, and profile views of the W-weir

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W-Weir

General Description. The design of the W-Weir (W as looking in the downstream direction) was initially developed to resemble bedrock control channels on larger rivers. Various rock weirs installed across larger rivers for fish habitat, grade control and bank protection often create an unnatural and uniform "line of rocks" that detracts from visual values. The W-Weir is similar to a Cross-Vane in that both sides are vanes directed from the bankfull bank upstream toward the bed with similar departure angles. From the bed at ¼ and ¾ channel width, the crest of the weir rises in the downstream direction to the center of the bankfull channel creating two thalwegs (Figure 5). The objectives of the structure are to provide grade control on larger rivers, enhance fish habitat, provide recreational boating, stabilize stream banks, facilitate irrigation diversions, reduce bridge center pier and foundation scour, and increase sediment transport at bridge locations. Double W-Weirs are constructed on very wide rivers and/or where two center pier bridge designs (three cells) require protection.
Habitat for trout is enhanced by maximizing usable holding, feeding and spawning areas. Fish hold in the multiple feeding lanes created by the two thalweg locations and pools. Various age classes of trout also hold in the deep glide created upstream of the structure and against both banks due to the increased depth and reduced velocity of flows in the near-bank region. Spawning habitat is created in the tail-out of the pools due to upwelling currents and a sorting of gravel bed material sizes preferred by trout.

J-Hook Vane

General Description. The J-Hook Vane is an upstream directed, gently sloping structure composed of natural materials. The structure can include a combination of boulders, logs and root wads (Figures 6-7) and is located on the outside of stream bends where strong downwelling and upwelling currents, high boundary stress, and high velocity gradients generate high stress in the near-bank region. The structure is designed to reduce bank erosion by reducing near-bank slope, velocity, velocity gradient, stream power and shear stress. Redirection of the secondary cells from the near-bank region does not cause erosion due to back-eddy re-circulation. The vane portion of the structure occupies 1/3 of the bankfull width of the channel, while the "hook" occupies the center 1/3.

Maximum velocity, shear stress, stream power and velocity gradients are decreased in the near-bank region and increased in the center of the channel. Sediment transport competence and capacity can be maintained as a result of the increased shear stress and stream power in the center 1/3 of the channel. Backwater is created only in the near-bank region, and the small departure angle gently redirects the velocity vectors from the near-bank region, reducing active bank erosion.

The scour pool in the center 1/3 of the channel provides energy dissipation and holding cover for fish. The flow separation zones, or "seams" of fast and slow water that mark the zones of downwelling and upwelling currents, are habitat features utilized by trout. The "hook" portion of the vane produces a longer, wider and deeper pool than that created by vane-only structures. The downstream pool dissipates energy and provides fish habitat. The 1/4 - 1/3 rock diameter gaps between the rocks associated with the hook creates a vortex or corkscrew flow that

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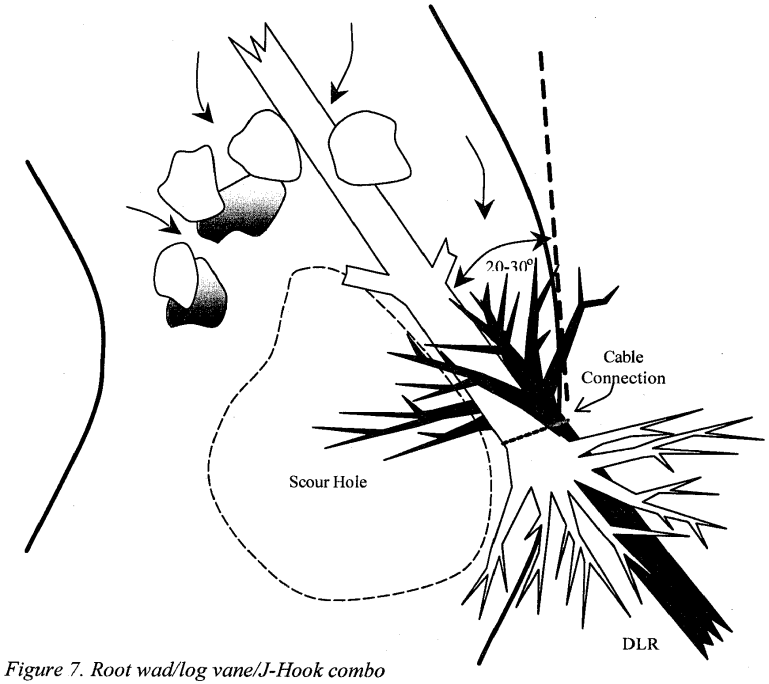

Figure 7. Root wad/log vane/J-Hook combo streambank stabilization and fish habitat structure

increases the "center-channel" shear stress. The center of the channel associated with the hook is efficient at transporting sediment, debris and improving channel capacity and sediment competence. The "shooting flow" associated with the hook portion of the structure provides for recreational boating in moderate to larger sized rivers. Width/depth ratios are maintained by decreasing bank erosion rate and increasing bankfull channel depth, even following major floods.

Design Specifications

Cross-Vanes, W-Weirs and J-Hook Vanes

Vane angle. The vane arm portion of all three structures is generally 20-30 degrees measured upstream from the tangent line where the vane intercepts the bank. The 20-degree angle provides the longest vane length and protects the greatest length of streambank. Variation from 20 to 30 degrees is often utilized in offset Cross-Vanes and/or W-Weirs whose asymmetry disproportionately shift more water to one side of the structure often used for irrigation

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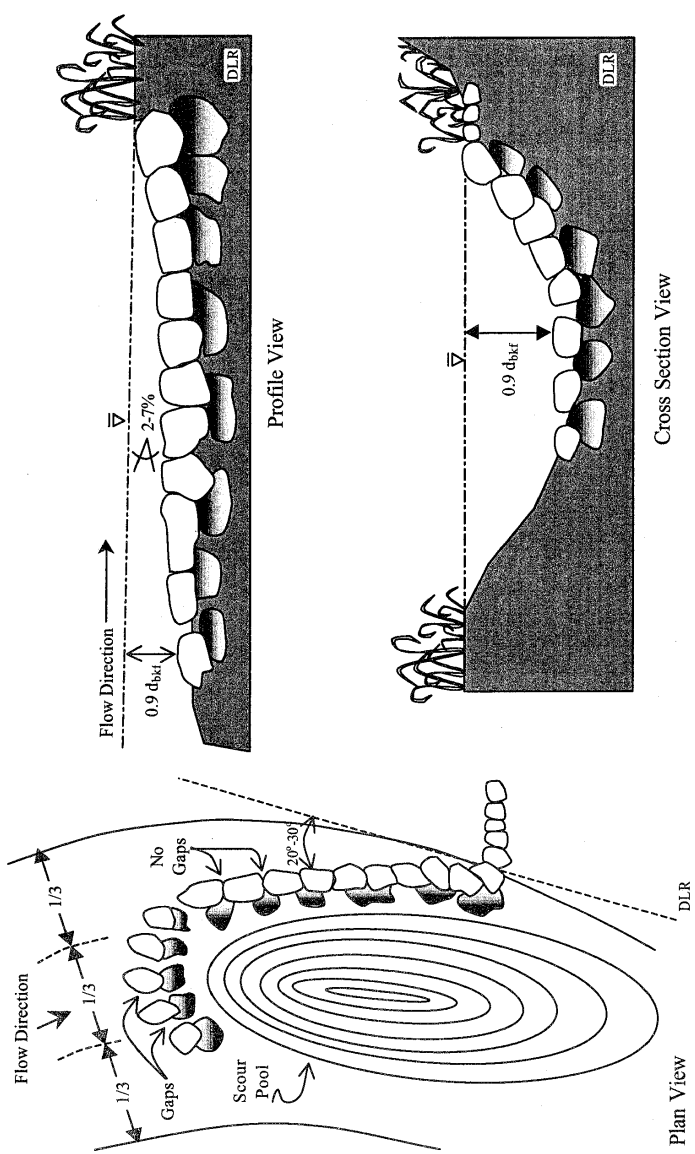

Figure 6. Plan, profile, and section view of the J-Hook Vane

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diversions. The flatter and smaller vane angle arm will extend farther upstream to intercept proportionately more water and increase the length of bank protected.

Vane slope. The slope of the vane extending from the bankfull stage bank should vary between 2-7 percent. Vane slope is defined by the ratio of bank height/vane length. For installation in meander bends, ratios of J-Hook Vane length/bankfull width is calculated as a function of the ratio of radius of curvature/bankfull width and departure angle (Table 1). Equations for predicting ratios of J-Hook Vane spacing/bankfull width on meander bends based on ratio of radius of curvature/bankfull width and departure angle is shown in Table 2. Vane length is the distance measured from the bankfull bank to the intercept with the invert elevation of the streambed at 1/3 of the bankfull channel width for either Cross-Vanes or J-Hook Vanes. For very large rivers, where it is impractical to extend the vane length to 1/3 of the bankfull width, vane slope is calculated based on the specified angle of departure and the ratio of bank height/vane length where the vane arm intercepts the proposed invert of the structure.

Table 1. Equations for predicting ratio of vane length/bankfull width (V_L) as a function of ratio of radius of curvature/width and departure angle, where W = bankfull width. (SI units)

Rc/W	Departure Angle (degrees)	Equation
3	20	$V_L = 0.0057\ W + 0.9462$
3	30	$V_L = 0.0089\ W + 0.5933$
5	20	$V_L = 0.0057\ W + 1.0462$
5	30	$V_L = 0.0057\ W + 0.8462$

Table 2. Equations for predicting ratio of vane spacing/width (Vs) as a function of ratio of radius of curvature/width and departure angle, where W = bankfull width (SI units)

Rc/W	Departure angle (degrees)	Equation
3	20	$Vs = -0.006\ W + 2.4781$
3	30	$Vs = -0.0114\ W + 1.9077$
5	20	$Vs = -0.0057\ W + 2.5538$
5	30	$Vs = -0.0089\ W + 2.2067$

The spacing of J-Hook Vanes can be increased by 0.40W if there exists a low bank erosion hazard rating (BEHI) of less than 30 (Rosgen, 1996, 2001).

Bank height. The structure should only extend to the bankfull stage elevation. If the bank is higher, a bankfull bench is constructed adjacent to the higher bank and the structure is integrated into the bench. The use of a Cross-Vane is shown in Figure 8 where a bankfull bench is created adjacent to a terrace bank.

Footers. The minimum footer depth at the invert for cobble and gravel bed streams is associated with a ratio of 3 times the protrusion height of the invert rock. This is applicable to all three structures and is shown in Figure 9 for a J-Hook Vane. For sand bed streams, the minimum depth is doubled due to the deeper scour depths that occur. All rocks for all three structures require footers. If spaces are left between the invert rocks for Cross-Vane and W Weirs, then the top of the footer rocks becomes the invert elevation for grade control. If no gaps are left, then the top of the surface rock becomes the base level of the stream.

