

Email Date: Tue, 25 Jul 2006 10:16:42 -0800
From: Margaret Johnson <marg@clearsummit.com>
Subject: Comments about Ft. Knox's Heap Leach operations
To: Sharon.G.Seim@poa02.usace.army.mil, tom_crafford@dnr.state.ak.us,
luke_boles@dec.state.ak.us, william_ashton@dec.state.ak.us

COMMENTS OF PERMITTING FT. KNOX HEAP LEACHING OPERATIONS

Margaret Johnson
2382 Skiland Rd.
Fairbanks, Alaska 99712

As a near-by resident of the proposed Ft. Knox heap leach pit, I am probably one of the few testifying who does not receive any financial gain from Ft. Knox. I am just a VERY concerned citizen who is VERY worried about the potential dangers of the toxic heap leaching process.

Ft. Knox sugar-coated the process and dangers of heap leaching at the recent hearing on July 17th. It didn't take much research to find out how dangerous this process is. It is so dangerous, in fact, that the State of Montana has outlawed the process entirely!

One of the biggest hazards for heap leaching is the leakage of the toxic chemicals into the groundwater. Liners used in heap leaching can, more likely than not, fail due to progressive settlement and tearing from the massive weight of material heaped upon them. Let's say the liner does get a substantial leak – what happens next?

The size of Ft. Knox's proposed heap leach is enormous. There's absolutely no way they can contain the toxic cyanide solution. There are no lines that large that could be 100% effective. This is a tremendous concern.

What effect will excessive rainfall/snow have on the heap leach? How will it affect the cover?

There should be several monitoring wells drilled around the heap leach, not only on the downside but on the upside of the leach as well. As was pointed out at the hearing, there is already a well on the upside that could be used for testing.

Someone other than Ft. Knox employees should be doing the monitoring of these wells and they should be done often. In fact, I would like a representative from our community be in attendance through the whole monitoring process. If you think I don't trust Ft. Knox, you are right. There is big money to be made and a substantial leakage of toxic materials into the groundwater would be an economic disaster for them. You can bet they would not 'blow the whistle' immediately!

What kind of a response will there be to substantial leakage? Is there a standard as to what is considered a minor problem or a substantial problem? Who set those standards – the mining industry? My standard is that ANY leakage is a substantial problem.

In light of the trust I have for the mine and this process, I also want my well tested often.

Comments (Continued)

Page 2

Another large problem is the safety of birds and other wildlife from being poisoned by the toxic chemicals used in this process. I know there will be a cover on the leach but will that be 100% effective from keeping birds and other wildlife safe?

I know that Ft. Knox plans on getting the permit to do this heap leaching because they seem to always get what they want and, in fact, they are probably beginning construction as I type my comments. That's how confident they are. But the more I read about the process, the less convinced I am that it is safe.

If Ft. Knox were producing a product that would help the community meet an important need, like energy, then I might consider the need for the use of a dangerous process like heap leaching. The largest percent of their product is used for jewelry. Taking the risk of heap leaching to make jewelry is, in my book, most definitely not worth it!

I don't think a permit to heap leach should be issued to Ft. Knox. They should be required to continue using their mill.

Margaret Johnson
2382 Skiland Road
Fairbanks, Alaska 99712

Date: Thu, 27 Jul 2006 08:45:03 -0800
From: Mark May <jdfys153@gci.net>
Subject: Fort Knox heap leach proposal
To: Sharon.G.Seim@poa02usace.army.mil, tom_crafford@dnr.state.ak.us,
luke_boles@dec.state.ak.us

To whom it may concern;

As a member of the community downstream of the proposed Fort Knox heap leach facility I would like you to consider not permitting this project until the public is made aware of the danger of putting this project in the Fish Creek drainage. I travel by dogsled extensively through the country surrounding Fairbanks, and I can assure you, most people in the community have no idea Fort Knox waste would come into the community through the Fish Creek drainage.

There are 2 main issues that I see which need to be adressed. Public awareness is the first. I feel like this project is sneaking through. Safety is the second issue. No barrier can withstand the earthquakes or hold back the torrential rains we experience in Alaska. All plastics also degrade over time, so we are going to be setting the our children's children up for contamination unless this project is geologically and hydrologically isolated.

Respectfully yours,

Mark May
UAF 85
DVM CSU 89

Revised Comments
RECEIVED by email 7/31/06

Date: Mon, 31 Jul 2006 10:47:17 -0800
From: Chuck Johnson <chuck@clearsummit.com>
Subject: Revised comments on the Fort Knox Heap Leach
To: william_ashton@dec.state.ak.us, tom_crafford@dnr.state.ak.us,
Sharon.G.Seim@poa02.usace.army.mil, luke_boles@dec.state.ak.us

Comments on the Fort Knox Heap Leach

Chuck Johnson
2382 Skiland Road
Fairbanks, Alaska 99712-1749

907-389-2594

During the initial permitting process for the Fort Knox Mine (a permit we supported), we expressed concern about possible contamination of our water by the chemicals used in the process. The mine representatives told us that the tank leaching process was a state of the art closed loop. They went on to say it was far superior to all the other methods of extracting the gold and that we had nothing to worry about. Based on this and a lot of other promises about impact protections, we supported the permitting of the mine.

Some time after the mine went into operation, our well started pumping down (going dry). This occurred shortly after the mine started de-watering the pit. I told the mine folks about this and they pooh-poohed my concerns that the two were related. We then installed two one-thousand-gallon storage tanks and started purchasing water, supplementing that with what our well would produce. Eventually we had our well drilled deeper to increase it's output. We still have a two hundred gallon buffer tank between the well and our house to ensure a continuous supply.

The point is, I believe our water table is shared with the mine.

During the mine's presentation and Q&A portion of the hearing, great emphasis was placed on the fact that the tailings dam is located below and downstream of the proposed heap. When I asked whether our wells were going to be tested to establish a baseline and then monitored, the mine representative went through the whole scenario again about the tailings dam downstream and all the safeties built into the pit and never answered my question. I believe that monitoring wells should be drilled into the water table on the north side of the heap; that is, between the heap and our wells here on Cleary Summit. This should be done before the heap goes into operation so a baseline of the water quality can be established. Our wells should also be tested.

During questioning, the mine's General Manager said that they had no intention of importing ore from True North or other mines to be processed in the heap leach. I request that it be stipulated in the permit that only ore from the Fort Knox Pit may be processed in the heap leach.

It appears to me that the heap leach has the potential to cost the community of Fairbanks jobs. During the Q&A portion of the hearing, the mine manager stated that the identified ore to be processed in the heap leach pit represents about half the capacity of the proposed heap. (I'm paraphrasing). This tells me that the ore currently being processed in the mill could be diverted to the heap, greatly accelerating the shutdown of the mill and eliminating those jobs. While I acknowledge that the costs of operating the mill have increased over years, the market price of their product, gold, has doubled! On June 1, 1998, the day Kinross purchased Fort Knox, the price of gold was \$298.00 per ounce. Today it is \$633.00. In the last quarter of 98 their cost of production was \$210.00. The first quarter of this year it was \$318.00. It looks to me like their profit margin has increased considerably even with the increase in costs.

The mine and the industry has told this community many times that the large consumption of electricity at the mill has cut our electric bills by ten percent. I assume that the closing of the mill would have the opposite effect.

In their February brochure the Alaska Miners Assn. brags:

***Supporting the Alaska Mental Health Trust
The Alaska Mental Health Trust earned \$167,000 in rents
and royalty payments from the mining industry in 2004. The
Trust also earned \$60,000 from construction material sales.***

I assume that this was from Fort Knox as the trust owns the ore body and has the mill site lease there. What the Miners Assn. didn't mention is what the mine received in return, 338,334 ounces of the trust beneficiary's gold. The trust would be better off if the gold was left in the ground until we assess meaningful royalties and taxes on gold!

A while back Senator Seekins stated:

"Our state constitution emphatically requires that we utilize, develop and conserve all our natural resources, including land, waters and wildlife, for the maximum benefit of all our people."

This isn't happening when we permit these large mines. Currently these mines are benefiting only a small percentage of our people and only in the short term. According to The Institute of Social & Economic Research (ISER) at UAA:

"In Alaska, only oil pays its own way".

In fact in a 1995 study the ISER found our state gets fifty cents in return for every dollar spent on minerals management. These mines are a drain on our state treasury and not in

the best interest of all of us! It's ironic that just last Thursday our Governor cut the ribbon on the 7.3 million dollar road our state built to the Rock Creek Mine outside of Nome. We are virtually paying these companies to come and take our gold. During the permitting of True North DNR promised us a "Best Interest Finding". That never happened, small wonder.

The heap leach is a step backwards in technology and is not in our best interest.

I believe the permit should be denied.