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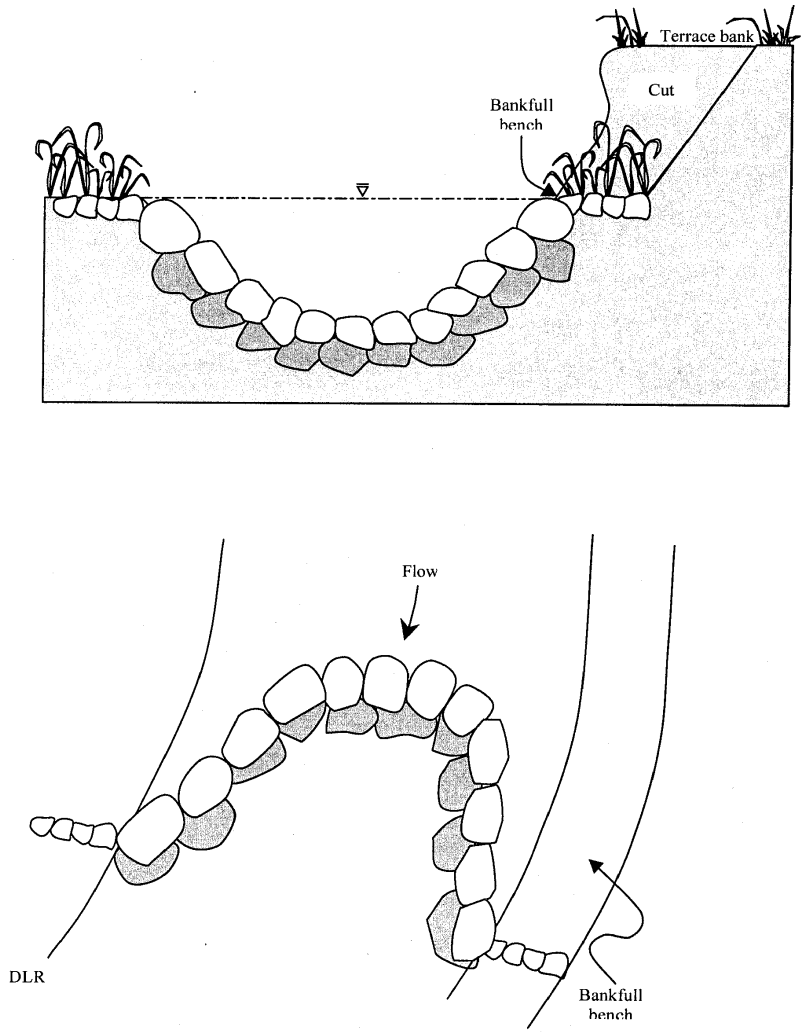

Figure 8. Example of a boulder Cross-Vane and constructed bankfull bench

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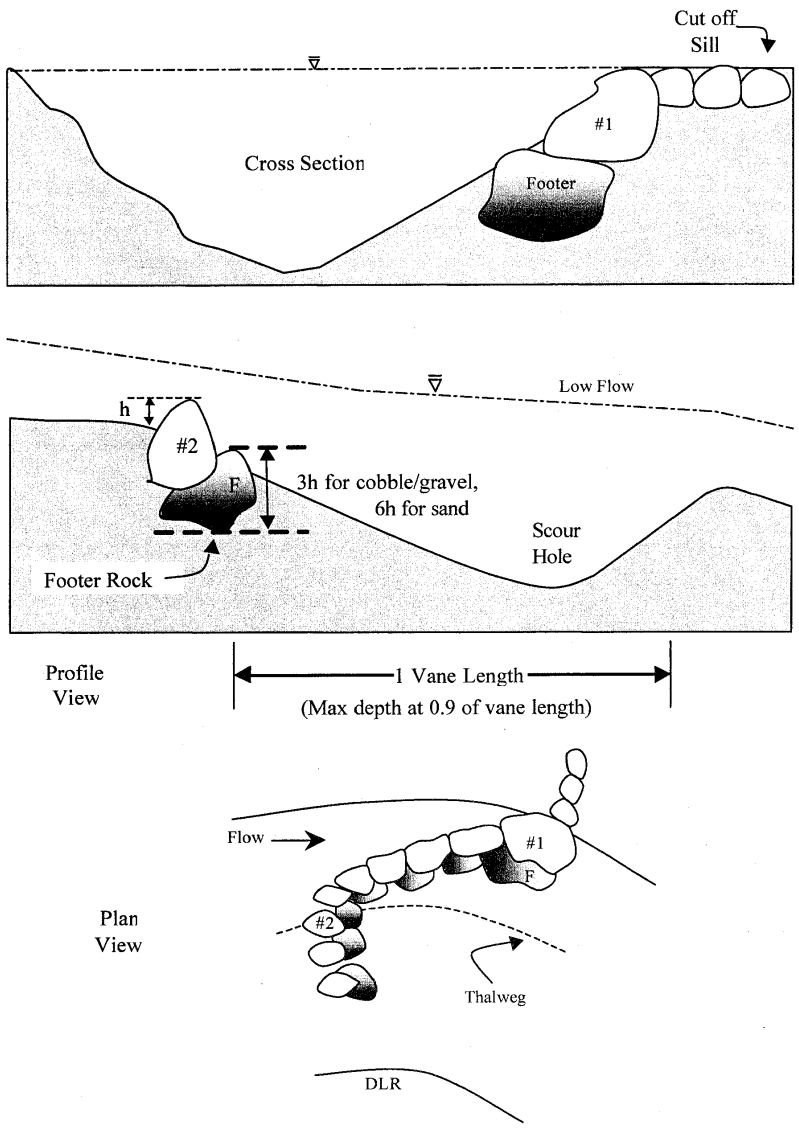

Figure 9. Locations/positions of rocks and footers in relation to channel shape and depths

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Rock size. The relationship of bankfull shear stress to minimum rock size used for all three structures is shown in Figure 10. The application of this empirical relation is limited to size of rivers whose bankfull discharge varies from 0.56 cms (20 cfs) to 113.3 cms (4,000 cfs). For example, appropriate minimum rock sizes for values of bankfull shear stress less than 1.7 kg/m^2 (0.35lbs/ft^2) are associated only with stream channel bankfull depths from 0.26 - 1.5m (2 - 5 ft). This relation would *not* be appropriate for applications outside the limits of the data for a river slope of 0.0003 and a mean depth of 6.1m, even though a similar shear stress results as in the example presented.

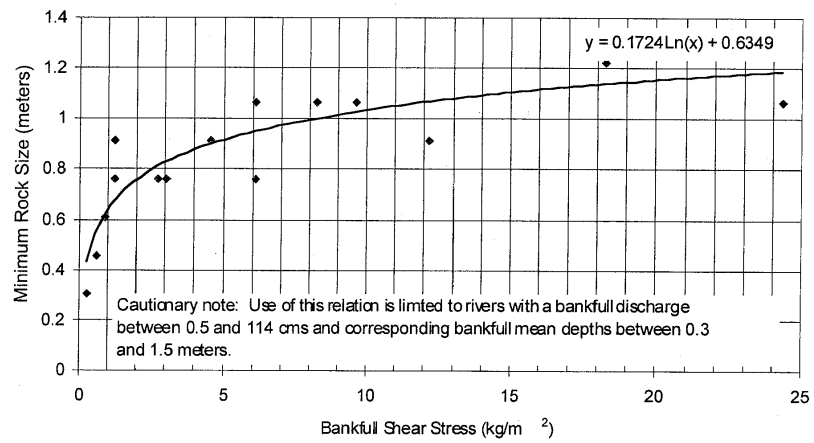

Figure 10. Minimum rock size as a function of bankfull shear stress

Materials. The Cross-Vane can be constructed with boulders, logs and a combination of both. A geotextile fabric is required to prevent scour under the structure when logs are used or when rocks are used in sand or silt/clay bed channels. The design using logs only and a duckbill anchor system is shown in Figure 11. Large flat rocks can be substituted for the duckbill anchor and cable to keep the logs in place.

Hydraulics. The center cell of Cross-Vane and J-Hook Vane structures generally contain 0.80 of the bankfull discharge. The left and right 1/3 cells of the structure each generally contain 0.3 of the mean velocity, 0.02 of the shear stress and 0.01 of the stream power of the entire bankfull channel. A velocity isovel showing the distribution of velocity over a J-Hook Vane on Turkey Creek, Colorado is shown in Figure 12. The Cross-Vane isovels are similar to those of the J-Hook Vane, as they distribute the velocity from the near-bank region to the center of the channel.

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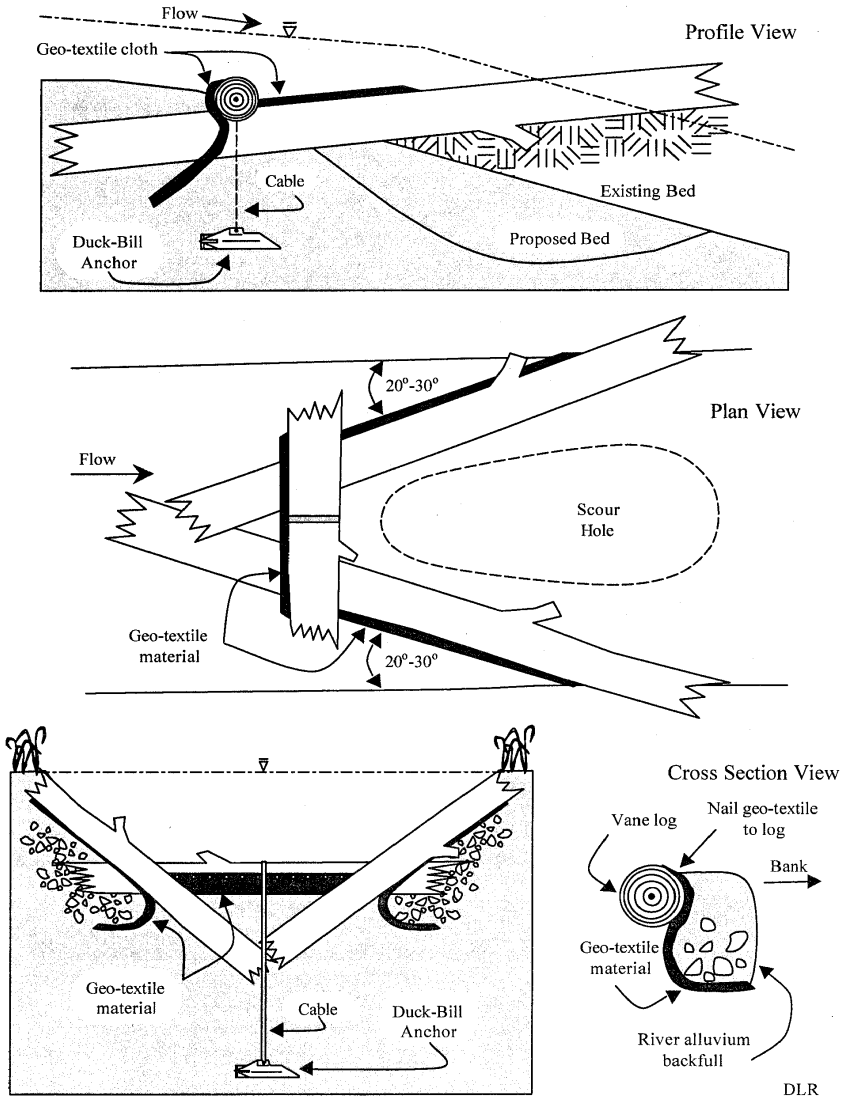

Figure 11. Cross-Vane using logs and a duck-bill anchor

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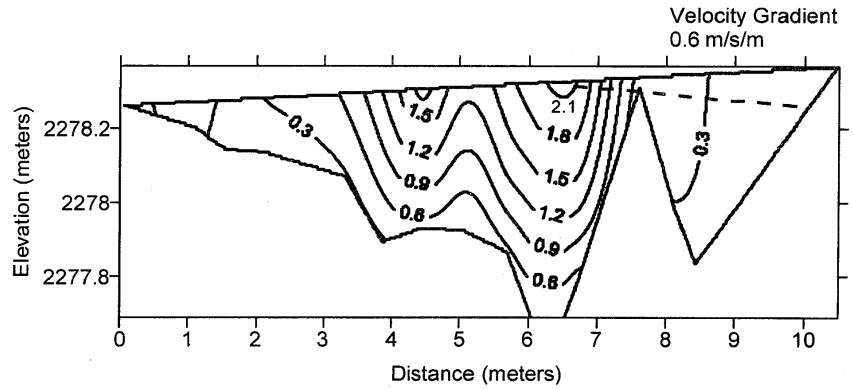

Figure 12. Velocity isovels of a J-Hook at Turkey Creek, CO (Velocity in meters/second)

Applications

Irrigation diversions. The use of a Cross-Vane for an irrigation diversion is shown in Figure 13. Cross-Vanes and W-Weirs have both been used successfully for irrigation structures. Both the Cross-Vane and W-Weir create a differential head in the near-bank region due to the flat slope of the vane leading to the bank. This condition provides the head to deliver water to the head gate at very low flows so that it is not necessary to construct sacrificial dams at low flows. When the head gate is closed during high flows, fine sediments often accumulate. To prevent the sediment deposition at the head gate and in the irrigation canal, a sediment sluice gate is installed so that the sediment is delivered back to the channel during normal high flows (Figure 13).

Grade control. The Cross-Vane is used to maintain base level in both riffle/pool channels, rapids-dominated stream types and in step-pool channels (Figure 14). One aspect of river restoration is associated with the conversion of incised rivers G and F stream types to B stream types (Rosgen, 1994,1996, and 1997). The Cross-Vane, as used for grade control, maintains the new width/depth ratio, entrenchment ratio, reduces bank erosion, dissipates energy and improves fish habitat. Spacing of the structures is based on a negative power function relationship of the ratio of pool spacing / bankfull width as a function of slope.

$$P_s = 8.2513\ S^{-0.9799}$$

Where P_s = the ratio of pool to pool spacing/bankfull width
S = channel slope in percent

This relationship was developed from natural channels and has a correlation coefficient (R^2) of 0.92 and is shown in Figure 15.

Bridge protection. Bridges constructed on a skew to the channel and/or placed on an outside bend often experience abutment scour and embankment erosion. This problem can be reduced by the placement of an offset Cross-Vane in the upstream reach. The vane on the outer bank in the bend has a flatter slope and smaller angle (20°), while the vane arm on the inside bank has a steeper slope and a larger angle (30°) (Figure 16). W-Weirs are particularly useful for reducing

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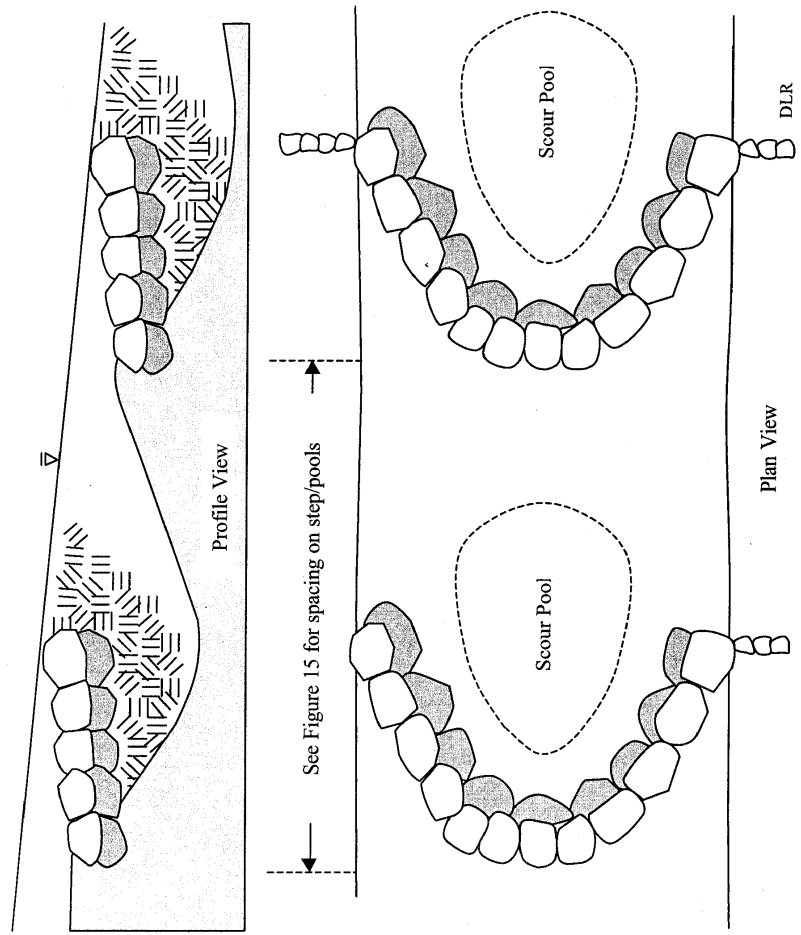

Figure 14. Use of Cross-Vane for step/pool restoration

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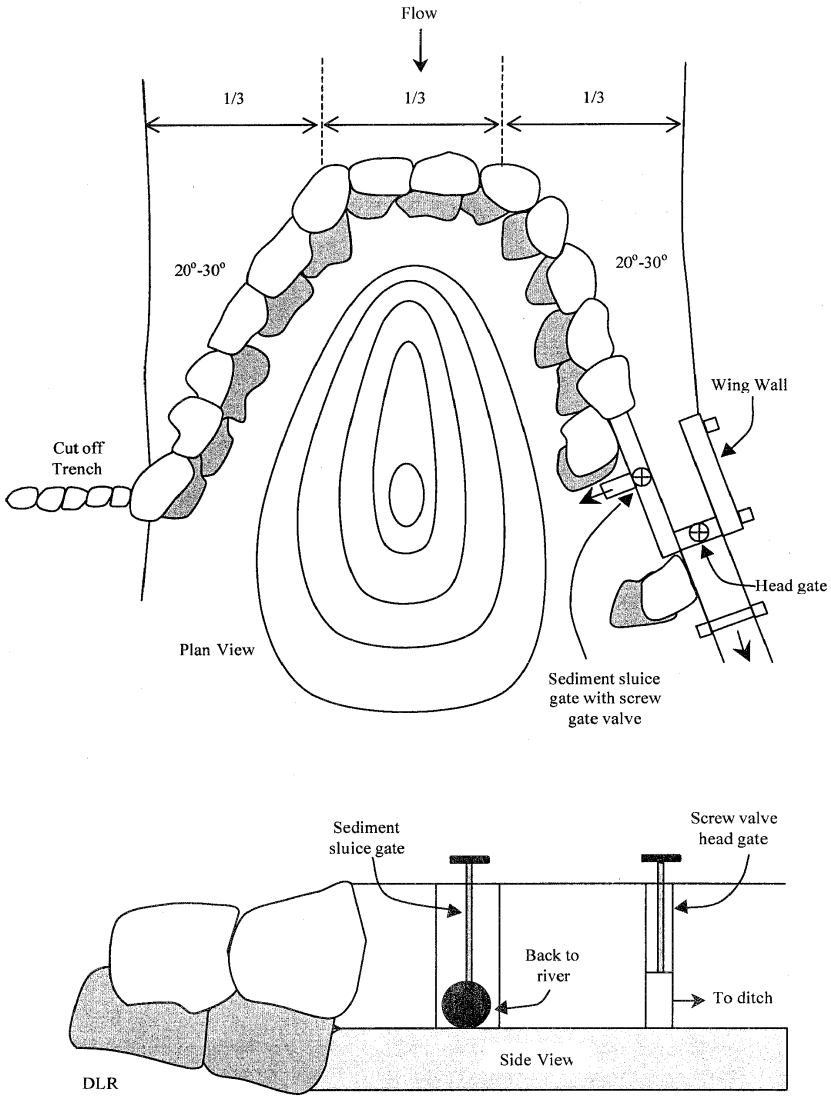

Figure 13. Example of a Cross-Vane/irrigation head gate-sediment sluice

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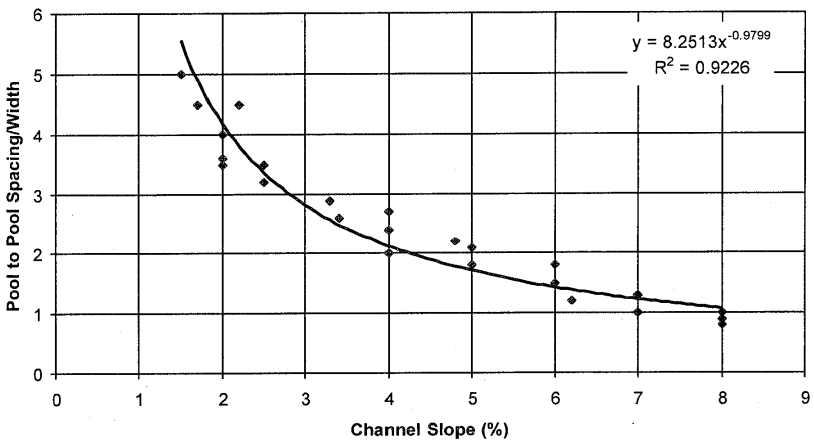

Figure 15. Ratio of pool spacing to bankfull width as a function of channel slope

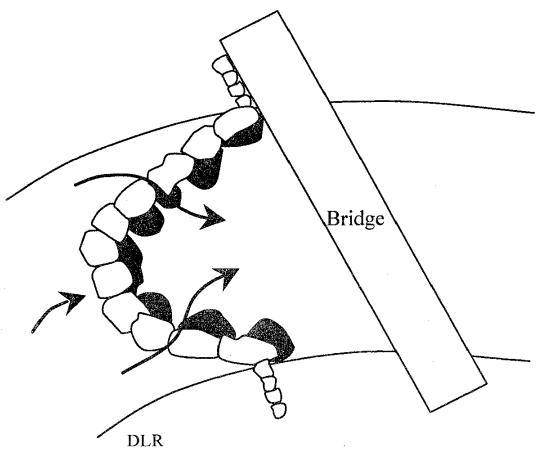

Figure 16. Application of a Cross-Vane for bridge and channel stability.

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center pier scour. Both the Cross-Vane and W-Weir can provide grade control, prevent lateral migration of channels, eliminate fish migration barriers, increase sediment transport capacity and competence and reduce footer scour. J-Hook Vanes can reduce bank erosion on outside banks both for the approach and downstream reaches of the bridge.

Streambank stabilization. The J-Hook Vane is designed to reduce accelerated streambank erosion on the outside bend of meanders. As a minimum, the amount of bank protected is 2 times the vane length, while maximum spacing provides approximately 3 times the bank protection to vane length. If both banks are eroding due to confinement (lateral containment) and entrenchment (vertical containment), then the Cross-Vane decreases the stream power and shear stress concurrently on both banks. This avoids lining or hardening both banks through a reach to provide protection.

Summary

The Cross-Vane, W-Weir and J-Hook Vane are structures that can be implemented to maintain or enhance river stability and function to facilitate multiple objectives. These structures have been successfully applied in natural channel design for river restoration, bank stabilization, grade control, irrigation diversions, fish habitat enhancement, bridge protection, and recreational boating. Continued monitoring will provide the information necessary to improve the designs to further their application to meet the ever-increasing demand for environmentally "softer" structures that meet multiple objectives.

Acknowledgement. The author wishes to thank J.D. Kurz for computer assisted graphics and field assistance along with Art Parola, Jeremy Mondock and Jean Kapusnick for the Cross-Vane map in Figure 4, and to Dr. Richard Hey and Owen Williams for their thorough technical review of this manuscript.

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Rosgen, David L. 2001. A Practical Method of Computing Streambank Erosion Rate. In 7th Federal Interagency Sedimentation Conference, March 25-29, Reno, NV.

COMMENT RESPONSE:

G5-1 The term Applicant's Proposed Project has been substituted for the term Applicant's Preferred Alternative throughout the document.

G5-2 The draft EIS does analyze the Preferred Alternative's option of allowing public access only west of a security gate at Gilles Creek, with only Pogo project-related use allowed east of Gilles Creek. The general drafting convention is that if an option would have no or only minor impacts on a particular resource, then the Chapter 4 section for that resource is silent concerning impacts. If the option would have greater than minor impacts on a particular resource, then those impacts are discussed under the heading "Security gate at Gilles Creek" for Alternative 2 in that resource's Chapter 4 section. Of the 16 applicable resource sections that discuss impacts in Chapter 4, 12 are silent because there would be no or only minor impacts, while 6 contain descriptions of impacts for a "Security gate at Gilles Creek," i.e., public use only allowed west of the gate.

G5-3 Thank you for your comment and technical paper. These will be considered during the State's permitting process.

G5-4 These suggestions will be considered by ADNR for its final Plan of Operations Approval which will be issued after publication of this FEIS.

G5-5 Table 4.20-1 presents just mitigation measures proposed by the Applicant for its proposed project, which includes only Pogo use of the entire road and reclamation of its entire length. Subsistence mitigation measures for the Preferred Alternative likely would be similar, but only for that portion of the road that would only be used by the Pogo project.

G5-6 Thank you for reconfirming the absence of threatened and endangered species in the project area.

G6

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United States Coast Guard

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Seventeenth Coast Guard District

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16590
April 28, 2003

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NEPA Compliance Coordinator
U.S. Environmental Protection Agency
Region 10
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Seattle, Washington 98101

RECEIVED
[redacted]-1 2003
U.S. EPA REGION 10
OFFICE OF WATER

SUBJECT: Draft Environmental Impact Statement (DEIS)
Pogo Gold Mine Project, Delta, Alaska

Dear Ms. Gold:

We are forwarding information as discussed earlier in an effort to help you develop and evaluate navigational impacts on vessels if a bridge structure was constructed across the Goodpasture River near Delta, Alaska as proposed in the Pogo Gold Mine Draft Environmental Impact Statement. Describing the present navigation of the entire waterway and for the reach through the bridge site is the first step in this process.

I have enclosed several sources of information that may help you develop the draft EIS section dealing with navigational impacts. Other sources of information describing the present use of the waterway include the local offices (Delta) of the Alaska State Troopers, Alaska Fish and Game, State and/or Federal Parks Services, Native and Tribal offices, and various guided hunting, fishing and tourist services in Alaska that use the Goodpasture River. Thank you for the opportunity to comment on this important project. G6-1

J. N. HELFINSTINE
District Bridge Program Administrator
Aids to Navigation Branch
U.S. Coast Guard
by direction of the Commander

Enclosures: (1) Federal Contacts in Alaska for Navigability-Related Issues
(2) Navigational Evaluation

"Operational Excellence through Leadership, Teamwork, and Continuous Improvements"

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FEDERAL CONTACTS IN ALASKA FOR NAVIGABILITY-RELATED ISSUES

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C WO3 Bennett (RoN)
and

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was mailed to them. A list of those owners should be included in the case file.)