Respectfully,
Chuck Johnson

Email Date: Sun, 30 Jul 2006 09:20:06 -0800
From: Lance and Karen Parrish <lanceandkaren@gci.net>
Subject: Ft Knox Heap Leach Comments
To: Sharon.G.Seim@poa02.usace.army.mi, tom_crafford@dnr.state.ak.us,
luke_boles@dec.state.ak.us, william_ashton@dec.state.ak.us

Comments on Ft. Knox Heap Leach Permit Application - July 30, 2006

Lance Parrish
PO Box 73400
Fairbanks, Alaska 99707 - 73400
907 456 4070

It is unfortunate that it appears permitting agencies have already determined to grant this permit and the public process is just window dressing to comply with the statutory requirements. Legitimate safety and environmental concerns will be ignored in the interests of "jobs", but while the benefits promised will not be there at the end of the day the risks and dangers will be. Fairbanks Gold and its consultants admit that here can be no guarantee that things will not go wrong. There is no legitimate "acceptable risk" that should be imposed on the public with respect to the nature and location of this proposed activity.

In short, the Ft. Knox mine has achieved virtually all the original goals allowed by the permits. Modifications to the permit to allow an activity that would never have been allowed at the outset, for the sole reason of cheaper mining, is not in the public interest.

The comments below are not in any order of priority.

1. It is really not conceivable that a permit for this activity would actually be granted in a watershed that could directly impact Fairbanks. There are not sufficient benefits for the risk involved, however that risk is portrayed as minimal. Golden Heart Utilities, Inc. was not allowed to continue a permit for a decades old discharge from the water treatment plant into the Chena and the "fix" required to eliminate the discharge imposed significant costs on the GHU (and now CUC also) water consumers when there was no demonstrable negative impact related to the discharge. Yet, Fairbanks Gold is applying for a permit for an activity that could destroy an entire watershed and pollute the Chena if it doesn't go according to plan and there is no direct benefit to the citizens of the area. There are known potential problems with other heap leaching pits and there is no assurance that this one will not have problems. I doubt that many of the other heap leach operations are in the headwaters of flowing waters, and the risks in this case are dramatically greater.

Why are we taking this risk, however small? There is no legitimate reason.

2. While at the public meeting, Fairbanks Gold claimed to have characterized the subsurface and examined the hydrology, I doubt that there is sufficient information to fully understand where water can go in the very fractured, uplifted, and fragmented rock structures that comprises the surrounding area. As an example, even though the US Army contracted for extensive studies of the Birch Hill Tank Farm area, the studies

conducted were not conclusive as to groundwater flow because of the character of the rock and subsurface. Those studies should be on file with ADEC. Thus, in the event of any leak in the heap leach, I seriously doubt that the engineering predictions that the lower dam will contain all of the liquid are accurate predictions or that the monitoring wells and monitoring program is sufficient that we would even know if there is a leak until it is too late. There is absolutely no assurance that liquid escaping the barrier will not follow the cracks in the rock and go where it wants, and there is no proof it will just automatically flow into the lower dam. If a full evaluation of the surrounding area had been conducted prior to submitting the permit, the existence of the prior well used for the concrete plant would have been revealed.

3. There are no real benefits to granting this permit. The claimed benefits (jobs, property taxes, and electric cost reduction) are not the kind of benefits nor are they sufficient to justify endangering the environment. Fairbanks Gold pays no significant royalties, taxes, or benefits to the landowners.

For instance, from the outset of Ft. Knox, one of the "benefits" promised was a reduction in electric costs for the remainder of GVEA's customers. If the permit is granted it is likely that Fairbanks Gold will significantly reduce its electric consumption, thus not only eliminating the claimed benefit, but potentially imposing additional costs on the remainder of the GVEA ratepayers if additional generation facilities are added and the load disappears. Prior to granting the permit, a full investigation of the GVEA loads, plans for expansion of generation facilities, and all other aspects of the electric issue must occur.

Another promised benefit was a recreational area. The original mine life was projected to be 12 to 16 years and it was clear that much of the gold bearing ore in the area was not profitable to mine. By extending the mine life with the heap leach (by allowing the processing of ore that was not originally intended to be mined), the recreational area will not be available in the lifetime of many of the people who were promised this benefit. Furthermore, it will be generations before the public will either want, or be allowed to use the area after a cyanide heap leach operation is conducted.

Furthermore, if the heap leach permit is granted, it is unlikely that Fairbanks Gold, despite its representations, will continue to run the mill for very long. I believe it is likely that in the near future the mill and related equipment will be shut down, packed up, and moved out. Therefore, the claimed benefits (jobs, property taxes, and electric cost reduction) will not exist in the increments represented. Of the 400 jobs, it is likely that Fairbanks Gold will eliminate more than half if the heap leach permit is granted. As soon as the heap leach pit is filled, many more jobs will be eliminated (how many jobs are involved in monitoring and extracting the gold once the pit is full), property tax payments will drop dramatically (what is the value of a heap of cyanide laced dirt?), and there will be virtually no electricity consumed compared to current levels. The sole purpose of the heap leach is to cut costs and increase profit for the company, but I'll bet the royalty payments do not go up.