( ) Yes ( ) No

c. **Date of Coast Guard Local Notice to Mariners:**

d. **Date of Coast Guard Public Hearing (if applicable):**

10. **Summary of views of governmental agencies, navigational interests or other interested parties:**

II. **NAVIGATIONAL EVALUATION** Give reasons to support each answer. Describe present and prospective navigation of the entire waterway and for the reach through the bridge site.

1. Do vessels engaged in emergency operations (i.e., law enforcement, fire, rescue, emergency dam repair, etc.), national defense activities (i.e., cruisers, fuel barges, munitions ships, etc.) or channel maintenance (i.e., dredges, dam and levee repair, etc.) operate on the waterway? If yes, describe the vessels and provide the following information:

   a. Will the proposed bridge provide the horizontal and vertical clearances for the safe, efficient passage of the largest of these vessels? Why?

   b. If no, estimate the number of vessels in each of the above categories unable to pass the proposed bridge. Give the name, length overall (LOA), beam, draft, height of highest fixed point above the waterline for vessels affected by the bridge.

   c. Can these vessels be modified (i.e., folding mast, relocation of equipment, etc.) without decreasing their respective response times? If so, name the vessels.

   d. If modifications are feasible, name the vessels, state the necessary modifications, the cost of modifying each, and who will pay for the modifications (i.e., vessel owner, applicant, other).

N/A

Has the Corps of Engineers completed or does it plan to complete a federal navigation project on the waterway? If yes, provide the following information:

   a. Project name, downstream/upstream milepoints, depth, other limiting factors.

   b. The following specifications of the vessel for which the navigation project is or will be designed: LOA, beam, draft, and height of highest fixed point above the waterline.

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c. Will the proposed bridge provide the horizontal and vertical clearances necessary for the safe, efficient passage of the vessel for which the navigation project was designed?

d. If no, can the vessel be modified to clear the proposed bridge without substantially increasing its operating costs?

e. If modifications are feasible, state the necessary modifications, their costs and who will pay for the modifications.

3. **Describe the present and prospective recreational navigation:** Will the proposed bridge affect the safe, efficient movement of any segment of the present or prospective recreational fleet operation on the waterway? If yes, provide the following information:

a. State the number of and the type of vessels which may be affected by the proposed bridge. Provide the LOA, beam, draft, and height of the highest fixed point above the waterline of each affected vessel. Estimate this percentage of the recreational fleet which may be affected by the proposed bridge.

b. Will the proposed bridge eliminate the access of these vessels to existing or planned commercial, water-oriented facilities (i.e., restaurants, shops, recreational areas, marinas, etc.) in the vicinity of the proposed bridge. Describe these facilities.

c. If yes, discuss the economic impacts the restriction will have on existing or planned commercial, water-oriented facilities.

d. Is it feasible to modify the affected segments of the fleet to clear the proposed bridge without substantially increasing operating costs? If yes, name the vessels, state the necessary modifications, cost of modifying each vessel and person or entity responsible for financing the modifications.

NOTE: Check with local Corps of Engineers District Office, Chamber of Commerce or other organizations for proposed marinas, recreational areas, shops, etc.

4. **Describe the present and prospective commercial navigation and the cargoes moved on the waterway:** Will the proposed bridge affect the safe, efficient movement of any segment of the present or prospective commercial fleet operating on the waterway? If yes, provide the following information:

a. State the number of and the type of vessels which may be affected by the proposed bridge. Provide the LOA, beam, draft, and height of the highest fixed point above the waterline for each of these vessels. Estimate the percentage of the commercial fleet which may be affected by the proposed bridge.

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b. Discuss the economic impacts the restriction will have on local commercial shipping. Discuss the economic input which supports the Commandant's and DOT's strategic goals.

c. Describe any existing or planned commercial or industrial developments (i.e., manufacturing, refining, facilities, etc.) and other businesses affected by this restriction, and discuss the economic impacts the restriction will have on each business.

d. Is it feasible to modify the restricted vessels to clear the proposed bridge without substantially increasing operating costs? If yes, name the vessels, state the necessary modifications, cost of modifying each vessel and company or entity responsible for financing the modifications.

5. Will the proposed bridge block access of any vessel presently using local service facilities (i.e., repair shops, parts distributors, fuel stations)? If yes, provide the following information:

a. Describe the facilities and estimate the number of vessels currently using these facilities.

b. Provide the following specifications of vessels which will be forced to seek alternate facilities: name, LOA, beam, drift, height of the highest fixed point above the waterline.

c. What economic impact will loss of access have on these facilities? Include the estimated dollar amount to support Commandant and DOT goals.

d. What is the distance to alternate service facilities capable of servicing the affected vessels? Describe the facilities.

e. Will use of these alternate facilities substantially increase vessel operation costs or downtime?

f. Is it feasible to modify the affected vessels to clear the proposed bridge?

g. If yes, state the name, necessary modifications, cost of modifying each vessel and who will pay for the modifications.

6. Are alternate routes bypassing the proposed bridge available for use by vessels unable to pass the proposed bridge? If yes, provide the following information:

a. State the number of vessels which will be forced to use alternate routes.

b. Describe those vessels by listing the name, LOA, beam, draft, height of the highest fixed point above the waterline for each.

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c. Identify any alternate routes and provide the respective distances between the proposed bridge and these routes.

d. Will use of these routes substantially increase the transit time and/or operating costs of the affected vessels? This relates to the mobility goals of the Commandant and DOT.

e. If yes, describe the impacts of increased transit time and/or operating costs.

f. Is it feasible to modify these vessels to clear the proposed bridge?

g. If yes, state the name, necessary modifications, cost of modifying each vessel and who will pay for these modifications.

7. Will the bridge prohibit the entry of any vessels to the local harbor of refuge? If yes, describe the harbor and provide the following information:

a. What percentage of vessels currently using the harbor refuge will not be able to pass the proposed bridge to gain access to that refuge? Describe the vessels.

b. State the number of vessels, name, LOA, beam, draft, and height of the highest fixed point above the waterline for those vessels whose access to the refuge is prohibited by the proposed bridge.

c. Is it feasible to modify these vessels to clear the proposed bridge?

d. If yes, state the name, necessary modification, cost of modifying each vessel and who will pay for the modifications.

e. If alternate refuges are available, describe them and state the distance of each from the present harbor of refuge.

NOTE: A harbor of refuge is defined as a naturally or artificially protected water area that provides a place of relative safety or refuge for commercial and recreational vessels traveling along the coast or operating in a region.

8. Will the proposed bridge be located within one-half mile of a bend in a waterway? If yes, describe the bend and provide the following information:

a. Is there sufficient distance between the bridge and the bend to allow proper vessel alignment for the safe, efficient passage of vessels through the proposed bridge?

b. If no, what factors make construction of the bridge at an alternate location impractical?

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9. Are there other factors (i.e., dockages, lightering areas, existing bridges, etc.) located within one-half mile of the proposed bridge which would create hazardous passage through the proposed structure? If yes, provide the following information:

a. Describe the factors:

b. What mitigative measures do you recommend? Why?

10. Do local hydraulic conditions (i.e., wave chop, cross currents, tides, shoals, etc.) increase the hazard of passage through the proposed bridge? If yes, provide the following information:

a. Describe the conditions:

b. What mitigative measures do you recommend? Why?

11. Do local atmospheric conditions (i.e., strong, prevailing winds, fog, rapidly developing storms, etc.) increase the hazard of passage through the proposed bridge? If yes, provide the following information:

a. Describe the conditions:

b. What mitigative measures do you recommend? Why?

12. Have guide clearances been established for the waterway? If yes, provide the following information:

a. Horizontal guide clearance:

b. Vertical guide clearance:

c. Do the proposed bridge clearances differ from these guide clearances?

d. If yes, which of the above factors (1 through 11) justify deviating from these guide clearances?

13. State any other factors considered necessary for the safe, efficient passage of vessels through the proposed bridge? Are clearance gauges needed? Why?

III. ENVIRONMENTAL EVALUATION

1. **NEPA considerations:**

a. Identify lead agency:

b. Identify cooperating agencies:

c. Type of environmental document (i.e., CE, FONSI, EIS, Reevaluation):

COMMENT RESPONSE:

G6-1 A description of the proposed bridge structure and construction procedures has been added at the end of Section 2.3.3. A new Section 3.5.5 (Vessel Navigation), and a new subsection at the end of Section 4.1.2 (Vessel Navigation), have been added to the document to describe existing navigational uses and impacts from the proposed road bridge near the mine site, respectively.

G7

U.S. Department of Transportation
Federal Aviation Administration

Alaskan Region
Air Traffic Division

222 W. 7th Avenue, #14
Anchorage, AK 99513-7587
Phone: (907)271-5464
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APR 28 2003

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MAY - 1 2003
U.S. EPA REGION 10
OFFICE OF ...

United States Environmental Protection Agency, Region 10
ATTN: Ms. Hahn Gold
1200 Sixth Avenue
Seattle, WA 98101

Dear Ms Gold:

Thank you for the opportunity to review the draft Environmental Impact Statement (EIS) for the Pogo Gold Mine Project. The primary issue for our Region, as it relates to this project, is the potential for significant environmental impacts associated with the airspace requirement for the Controlled Firing Area (CFA). With that in mind, we offer the following comments for your consideration.

CFA's are established to contain activities that are conducted in a controlled manner to prevent any hazard or impact to nonparticipating aircraft. Although there is no charted airspace designation involved, or any airspace reserved for the user, CFA's are technically classified as Special Use Airspace and require documentation under the National Environmental Policy Act (NEPA).

In order to satisfy NEPA requirements, documentation must assess the environmental impact of the airspace requirement. In other words, what impact will the CFA have on noise, air quality, visual impacts, wildlife, land use, socioeconomics, natural resources, Section 303 land, and any other pertinent impact category.

In a CFA, the user agrees to keep a watch for passing aircraft and immediately terminate the hazardous activity if an aircraft approaches the area; and to adhere to certain visibility conditions to ensure the ability to observe passing aircraft. Since CFA's are not published on aeronautical charts and aircraft are not required to deviate around them, CFA's generally impose no impact to aviation and therefore require no changes to flight tracks or operating altitudes that may change noise exposure levels. However, the EIS should document that the airspace requirement will not have a significant environmental impact. G7-1

A description of the proposed lateral boundaries, minimum and maximum altitudes, and times of use of the CFA should also be included in the document. G7-2

As a side note, on page 3-118, section 3.17.2, Federally Designated Military Lands, third paragraph, second sentence, the restricted corridor centered on the Goodpastor River is actually 4 miles wide, as opposed to 5. G7-3

2

Thanks again for the opportunity to participate in this effort. If you have any questions or need additional information, please contact Clarence Goward, Environmental Specialist, Operations Branch, at (907) 271-5883.

Sincerely,

Trent S. Cummings
Manager, Air Traffic Division

COMMENT RESPONSE:

G7-1 The CFA would be established for blasting purposes. Blasting generally is expected to have minimal impacts on the resources listed in the comment, and any expected effects are discussed under each specific resource discipline.

G7-2 Text in Section 2.3.18 has been expanded to reflect the comment.

G7-3 Text in Section 3.17.2 has been redrafted to reflect the comment.

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINING, LAND AND WATER

FRANK H. MURKOWSKI, GOVERNOR

550 WEST 7TH AVENUE, SUITE 900D
ANCHORAGE, ALASKA 99501-3577
PHONE: (907) 269-8629
FAX: (907) 269-8930

June 18, 2003

Hanh Gold, NEPA Compliance Coordinator
US Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Dear Ms. Gold:

The Alaska Department of Natural Resources Office of Habitat Management and Permitting (OHMP) has reviewed the March 2003 Draft Environmental Impact Statement for the Pogo Gold Mine Project and the associated permits, and has the following additional comments. We have incorporated comments from the Alaska Department of Fish and Game's Divisions of Subsistence, Commercial Fisheries, Sport Fish, and Wildlife Conservation in the comments listed below.

Alaska Department of Fish and Game-- Division of Subsistence G8

Page 2-38, Section 2.3.26, Fish and Wildlife Protection. Subsistence Division endorses the provisions in the applicant's preferred alternative that prohibit project personnel from hunting, fishing, and trapping in the project area unless they first return to their point of origin and return to the area. The policies proposed for inclusion in an employee education program should reduce the potential for problems with bears. We recommend that workers also be informed about the seasonal movements of the Fortymile Caribou Herd in the project area, and that steps be outlined, if necessary, for avoiding conflicts with the herd. As stated in the DEIS, caribou make only light use of the project area at this time (see p. 3-82) However, migration patterns can change and would need to be addressed should if caribou spend more time in the vicinity of project operations. G8-1

Section 3.18, Subsistence. The discussion of Upper Tanana Athabaskan subsistence practices in this section is detailed and informative, and provides more contextual information than often is presented in planning documents. The first paragraph of Section 3.18.1 distinguishes between subsistence uses in the project area by Natives and non-Natives communities, apparently because Native subsistence was defined as a scoping issue. Deciding to classify non-Native subsistence uses by residents of non-Native communities as recreation activities is contrary to how these uses are categorized in state law, which considers all Alaska residents eligible to be subsistence users in the project area. Eligibility for subsistence is not determined on the basis of ethnicity or place of residence in state statute. G8-2

One way to partially correct this deficiency is to explain that some of the fish and wildlife harvest activities described in Section 3.21, Recreation, may in fact be considered subsistence uses by the

"Develop, Conserve, and Enhance Natural Resources for Present and Future Alaskans."

individuals involved. Another option is to explain the basis for classifying these activities as recreational and commercial, rather than subsistence. Additional discussion is necessary so that the presentation in this document does not misrepresent the current legal definition of subsistence uses in state law. G8-2 CONT'D.

Section 4.13, Environmental Consequences: Subsistence. Following on the comments above, this section would more accurately evaluate the environmental consequences of the various alternatives on subsistence uses by expanding the assessment to include at least some of the uses by non-Native communities. G8-3 The next to last paragraph on page 4-139 states in part, "…and if the Applicant's no hunting and fishing policy were strictly enforced, impacts likely would not affect the overall pattern of subsistence uses." G8-4 This implies that not enforcing the policy might be an alternative, which we hope the Applicant will reject as a viable option. If the policy is not going to be enforced, then other parts of the Environmental Consequences section will need to be re-evaluated.

Table 4.19.1, Summary of Cumulative Impacts, page 4-179. Some of the cumulative impacts presented for 4.12—Land Use, if an all-season road was maintained at mine closure, could also be categorized as impacts on subsistence uses, for reasons stated in our comments above. G8-5

Page 5-19, Table 5.1-3, Impacts Summary – Subsistence. Under Alternative 2, reference is made to the potential effects of opening the Shaw Creek Hillside all-season road to the public. Providing access across the Goodpaster River to recreationists and "sport hunters" is cited as a positive effect. Consistent with earlier comments, we suspect that some of the "sport hunting" activity in this area actually could be classified as "subsistence hunting" as currently defined in state statute. We again caution against misrepresentation of user group categories. G8-6

In summary, the Draft EIS effectively describes subsistence activities by Upper Tanana Athabaskan villages in the vicinity of the project area. However, it charts an unusual course in categorizing all other resource harvest activities in the area as being recreational, sport, or commercial in nature. This disregards the definition of who currently qualifies as subsistence users in state statute and may unintentionally misinform reviewers. Although the project area is not a major resource harvesting location for local residents, the actual effects on subsistence uses are misrepresented when some of the existing uses are miscategorized. The problems would be compounded if Pogo Mine operations expand over time and other development activities occur in the area and facilitate public access.

G9

Alaska Department of Fish and Game-- Division of Commercial Fisheries

(Page 4-88) **4.8.2 Gravel Sources-** Gravel pits are planned to be located in the floodplain with potential to trap juvenile chinook salmon (rearing) and to a much lesser extent outmigrating summer chum salmon after high water events. "Because the majority of spawning and likely juvenile use in the river for both Chinook salmon and grayling occurs downstream of the proposed gravel pits, impacts to the population should be low. Movement patterns of young-of the-year fish within the river, however, are unknown. These impacts could be mitigated by using crushed developmental rock, where feasible, to reduce the number and size of gravel pits, and by building perimeter berms around the gravel pits." The main gravel source (borrow) pits are to be located just upstream and downstream from the mouth of Wolverine Creek (located downstream of Pogo Creek) with G9-1

additional pits located near the 3000' airstrip upstream of Liese Creek (upstream from Pogo Creek). Both locations are within the Goodpaster River mainstem floodplain. Depending on distance of pits from the Goodpaster River and subsequent vertical elevation above OHW, the berms alone may not keep juvenile salmon or adult resident species from becoming trapped after high water events subside. Providing an outlet from these pits in addition to the perimeter berms (to prevent capture initially) could provide a means of allowing entrapped fish to return to the Goodpaster. Teck-Pogo should work with ADF&G and other state agencies to develop appropriate mitigation measures to minimize fish entrapment. Commercial Fisheries is particularly concerned with losing chinook salmon juveniles. From current information, the majority of chinook salmon do spawn below the gravel pits but a significant portion of them spawn in the proposed area and above. In 2002, 10 radio tagged adult chinook salmon were located near the mine site (Pogo Creek) or above it, and 11 were located below the mine. With movement patterns of juvenile chinook salmon within the river unknown, stating that impacts from the gravel pits should be low makes two assumptions; little spawning occurs near gravel extraction areas and juvenile chinook salmon do not move much within the drainage while rearing. It is known that significant spawning occurs in the areas already (and probably varies yearly), enough to be concerned about entrapment without knowing movement patterns of juveniles from other spawning areas not near the gravel pits. G9-1 CONT'D.

(Page 3-65) **3.13.1 Goodpaster River- Chinook salmon-** This section's first couple of paragraphs talks about aerial escapement methods, differences between helicopters and fixed-wing aerial surveys, and comparisons of the Goodpaster River chinook salmon run to the runs on the Chena and Salcha rivers. As stated: "However, this fixed wing aircraft survey method does not provide consistent indices of escapement due to variable weather, water conditions, timing, personnel, and section of river surveyed. The method has under estimated chinook salmon escapement by 71 percent in the Chena River and 57 percent in the Salcha River. Surveys using a helicopter or a boat provide a more consistent escapement index and better estimate total escapement in moderate to small-sized waters like the Goodpaster." These statements are correct, but the 71% in the Chena and 57% in the Salcha fixed-wing surveys were compared to tower counts, not helicopter surveys. To our knowledge, comparisons between fixed-wing and helicopters have not been done scientifically in Interior Alaska. Comparing total estimated escapements from towers on the Salcha and Chena Rivers to aerial index surveys whether from a helicopter or fixed-wing should not be done. Both aerial estimates are a snapshot of what is in the river at that time and does not represent the total escapement for the river surveyed. Helicopter surveys are affected by the same weather, water conditions, etc. stated above. Helicopters should give a more accurate number compared to fixed-wing aircraft given all the same conditions, but should not be used to attempt to estimate total abundance. Comparing towers to aerial surveys within the same river is reasonable, but comparing different systems (Chena and Salcha rivers) may downplay the size of the chinook salmon run on the Goodpaster River, making it look insignificant in comparison. In 2000, the Chena River had an estimated total escapement of 4,462 chinook salmon (tower estimate) while the Goodpaster River had an aerial estimate of 2,240 (helicopter survey). The 2,240 salmon on the Goodpaster River should be considered a minimum estimate, even though it was derived from a helicopter survey. With the Chena River being one of the largest (Salcha River the other) chinook salmon spawning rivers in the Alaskan portion of the Yukon River drainage, it appears that the Goodpaster River may contribute more to the drainage wide chinook salmon run than previously thought and may approximate returns to the Nulato River. G9-2

In 2002 (the EIS only covers work up to and including 2000) peak chinook salmon spawning was judged to have taken place on approximately July 20, which is 10 days earlier than stated as the approximate peak (August 1) in the EIS. If peak of spawning occurred on July 20, then entry into the Goodpaster more than likely was well prior to mid-July as stated as the time for first entry of chinook salmon into the river system. Furthermore, in 1998 a survey flown on July 15 counted 142 chinook salmon above Central Creek (Central Creek is approximately 61 miles from mouth) to the Eisenmenger forks near the headwaters. These chinook salmon had to have entered the river well prior to the stated entry date of mid-July. Entry times for migration and peak spawning will vary from year to year and should be noted as approximate times for upstream migration and peaks of spawning. Periodicity tables should be conservative to allow for varying run timing. Currently, upstream migration in the table (3.13-3) covers the 2nd to 4th weeks of July, and spawning the 4th week of July to the 2nd week of August. All of July should appear in the periodicity tables for upstream migration, and spawning should include the 2nd and 3rd weeks of July. G9-2 CONT'D.

The lower ¾ mile of Wolverine Creek was found to be a chinook salmon rearing area. As noted in the gravel section, Wolverine Creek is the entry point to the Goodpaster River floodplain for all three proposed road routes. This entry point in conjunction with proposed gravel extraction near the creek may have impacts on future availability of this portion of the creek for rearing. Care should be taken with road and gravel pit work in this area. G9-3

(page 3-66) **Summer chum salmon.** Escapement information on summer chum salmon in the Goodpaster River is limited to observations made while assessing chinook salmon. Due to the later run timing, this information is minimal at best. The majority of observed summer chum salmon activity is below Central Creek and thus below the immediate mine site. But summer chum salmon would be subject to deleterious effects from downstream movement of spills, etc from the mine site. Chinook salmon were the major "indicator" species identified for study but chum salmon have a different life history. Since chum salmon life history specific to the Goodpaster River is lacking, it is unlikely the periodicity table for this species has as narrow a window (4th week of July to 2nd week of August for upstream migration and first three weeks in August for spawning) as in Table 3.13-3, and should be more conservative in scope. If the Salcha River is used as an example for upper Tanana River summer chum salmon stock timing, then the periodicity table should be extended at least into the beginning of September if not further. In 2001, approximately 850 summer chum salmon were counted past the tower in the Salcha River from September 1 through September 18. G9-4

Alaska Department of Fish and Game-- Division of Sport Fish G10

In summary, the resident and anadromous fish issues regarding this project have, in our opinion, been very well researched and addressed within the EIS. Regional and area staff reviewed pertinent sections of chapters 3 (3.5, 3.7, 3.12, 3.13, 3.18) and 4 (4.2, 4.3, 4.8, 4.13, and 4.16).

The Arctic grayling population that utilizes this drainage is complex and seasonally variable with components of the population contributing to numerous fisheries within the Tanana River Drainage. There are some natural impediments to boat access (log jams) that restrict fishing effort and therefore allow Shaw Creek to function as a refuge. However this has also restricted our efforts to G10-1

fully catalog the exact seasonal locations of Arctic grayling outside of the major drainage tributaries. We also have some concern regarding the paucity of data available for the other nine species of fish that are known to inhabit this drainage. We believe that with some attention afforded to catalog and inventory work our current concerns regarding distribution of fish species within the Shaw Creek drainage could be alleviated. The Shaw Creek route as described has five bridge crossings and 16 lesser stream crossings that will require culverts. The suggested catalog and inventory work is intended to fill gaps in our knowledge relative to the tributary streams and proposed crossings. This information could prove useful in culvert selection and installation for ensuring unimpeded fish passage. We hope to be able to work with Teck-Pogo during the project's life to collect additional data on the Shaw Creek drainage. G10-1 CONT'D

Alaska Department of Fish and Game-- Division of Wildlife Conservation G11

Chapter 3–Affected Environment
3.14 Wildlife
The no action alternative would have the fewest detrimental impacts on wildlife resources in the project area and is the preferred option from the wildlife perspective.

Wildlife within the Goodpaster River and Shaw Creek drainages are dependent on the aquatic ecosystem of these drainages. For example, riparian and wetland habitats provide important foraging areas for moose, predatory birds such as bald eagles and osprey are dependent on the fisheries for food, waterfowl are dependent on wetland water quality for foraging and brood rearing, furbearers such as river otters and mink are dependent on aquatic habitats for foraging, and there are many other examples. Therefore, one of the most critical aspects for DEIS review is the impact of the project on water quality.