4. While Fairbanks Gold touts the property taxes it pays as a benefit, history demonstrates that the mine attempted from the outset to avoid its full responsibility to pay property tax. The FNSB had to retain legal counsel and force Ft. Knox to pay the appropriate level of tax.

5. Although the permit should not be granted, if it is, Kinross must be required to agree in writing to fully indemnify the State and all parties who could possibly be impacted. Furthermore, Kinross must be required to post a bond issued by a solvent independent surety for the costs of the worst case scenario.

6. The permitting agency's representative was quoted in the News Miner as being "surprised" that there were so few comments. I think this is a function of the general feeling that Ft. Knox always gets what it wants and there is no reason to waste time attending public meetings or commenting.

You go to a public meeting that is designated as question and answer and Fairbanks Gold refuses to answer legitimate questions regarding what happens if their design expectations fail and refuses to tell the public how much ore they have identified from the 161 million tons potentially going into the heap leach. The permitting agencies did not require answers.

Fairbanks Gold refused to tell the public how much ore of the 161 million tons it had identified even claiming it doesn't release proprietary information. First, when you apply for a permit to dump cyanide in a watershed, you had better be prepared to answer questions in a forthright manner. Second, the requested information was disclosed to the agencies earlier in the day so it should not be a secret from the public. And third, it is not conceivable that Fairbanks Gold has not actually identified where the ore will come from. If Fairbanks Gold cannot identify where the ore will come from, then if the permit is granted, only identified ore can be added to the heap. A permit for unidentified ore is not justifiable.

When the "large mine" permitting department hires former Ft. Knox employees there is a public perception that Fairbanks Gold will get what it wants, and confidence in the value of the public process is quite low. Who is protecting the public?

During the True North permitting process the comments of the local residents regarding noise, light pollution, and dust were generally ignored, even after specific requirements were inserted in the permit. Were it not for constant complaints, dust would never have been controlled at all. The lights from the mine trucks fell directly on the residences and nothing was done, despite the wording of the permit. Noise monitoring and truck noise certification was a joke (once a year). With all due respect, why should we suspect that this process will be any different?

7. If the permit is granted, the permit must strictly prohibit the importation of ore from True North, other properties, or from other mines. If the permit is granted, only ore from bodies specifically listed in the permit can be added to the heap.

8. Fairbanks Gold claims that it can't process the lower grade ore because of the cost of electricity. However, it was never anticipated that all ore would be processed in the mill, some was just not going to be processed. According to Fairbanks Gold, the mill will in fact operate for its intended life (until 2010) and will have processed the amount of gold originally anticipated. Thus, the expectations of the original permit have been fulfilled, Fairbanks Gold got its full mine life, and now it is time for the public to get the land returned and the recreational area the public was promised. The original public process was meaningless if Fairbanks Gold is allowed to not only double the original the mine life, but completely change the mining process at the same time.

If heap leaching was intended at the outset, that would have had to have been part of the original extensive environmental impact statement process. By seeking a "modification" of the permit, Fairbanks Gold is avoiding the evaluation process that would originally have been required. Therefore, the permit must be denied in the absence of a full environmental impact statement.

June 26, 2006

Delbert Parr
Fairbanks Gold Mining, Inc.
P.O. Box 73762
#1 Ft. Knox Road
Fairbanks, Alaska 99707-3726

Re: Reclamation and Closure Plan

Dear Mr. Parr:

As a follow-up to our conversation today regarding the use of the pit lake for water treatment of tailings decant and possibly heap leach water, the Trust Land Office (TLO) needs assurance that, if this proposed use of the pit lake is allowed, it will not create any additional liabilities for the Trust, either during the operation of the pit lake as a treatment facility or after official closure. While statements are made in the reclamation and closure plan that water in the pit lake will meet water quality standards for discharge, it is not clear when this standard will be achieved or what the contingencies would be if the water did not meet these standards at the time of discharge. Because of the duration of the lake for water treatment, it may be necessary to incorporate this facility in the Agreement for Funding Post Reclamation Obligations.

Another concern the TLO has with the Plan is the continued reliance on the salvage value of the mill equipment and buildings to cover the cost of demolition and removal of the improvements and reclamation of the site. The last correspondence we had on this topic (enclosed) clarified that FGMI would complete an assessment of the salvage values and demolition costs associated with the reclamation of the millsite, with the goal of adjusting the bonding necessary for the overall project, including the salvage of equipment and the demolition of the buildings. Therefore, as previously discussed, project bonding should include a specific line item for demolition and removal of the mill and related millsite improvements.