3.14.1 Habitat Values
The discussion of wildlife habitats and their value to wildlife in the effected area is based on Jorgenson et al (2000)'s Conservation Priority Index (CPI) methodology. The DEIS states that a discussion of the methodology is beyond its scope. However, because the CPI is the basis for wildlife discussions, it should at least be included as an appendix in the DEIS so the public and agencies can effectively review and evaluate wildlife habitat issues with a clear understanding of the methodology. G11-1

3.14.3 Mammals
Moose: The DEIS states that moose are found primarily at low to mid-elevations. However, moose are also found at high elevations that contain some of the highest quality moose habitat in the affected area. G11-2

The DEIS states that most moose hunting in northern Game Management Unit 20D (GMU) occurs in the vicinity of Delta Junction and the Richardson Highway. However, the Goodpaster River downstream of Tibbs Creek is a major hunting area for northern GMU 20D. Mining activity that affects the drainage will impact a significant number of moose hunters in this area. G11-3

The DEIS fails to comment on the long-term impact to moose populations from mine development in the area. Although the density of moose in the area is relatively low at this time, the Alaska Board of Game has adopted intensive management for this area with the intent of increasing the number of moose for human consumption. The presence of the Pogo mine and other possible mining activities will cause a more conservative approach in wildfire suppression and will likely reduce the potential for increasing the number of moose within the effected area. To mitigate for potential negative impact on moose population growth, Teck-Pogo, Inc. could assist the state with prescribed wildfire burns in the Shaw Creek drainage for conversion of black spruce forest into moose browse. This would also benefit wolves and bears that prey on moose, as well as help meet the Alaska Board of Games goal to increase moose populations for human consumption. Teck-Pogo should also construct fire breaks around their facilities, and wrap powerline poles in fireproof material, so that naturally occurring wildfires can be allowed to burn without endangering mine facilities and necessitate extinguishing naturally occurring fires. G11-4

Discussion of moose harvest in the DEIS reports data for 9 Uniform Coding Units (UCUs). The Goodpaster River and Shaw Creek drainages are covered by 5 UCUs and it is not clear which additional 4 UCUs are included. G11-5

The DEIS reports that since 1984 annual moose harvest in the Goodpaster River averages 18 moose/year. This data is an underestimate for recent years. Since 1992, Goodpaster River moose harvest in UCUs 300 (nonspecific Goodpaster River), 301 (lower Goodpaster River), 302 (upper Goodpaster River), and 303 (Eisenmenger Fork) has averaged 28 moose/year by an average of 114 hunters/year. G11-6

Wildlife Conservation staff have been told by Teck-Pogo staff that their employees will not be allowed to hunt, trap, or fish while at the camp. To reduce the impact of increased moose hunting or trapping in the area, Teck-Pogo should also prohibit their employees from hunting in the area while off-duty without first returning to their home location. G11-7

Caribou
Herd estimates used in the DEIS are outdated. The Fortymile herd numbered about 45,000 caribou in fall 2002. The continued increase is still due to the causes listed in the draft. G11-8

The DEIS states that calving takes place well to the north and east of the claim block. The important information for Pogo is that the mine is located away from calving habitat. However, calving commonly takes place within 20 miles in areas that are being actively explored for minerals. Any development of future discoveries most likely would want to take advantage of the transportation and power corridors to Pogo. There needs to be some treatise of how these in place transportation corridors will be used as these decision could have much greater effects on the Fortymile herd. G11-9

The DEIS states that the claim block lies southwest of areas used by radio collared female caribou of the Fortymile herd during all seasons except rut and winter. However, this represents one-half of the year and is therefore of critical importance. Fortymile caribou use of the Goodpaster River will probably increase as herd size increases. This area contains a mosaic of habitat types offering preferred forage species throughout the year. G11-10

Brown Bear
Human activity and development generally have overall negative impacts on large predators such as black bears, brown bears, and wolves, resulting in reduced numbers of these species. Therefore, a reduction in these species should be anticipated in the effected area.

The DEIS should note that brown bear habitat in northern GMU 20D does include lowlands as well as uplands and is verified by reports in the DEIS that brown bears have been observed by Pogo-Teck staff at the lowland camp. G11-11

Population data for brown bears reported in the DEIS is 92 bears $\geq$2 years old for northern GMU 20D. The actual estimate is 92–109 bears. The DEIS also states that bear densities in northern GMU 20D are low relative to other subunits in GMU 20, however, that is not the case in northern Unit 20D where the density is probably near natural densities. G11-12

A typographical error in the DEIS reports the moose calf survival objective to be 30 calves:1000 cows instead of 30 calves:100 cows. G11-13

The DEIS inaccurately states that attempts to increase brown bear harvest in northern GMU 20D have been largely unsuccessful. However, these efforts have actually been moderately successful with mean annual harvest increasing from 1 bear/year to 3 bears/year and the range of annual harvest increasing from 0–2 bears/year to 1–7 bears/year in the last 7 years with more liberal hunting regulations. Harvest was probably not high enough to cause a population reduction but as the number of hunters increase, bear harvest is also expected to increase and could exceed sustainable. G11-14

A recent observation by Wildlife Conservation staff of brown bears feeding on chinook salmon in the Goodpaster River should be included in the DEIS. As the number of fish in the chinook salmon run increase as noted in Table 3.13–1, this resource will become increasingly important to bears. There is an abundance of literature that discusses the importance of salmon streams to interior grizzly bear populations. Factors that may degrade river water quality or salmon habitat would also negatively impact bears. G11-15

The DEIS states that garbage will be incinerated to prevent bears and other wildlife from feeding on it. An additional mitigating action that may be necessary around highly aromatic sites is the construction of electric boundary fences to discourage bears from visiting the sites. G11-16

Wolf
Human activity and development generally have overall negative impacts on large predators such as black bears, brown bears, and wolves, resulting in reduced numbers of these species. Therefore, a reduction in these species should be anticipated in the effected area.

The DEIS states that 1–2 packs have been known to range in the project area. This wording implies that wolves occasionally use the area. If the project area includes the road access route through the Shaw Creek drainage, the area includes 2–3 permanent packs, with the possibility of additional single wolves or pairs. G11-17

Wolves using the den site noted near the vicinity of Indian Creek will likely abandon the site as mine and airstrip development increases in the area. G11-18

Furbearers
Several furbearer species including mink, river otter, beaver, and muskrat use aquatic habitats that will be directly impacted by water quality of the Goodpaster River and Shaw Creek. Wildlife Conservation staff recognize that water quality is a critical aspect of the DEIS but do not have adequate expertise to evaluate water quality issues and are depending on the Environmental Protection Agency and Alaska Department of Natural Resources to review and evaluate these aspects of the DEIS.

Furbearer species that are sensitive to disturbance from human activity will be displaced from the area and their habitat will be fragmented. These species include wolverine, lynx, and marten. G11-19

The DEIS should discuss lynx in the furbearer section. G11-20

Chapter 4–Environmental Consequences
4.9.2 Options Common to All Alternatives
The DEIS states that habitat loss for birds and mammals will generally be low. However, it should be noted that the overall effect for the area will be a cumulative loss of wildlife habitat for a number of different species that could be exacerbated with additional future development in the area. G11-21

The DEIS discusses the potential for black bears being attracted to garbage, however, it should be noted that brown bears will also be attracted. G11-22

4.9.3 Options Not Related to Surface Access
Alternative 2 and 3: Power Line
The public will likely use the proposed power line right of way for ATV access into the area. Thus the power line will provide public access into a remote, relatively inaccessible area, regardless of road access status. The greatest wildlife impact will result from increased use by moose, caribou, and bear hunters resulting in increased harvest for these species. More restrictive hunting regulations will likely be required to compensate for increased access and harvest. G11-23

4.9.4 and 4.9.5 Options Related to Surface Access and Cumulative Impacts
Wildlife Conservation concurs with the DEIS that "the absence of an all-season road would reduce direct and indirect impacts on wildlife, particularly caribou" and support this option.

However, recognizing that construction of an all-season road is likely, we recommend Surface Access Route Alternative 2, the Shaw Creek Hillside all-season road. The Shaw Creek Hillside route will have the least impact on high quality moose and caribou habitat. Any route however, will increase hunter access into the area via the road or the accompanying power line and will necessitate a review of hunting and trapping regulations and likely further restrictions. We expect especially during the winter, high public use of this road for caribou hunting increasing conflict between industrial use and hunters. We recommend that the road and adjacent powerline be closed to public access during the life of Pogo mine. G11-24

An all-season road will likely provide access to other potential mine sites such as Sonora Creek, Slate Creek, or others. Although the DEIS states that the direct loss of wildlife habitat from additional mining activity is low relative to each site, it should be noted that the cumulative effect of these activities will further reduce wildlife numbers and diversity within the area. G11-25

Thank you for the opportunity to provide comments. If you have any questions, please contact me at 907-269-8629.

Sincerely,

/S/

Ed Fogels
Large Mine Project Manager

Cc (by e-mail):
Victor Ross, ACOE
Mike Smith, Baker
Karl Hanneman, Teck-Pogo
Jack Winters, DNR OHMP

COMMENT RESPONSE:

G8-1 Thank you for your comment.

G8-2 The text in Section 3.18.1 has been redrafted to reflect the comment.

G8-3 The text in Section 4.13 has been redrafted to reflect the comment.

G8-4 The Applicant intends to implement an employee no hunting or fishing policy (Section 2.3.26).

G8-5 The impacts presented for land use at 4.12 in Table 4.19.1 do affect subsistence impacts as discussed at 4.13 immediately following in the same table.

G8-6 The text under Alternative 2 at 4.13 in Table 5.1-3 has been redrafted to reflect the comment.

COMMENT RESPONSE:

G9-1 The text in Section 4.8.2 has been redrafted to reflect the comment.

G9-2 The text in Section 3.13.1 regarding chinook salmon has been redrafted to reflect the comment.

G9-3 Thank you for your comment.

G9-4 The text in Section 3.13.1 regarding chum salmon has been redrafted to reflect the comment.

COMMENT RESPONSE:

G10-1 Thank you for your comment.

COMMENT RESPONSE:

G11-1 A new Appendix A.3 has been added to describe the Conservation Priority Index methodology.

G11-2 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-3 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-4 Text has been added to Section 4.9.2 to reflect the comment.

G11-5 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-6 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-7 The reader is referred to Section 2.3.26.

G11-8 Text has been added to Section 3.14.3 to reflect the comment.

G11-9 The reader is referred to Section 4.9.5.

G11-10 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-11 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-12 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-13 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-14 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-15 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-16 The reader is referred to Section 2.3.15.

G11-17 Text in Section 3.14.3 has been redrafted to reflect the comment.

G11-18 Text in Section 4.9.2 has been redrafted to reflect the comment.

G11-19 Text in Section 4.9.2 has been redrafted to reflect the comment.

G11-20 The reader is referred to Section 3.15.

G11-21 The reader is referred to Section 4.9.5.

G11-22 Text in Section 4.9.3 has been redrafted to reflect the comment.

G11-23 Text in Section 4.9.3 has been redrafted to reflect the comment.

G11-24 Thank you for your comment.

G11-25 Text in Section 4.9.5 has been redra

Appendix E.H

Response to Comments on Draft EIS
Applicant Comments

H1

teckcominco

May 13, 2003

Hanh Gold
NEPA Compliance Coordinator
U.S. Environmental Protection Agency
1200 Sixth Avenue, OW-130
Seattle, WA 98101

Re: **Comments on Pogo DEIS**

Dear Ms. Gold:

This document provides Teck-Pogo Inc.'s (Teck-Pogo) comments on the Draft Environmental Impact Statement (DEIS) for the Pogo Gold Mine Project. In general, Teck-Pogo finds the document to be a credible description of the project and its potential effects. Teck-Pogo acknowledges the considerable effort put forth by the agencies and the EIS team to evaluate the project data and appreciates the opportunity to respond to questions and provide input to the analysis.

Support for Preferred Alternative and Alternative Management Option

Teck-Pogo encourages adoption of the preferred alternative for all options identified in Tables 5.3-1, 5.3-2, and 5.3-3 of the DEIS with the exception of the Surface Access Use option of Table 5.3-3. Regarding surface access use of the Shaw Creek Hillside all-season road, Teck-Pogo supports adoption of the more detailed alternative developed in the DNR draft decision called the Alternative Management Option, as summarized in Attachment 7 of Appendix D.3 of the DEIS.

The company originally proposed an industrial all-season road to access the project. The company also proposed to reclaim the entire road at the end of the mine. In the DEIS, this approach was selected as the environmentally preferred alternative by the agencies. For the reasons set forth in the document, however, the agency preferred alternative was to open the portion of the road adjacent to the State Forest to the public and to leave it intact at the end of the mine life. H1-1

Teck-Pogo strongly opposes opening any portion of the road to the public during the project life, as doing so would present unacceptable safety and liability risks to the company.

The Alternative Management Option strikes a reasonable balance by allowing the project to proceed while maximizing public safety, minimizing project liability risks, and minimizing potential short-term environmental effects. Selection of the Alternative Management Option is an appropriate compromise between the environmentally preferred alternative and the agency preferred alternative and is the access use strategy that should be adopted by the agencies.

Teck-Pogo Inc.
3520 International Street, Fairbanks, Alaska 99701 ■ telephone: 907 455.8325 ■ facsimile: 907 455.8326

Support for an efficient EIS and Permitting Timeline

Effective use of the winter road will be critical to the successful launch of the Pogo project. Teck-Pogo is concerned about the potential cost and schedule implications that further delay will have on the project and would offer to work with the agencies to develop a schedule for the remaining EIS and permitting tasks that will allow effective use of the winter road this winter. H1-2

Sincerely,

Karl Hanneman

Karl Hanneman
Alaska Regional Manger
Teck-Pogo Inc.

Cc: Ed Fogels
Bill Riley
Hanh Gold
Victor Ross

COMMENT RESPONSE:

H1-1 This issue will be addressed in ADNR's final decision for issuance of the ROW which will occur after publication of this FEIS.

H1-2 The agencies will work with the Applicant to minimize delay and develop a realistic schedule.

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3520 International Street, Fairbanks, Alaska 99701 ■ telephone: 907 455.8325 ■ facsimile: 907 455.8326

H2

teckcominco

May 13, 2003

Ed Fogels
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577

RE: Teck-Pogo Inc. comments on draft Pogo Project Right-of-Way ADL 416809

Dear Mr. Fogels:

Teck-Pogo Inc. (Teck-Pogo) is pleased to submit the following comments on the March 14, 2003 public review draft of the Pogo Project Right-of-Way Proposed Decision, ADL 416809, as published in Appendix D.3 of the draft Environmental Impact Statement for the Pogo Project.

General Comments

Teck-Pogo recommends that DNR adopt the Alternative Management Option as identified in Attachment 7 of Appendix D.3. Teck-Pogo believes that this option will result in greater benefits to the State as follows:

- -increased safety for public
- -reduced short term impacts to subsistence, trapping, and commercial recreation
- -reduced short term impacts to wetlands from ORV use
- -increased revenue to the State from right-of-way fees
- -increased revenue to the State from material sales
- -increased revenue to the State from timber sale receipts
- -reduced traffic on existing Shaw Creek road
- -no change to existing public access to region

The benefits to the project come from increased safety for employees and contractors and reduced liability associated with managing public on a road designed for industrial use. H2-1

Teck-Pogo understands that DNR will use public comments to help determine the preferred location for the staging area. If DNR determines that these public comments encourage the sub-option which is adjacent to the Richardson Highway, it will likely be because of the reduction in traffic volumes on the existing Shaw Creek Road. Teck-Pogo does not believe it would be reasonable to require this mitigative measure to reduce traffic volume(moving the staging area to the Richardson) while at the same time leaving the Shaw Creek Hillside route open to the public and thereby encouraging more traffic volume on the existing Shaw Creek Road. H2-2

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Specific Comments on Attachment 6, Pogo Project Road Right-of-Way Special Stipulations

2. Indemnification
This indemnification is over-broad. Teck-Pogo will propose language more specific and more appropriate for the project.

5. Performance Guaranty
Teck-Pogo will work with DNR to provide a form of financial assurance that is both cost efficient for the company and acceptable to the Division.

6. Insurance
Teck-Pogo has not reviewed the insurance requirements of the Millsite Lease.

8. Alaska Historic Preservation Act
Teck-Pogo believes that it would be appropriate to refer to the approved PA for the project.

9. Termination
Teck-Pogo does not believe this provision is reasonable and would ask for further clarification as to the rationale.

12. Survey
Teck-Pogo suggests that reasonable survey standards be established in advance.

16. Violations
Teck-Pogo intends to comply with all applicable laws, statutes and regulations. However, having an inadvertent failure to comply potentially result in revocation of the ROW places unreasonable financial exposure on the company and is unacceptable.

18. Term
It is not certain the road construction and the as-built survey will both be completed within one year. Teck-Pogo recommends that the early entry authorization term be 18 months.

23. Forest Resources
Teck-Pogo is concerned that it will be held to a higher standard of forest resource management than the DOF timber harvest activities in the region. Teck-Pogo believes timber salvage should be focused only on marketable timber, regardless of species. In commercial stands of white spruce, 9"DBH, topped at 6", should be the criteria. Tops and slash should be managed in similar fashion to the DOF timber harvest activities in the region.

27. Fuel and Hazardous Substances
During discussions following the Access Alternatives working group beginning in May, 2000, the State specifically discussed and approved in concept that the use of double walled fuel tanks, if the fill and dispensing features were of the approved design, would be acceptable H2-3

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Comments on Draft Right of Way ADL 416809
May 13, 2003
Page 3 of 3

secondary containment for the highly mobile needs of road construction on the Shaw Creek Hillside route. This provision should be included here as the rule, rather than an exception.

Teck-Pogo would also like to work with the State to develop reasonable language regarding fuel transfers. While having appropriate response equipment on hand is necessary, additional discussion in necessary to develop a reasonable approach to secondary containment or surface liners for all of the various vehicles involved in road construction. H2-3

Thank you for the opportunity to comment.

Sincerely,

Karl Hanneman

Karl Hanneman
Alaska Regional Manger
Teck-Pogo Inc.

Cc: Hanh Gold
Bill Riley

Teck-Pogo Inc.
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COMMENT RESPONSE:

H2-1 Thank you for your comment. This issue will be addressed in ADNR's final decision for issuance of the ROW which will occur after publication of this FEIS.

H2-2 Thank you for your comment. This issue will be addressed in ADNR's final decision for issuance of the competitive land lease which will occur after publication of this FEIS.

H2-3 Thank you for your comments. ADNR will consider these comments and work with the Applicant to resolve issues leading to ADNR's final decision for issuance of the ROW which will occur after publication of this FEIS.

H3

teckcominco

May 13, 2003

Office of Water Director
U.S. EPA Region 10
1200 Sixth Avenue
OW-130
Seattle, WA 98101

Re: Teck-Pogo comments on Pogo draft NPDES permit AK-005334-1

Dear Sir:

Teck-Pogo Inc. appreciates the opportunity to submit the following comments on the March 14, 2003 public review draft of NPDES permit AK-005334-1 and the accompanying March 14, 2003 Fact Sheet, both of which were published in Appendix B of the draft Environmental Impact Statement for the Pogo Project.

DRAFT PERMIT

I.A. Effluent Limitations and Monitoring – Outfall 001

I.A.1. Table 1

Chromium. The chromium sampling protocol is problematic as Teck-Pogo will not be able to routinely achieve the 24 hour holding time for chromium VI. Due to the holding time limitation, one cannot take a routine chromium total sample, have it analyzed, and then assess whether the chromium VI analysis must be completed. Each chromium sample taken has to be collected and handled as if it is will be analyzed for chromium VI. Even if it is conceivable that one could achieve the holding time, it would only be possible by arranging for special air transport of the sample from site, coordinating with an express parcel service in Fairbanks such as Alaska Airlines Goldstreak, and then hope that it could get to a lab and be processed in a timely fashion. It is not reasonable to expect such a process to be completed, especially since the holding time limitation would not likely be met even then. A weekly requirement is unreasonable given the lack of significant risk associated with chromium. H3-1

Chromium is not expected to be a parameter of significant concern. Baseline sampling in the Goodpaster River showed a maximum total chromium value of 5 ug/L, with an average of 0.9 ug/L. Water quality during the Pogo WTP Softening Trial (Appendix A of Pogo June 2002 WMP Supplement) showed no detectable total or dissolved chromium in mine water, plant feed, or plant effluent. The conservative model used for water quality predictions provides a 95% annual maximum dissolved value of 13.1 ug/L. Therefore Teck-Pogo recommends that the requirement to sample chromium, both total and VI, be eliminated. In the alternative, chromium total could remain as part of the routine sampling, with the chromium VI requirement done quarterly (with the results likely qualified for exceedance of holding time). H3-2

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Sample Frequency. The requirement for weekly effluent sampling is excessive in the long term. Teck-Pogo recommends that the following footnote should be added to Table 1:

"After consultation with EPA and ADEC, the sampling frequency shall decrease to monthly if, after 2 years, this discharge has been in compliance for 6 consecutive months." H3-3

Total recoverable vs. dissolved. Teck-Pogo Inc. is concerned that the requirement in the permit to analyze for and report metals as total recoverable instead of dissolved is not consistent with what had been discussed between the agencies and was not what was expected by the permittee or by DEC. The objective of working with DEC and EPA on adoption of the proposed standards was to move the project in the direction of better science and to provide for the use of the dissolved criteria. Teck-Pogo views this issue as the most substantive issue in the draft that must be resolved. Teck-Pogo would recommend that Footnote 1 in Table 1 and Table 2 should apply only to the column with current standards, and that a new footnote be added to the final permit if/when the proposed standards are adopted as follows: H3-4

"These parameters shall be collected and analyzed as dissolved, then converted by the appropriate translator and reported as total recoverable."

Footnote 3. For clarity, recommend deletion of the phrase "Reporting is required within 24 hours of a maximum daily limit violation" and leave the reference to Permit III.G., which states that "The permittee must report the following occurrences of noncompliance by telephone within 24 hours from the time the permittee becomes aware of the circumstances:" This more detailed language is more appropriate and a reference to Permit III.G in the footnote would be adequate. H3-5

A new provision should be added after I.A.4.

Baseline sampling indicates that the natural condition of the Goodpaster River may exceed the criteria for some parameters some of the time. Teck-Pogo must not be exposed to "exceedances" that are beyond its control. Therefore, a new provision should be added after I.A.4. as follows:

"If the actual natural condition of a sample taken from the Goodpaster River concurrent (within an hour) with an effluent sample from Outfall 001 is of lower quality than the water quality criterion set out in 18 AAC 70.020(b) for a parameter listed in Table 1, the natural condition constitutes the applicable water quality criterion and the natural condition constitutes the Table 1 effluent limitation only for that effluent sample. The permittee is not required to take a natural condition sample except for turbidity, but may do so as an affirmative defense of an Outfall 001 exceedance." H3-6

I.A.6.

Teck-Pogo recommends that this provision be deleted. The outfall flow from Pond 2 will be by gravity and will be controllable only to the extent of being either fully open or fully closed. Under normal circumstances, flow through the system will be controlled by monitoring flow in the water treatment plant effluent, then controlling the pump between Pond 1 and Pond 2 to obtain the 25:1 ratio. However, as described on Page 4-45 and 4-46 of the DEIS, in the event of H3-7

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a water treatment plant upset and possible shutdown, the system has the capability of providing residence time in Pond 2 and continued pumping and additional dilution even if there was no flow from the water treatment plant. The EIS did not contemplate directly linking outfall flow to water treatment plant flow, as this would prevent using the protective features of the system. The continuous flow limitation of the entire system (Table 1), together with the flow limitation from the water treatment plant (Table 2), is sufficient. H3-7 CONT'D.

I.B. Effluent Limitations and Monitoring – Outfall 011

I.B.1. Table 2

The technology based effluent limitations at 40 CFR 440.104(a) do not include iron. Therefore, the effluent limitation for iron should be removed from Table 2. Due to the use of iron in the ferric co-precipitation plant, Teck-Pogo would consider it appropriate for iron to remain in the parameters list in Table 2 for monitoring in order to assess the characteristics of the waste stream. It should be noted that some iron removal is expected in Pond 2 of the off-river treatment works and the impact of iron on the environment is expected to be low (page 4-45 of DEIS). H3-8

I.C. Effluent Limitations and Monitoring – Outfall 002

I.C.1. Table 3

Sample frequency. The weekly sampling frequency is atypical for domestic waste treatment facilities in Alaska. Two years is an excessive amount of time to prove successful commissioning of the treatment facility. Teck-Pogo recommends that weekly sampling be required for 6 months, followed by monthly sampling for an additional 6 months, after which sampling frequency may be reduced to quarterly in accordance with a revised Footnote 3. H3-9

Fecal coliform. The fecal coliform sample frequency is excessive given the critical 6 hour hold time. This EPA requirement is much more stringent than the 30 hour fecal coliform holding time that is typical in many remote treatment plants operating in the State of Alaska under State permits. The plant operating performance will be controlled by the TSS and the more frequent TSS samples will be able to demonstrate plant performance. Only periodic fecal coliform sampling is necessary to develop a reasonable correlation with TSS and plant performance. The fecal sample frequency should start off at monthly, with reduction to quarterly in accordance with a revised Footnote 3. H3-10

I.C.5

This provision should specify whether the compliance level is to be a daily maximum, a 7-day average, or a 30-day average. H3-11

1.D. Whole Effluent Toxicity Testing Requirements

1.D.1.

In order to conform to the sample split requirements of this provision and the sampling requirements of provision I.D.2.a, the first sentence of this provision should provide additional clarity by stating: H3-12

"Toxicity testing must be conducted on a single grab sample of effluent."

I.D.2.a.

Annual testing should be completed early enough each year to allow follow-up accelerated testing to occur if necessary. Therefore Teck-Pogo recommends that the first sentence of this provision be modified as follows:

"For Outfall 001, chronic tests must be conducted once per year prior to August."

I.D.2.b

The results should be reported for both species and each endpoint during the screening period. After the screening period, results shall be reported only for the most sensitive species and endpoint determined during the screening period. If no toxicity is observed in either species during the screening period, monitoring shall continue with the fathead minnow on the rationale that it most closely represents the salmonids of concern in the Goodpaster River, as well as the fact that the fathead minnow was the species with a minor toxicity effect observed from ambient water from Liese Creek during baseline work.

I.D.4.

Teck-Pogo believes that this provision should refer to paragraphs I.D.6.and I.D.7 rather than I.B.6. and I.B.7.

I.D.5.c.iii.

Baseline work indicates some minor toxicity of uncertain persistence. In order to reduce the potential for artifactual, receiving water caused WET test failures, Teck-Pogo recommends the use of laboratory synthetic dilution water in WET testing rather than use of receiving waters for dilution. H3-12 CONT'D.

I.D.6.c.

The permit states that exceedance of the 2 TU target results in the initiation of accelerated testing to consist of four additional tests conducted every two weeks. Failure of any one of these accelerated tests results in the required initiation of a toxicity reduction evaluation (TRE). This requirement is not reasonable for the reasons noted below.

Integral to completion of a TRE are activities to identify the toxin(s) in question, generally accomplished through use of a toxicity identification evaluation (TIE). The successful completion of a TIE, and hence a TRE, requires the presence of consistent and persistent toxicity. It is very difficult, if not impossible, to successfully complete a TIE on an effluent that only exhibits sporadic toxicity since toxicity must be present during the TIE activities. Further, it is impossible to "reduce toxicity" when it is not present.

As such, any WET test that exceeds the trigger should first lead to the initiation of efforts to establish a "pattern of toxicity" - i.e., the presence of consistent and persistent toxicity. Simply failing one of four accelerated tests, especially at the thresholds contemplated, does not confirm the presence of consistent and persistent toxicity that may be actually identified and/or reduced during the TIE/TRE studies. Therefore Teck-Pogo recommends that the permit should recognize that a pattern of toxicity can only be reliably established by failure of two consecutive accelerated tests.

Results of toxicity testing are to be reported as chronic toxic units (TU_c) which are to be calculated as TU_c = 100/No observed effect concentration (NOEC). NOEC values are generally determined with an alpha level of 0.05, meaning that statistical significance (or lack thereof) is determined with 95% confidence. This leaves a 5% chance of detecting a false positive, or a test failure when no toxicity actually exists. Over the course of many tests, the cumulative chance of a false positive rises to near certainty.

The deficiencies in NOEC can often be remedied by calculating an inhibition concentration, or 25% reduction in organism performance, (IC_{25}) test statistic for each chronic test. The IC_{25} metric is a point estimate that allows a measure of the magnitude of the biological impact to be calculated. As such, it can provide more information than a NOEC, which is restricted to the tested concentration series. However, there are potential problems with the current U.S. EPA methodology for determining IC_{25} that need to be considered when interpreting the data.

Therefore given the strengths and weaknesses of each method, Teck-Pogo would recommend that the permit require both to be calculated during the accelerated testing. If effluent toxicity is real, the results of the NOEC and the IC_{25} should be similar. Substantially different values for the NOEC and IC_{25} metrics indicate the presence of a potential false positive "hit" for toxicity. Inclusion of both the NOEC and the IC_{25} approaches is the only method approved by the U.S. EPA to identify false positive results. Therefore, Teck-Pogo recommends that this provision be modified to read as follows: H3-12 CONT'D.

"If no two consecutive tests of the four accelerated tests exceed a TU_c value of two, when calculated using both the NOEC and IC_{25} approaches, the permittee may return to the normal testing frequency. If any two consecutive accelerated tests exceed a TU_c value of two, when calculated using both the NOEC and IC_{25} approaches, then the TRE requirements in Permit Part I.D.7. shall apply."

I.D.6.d.
The last sentence of this provision should be deleted, as the pattern of toxicity should be reliably established in accordance with I.D.6.c. before the TRE requirements would be meaningful.

I.D.7.a
The phrase "within two weeks of receipt of the test results that indicate that a TRE is required under I.D.6.c " should be included.

I.D.8.a
The results of the annual toxicity tests should be submitted with the Annual Water Quality Monitoring Summary report.

I.E. Surface Water Monitoring

I.E.1.
Replace "summer" with "open water conditions" and replace "winter" with "freezing conditions". H3-13

I.E.3.
Teck-Pogo would suggest that a more focused parameters list is appropriate for Table 4. While the parameters in the draft table were analyzed during baseline sampling, much of the baseline data for some parameters either exhibit a pattern of near "non-detects", consistent values well below any applicable water quality standards, would not be expected to be detected at environmentally sensitive levels, or would not provide meaningful information. A recommended parameters list is presented below:

Table 4
Surface Monitoring Parameters

pH	TDS	Iron
DO	TSS	Lead
Conductivity	Hardness	Manganese
Temperature	Cyanide-WAD	Mercury
Turbidity	Aluminum	Nickel
Chlorides	Arsenic	Selenium
Nitrates	Cadmium	Silver
Sulfates	Chromium	Zinc
Alkalinity	Copper[2]	

H3-14

I.E.5.
It may not be possible to comply with both the requirement to do individual whole body analyses of juvenile Chinook salmon and the requirement to do all sample collection and analysis in accordance with the published EPA QA/QC procedures. Dry weights of the individual juvenile salmon are very near the lower threshold required for laboratory QA/QC procedures. However, laboratory requirements are both changing and lab-dependent. Using the individual whole body analysis seems to be an appropriate means of both getting reasonable information and minimizing the number of fish sacrificed. Teck would ask that phase "Notwithstanding the provisions of Section F. ….with respect to minimum sample weight" be added at the beginning of this section. H3-15

I.E.6.
Results from monitoring required from Tables 1,2 and 3 will be submitted monthly and will thereby provide adequate notice to EPA of operational compliance. It does not seem reasonable to require submission of the surface water monitoring results at various times during the year and then again in the annual report. The surface monitoring results can serve little purpose without the context of the annual information. Therefore, Teck-Pogo recommends that all surface water monitoring results be submitted with the Annual Water Quality Monitoring Summary report. H3-16

I.E.7.

The Annual Water Quality Monitoring Summary report should be submitted on March 1. This coincides with the DEC annual report and allows time for all year-end samples to be analyzed and the results compiled.

The annual report should include an electronic version of all historical data, but the hardcopy provided should only relate to the evaluation of the results. H3-17

II. Best Management Practices Plan

Teck intends to develop a comprehensive Environmental Management System (EMS) for construction and operation of the Pogo project. Teck-Pogo had intended that this EMS would not only incorporate the elements of the BMP plan described in II.D, but that it would also incorporate many additional details and procedures above and beyond the BMP plan requirements. However, the proposed language and structure of the permit and fact sheet is a disincentive to developing a comprehensive EMS. While one of the objectives of the EMS will be to ensure compliance with the NPDES permit and effluent limitations, the EMS will be a complex system and a minor oversight or omission in execution of all of the details of the EMS should not be interpreted as a violation of the NPDES permit as is contemplated by EPA on page 15 of the Fact Sheet. Teck-Pogo is seriously concerned about this statement in the Fact Sheet.

Teck-Pogo believes that the language presented in this section II is overbroad, and when taken together with the statement on page 15 of the Fact Sheet, is beyond the authority of EPA. Certainly EPA has the ability to require a BMP plan. However, the EPA regulations at 40 CFR § 122.44(k) contain a note stating that the listed guidance manuals provide "additional technological information on BMPs and the elements of BMPs," and that "these EPA guidance documents are listed here only for informational purposes; they are not binding and EPA does not intend that these guidance documents have any mandatory regulatory effect by virtue of their listing in this note." H3-18

Teck-Pogo recommends that language be added to clarify that EPA's authority via a BMP plan is limited by Section 304(e) of the CWA, which speaks to the supplement of effluent limitations regulating "toxic or hazardous" pollutants, and to the control of "plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage which the [EPA] Administrator determines are associated with or ancillary to the industrial manufacturing or treatment process . . . and may contribute significant amounts of such pollutants to navigable waters." Deviations from the BMP plan should not be considered NPDES permit violations unless they contribute to an exceedance of the permit effluent limitations.

III. Monitoring, Recording, and Reporting Requirement

III.B.

Teck-Pogo will not be able to comply with the provision to submit the DMR's by the 15th of each month. Samples taken near the end of the month will not have results available in time to submit by the 15th. With potential lab errors or sampling problems, Teck-Pogo must be afforded the opportunity to sample late in the month. EPA will be notified within 24 hours of any results that exceed the maximum daily limitation. Therefore, EPA will be kept fully informed and Teck-Pogo recommends that the DMR's be submitted by the end of the following month. H3-19

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III.D.

The last paragraph of this provision is ambiguous and should be clarified that it relates to sampling related to monitoring locations identified in the permit.

III.E.4.

The name of the individual should be included if the sample is analyzed onsite. If the sample is analyzed at a lab, the name of the lab, not the individual who performed the analysis should be included in the records H3-19 cont'd.

FACT SHEET

Page 1 – Replace TeckCominco with Teck-Pogo Inc. in the title and in the first paragraph. H3-20

III.B. Water Quality Standards

Teck-Pogo believes that the criteria of aluminum, cadmium, and manganese are more restrictive than necessary to protect the designated uses of the waterbody. Teck-Pogo will be requesting that the State of Alaska review these criteria in the next tri-ennial review.

Thank you for the opportunity to comment.

Sincerely,

Karl Hanneman

Karl Hanneman
Alaska Regional Manager
Teck-Pogo Inc.

Cc: Cindi Godsey
Hanh Gold
Bill Riley
Pete McGee
Ed Fogels

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3520 International Street, Fairbanks, Alaska 99701 ■ telephone: 907 455.8325 ■ facsimile: 907 455.8326

COMMENT RESPONSE:

H3-1 This issue will be addressed in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

H3-2 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-3 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-4 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-5 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-6 Thank you for your comment. This issue will be addressed in ADEC's 401 Certification and EPA's response to comments with the final NPDES permit, both of which will be issued after publication of this FEIS.

H3-7 This issue will be addressed in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

H3-8 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-9 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-10 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-11 This issue will be addressed in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

H3-12 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-13 This issue will be addressed in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

H3-14 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-15 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-16 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-17 This issue will be addressed in EPA's response to comments with the final NPDES permit, which will be issued after publication of this FEIS.

H3-18 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-19 Thank you for your comment. This issue will be addressed in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS.

H3-20 The correction will be made in EPA's response to comments with the final NPDES permit which will be issued after publication of this FEIS

H4

teckcominco

May 13, 2003

Luke Boles
Division of Air and Water Quality
Department of Environmental Conservation
610 University Avenue
Fairbanks, Alaska 99709-3643

Re: **Comments on draft Pogo Waste Disposal Permit 0131BA002**

This document provides Teck-Pogo Inc.'s (Teck-Pogo) comments on the Draft Waste Disposal Permit as published in Appendix E of the Draft Environmental Impact Statement (DEIS) for the Pogo Gold Mine Project.

General Comment

Except as noted below under the specific comments, Teck-Pogo supports issuance of the solid waste permit as published in the draft and appreciates the opportunity to respond to questions raised during your development of the draft.

Specific Comments

1.1.1, 1.1.2, 1.2.1

Drawing 3 of the Monitoring Plan shows the Non-Mineralized Stockpile just upstream of the Recycle Tailings Pond. Section 7.4 of the November 2002 Plan of Operations Supplement indicates that this stockpile will store up to 335,000 tons of non-mineralized development rock. The language of Section 1.1.1, 1.1.2 and 1.2.1 should be modified so as to clarify that this non-mineralized stockpile is covered by the permit. H4-1

1.7.2

This provision should be deleted, as 18 AAC 60.815 applies only to points of compliance, not to the surface water monitoring locations included in the monitoring plan. H4-2

Thank you for the opportunity to comment.

Sincerely,

Karl Hanneman

Karl Hanneman
Alaska Regional Manger
Teck-Pogo Inc.

Teck-Pogo Inc.
3520 International Street, Fairbanks, Alaska 99701 ■ telephone: 907 455.8325 ■ facsimile: 907 455.8326

Cc: Ed Fogels
Hanh Gold
Bill Riley
Cindi Godsey

COMMENT RESPONSE:

H4-1 The text in Sections 1.1.1, 1.1.2, and 1.2.1 of ADEC's waste disposal permit will be modified to reflect the comment.

H4-2 The provision in Section 1.7.2 of ADEC's waste disposal permit will be deleted to reflect the comment.

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