The TLO is also concerned about the adequacy of the proposed methods of using ditches and berms to restrict access to the pit area. Maybe these methods can be enhanced by adding boulders along the berms, in addition to signage.

Thank you for the opportunity to comment. We look forward to your addressing these issues in the plan.

Sincerely,

Mike Franger
Senior Resource Manager

Cc: Marty K. Rutherford, Executive Director
Tom Crafford, Large Mine Team Coordinator

Date: Mon, 31 Jul 2006 15:47:06 -0800
From: Mike Franger <mike_franger@dnr.state.ak.us>
Subject: Comments re FGMI Reclamation and Closure Plan
To: Tom Crafford <tom_crafford@dnr.state.ak.us>
X-Accept-Language: en-us, en
User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.0.2)
Gecko/20030208 Netscape/7.02
Original-recipient: rfc822;tom_crafford@dnr.state.ak.us

Tom,

Attached are comments I previously submitted to Delbert Parr at FGMI regarding issues the TLO has relating to the Reclamation and Closure Plan as well as the draft DEC Waste Management Plan for the Ft. Knox Mine. These should be considered as comments submitted by the TLO during the official Public Notice period which ends today for this project. Thanks for the opportunity to comment.

Mike

Tom Crafford
Mining Coordinator
Alaska Dept. of Natural Resources
Office of Project Management and Permitting
550 West 7th Avenue, Suite 900D
Anchorage, AK 99501-3577
Tel: (907) 269-8629 Fax: (907) 269-8930
tom_crafford@dnr.state.ak.us

TRUSTEES FOR ALASKA

A Nonprofit Public Interest Law Firm Providing Counsel to Protect and Sustain Alaska's Environment

1026 W. 4th Ave., Suite 201 Anchorage, AK 99501 (907) 276-4244 (907) 276-7110 Fax Email:
ecolaw@trustees.org
Web address: www.trustees.org

July 31, 2006

Via Email: luke_boles@dec.state.ak.us

Mr. Luke Boles
Department of Environmental Conservation
610 University Avenue
Fairbanks, AK 99709-3643

Via Email: tom_crafford@dnr.state.ak.us

Mr. Tom Crafford
Department of Natural Resources
550 W. 7th Ave., Ste. 900D
Anchorage, AK 99501

Re: Draft Waste Management Permit for the Fort Knox Mine: 2006-DB0043, Fort Knox Mine & Draft Reclamation Plan Approval

Dear Mssrs. Boles and Crafford:

This letter provides comments to the Department of Environmental Conservation (DEC) on the Draft Waste Management Permit for Fairbanks Gold Mining, Inc.'s (FGMI) Fort Knox Mine: 2006-DB0043 (Draft Permit) and the Department of Natural Resources (DNR) on the Draft Reclamation Plan Approval (Reclamation Plan Approval), which is included within the Draft Plan of Operations Amendment Approval (Amendment Approval). These comments are submitted on behalf of Cook Inlet Alliance, Northern Center, Alaska Center for the Environment, Kachemak Bay Conservation Association, and Earthworks, organizations that are concerned about the impacts of the proposed mine expansion on human health and the environment, and who seek adequate permit conditions for the operation and closure of the Fort Knox Mine.

The first of two significant and pervasive problems with the Draft Permit is the lack of public review for future permit modifications. The current draft of the permit would allow many changes to the project that could lead to significant environmental damage. Such changes ordinarily would require DEC to re-issue or modify the permit, a process that would require public notice and comment.

Next, DEC must issue a waste management permit that complies with Alaska solid waste management regulations (Regulations) in chapter 60 of title 18 of the Alaska Administrative Code. As discussed in this letter, the Draft Permit does not meet these regulatory requirements.

In addition, the Draft Reclamation Plan Approval fails to supplement FGMI's reclamation plans with conditions or standards. It does not ensure against long-term water quality impacts and environmental degradation. This is especially true with regard to plans for the wetlands treatment system and for the use of the open pit as a pollutant storage area.

I. DEC Must Allow Public Notice and Comment on Permit Modifications.

The waste management permit will create enforceable duties for the disposal, storage, and handling of solid waste at the Fort Knox Mine. Several provisions of the Draft Permit allow for modification of FGMI's operation and closure plans, changes that will be incorporated by reference into the Draft Permit. These plan and permit modifications provide no corresponding opportunity for public notice and comment. If the State fails to provide public notice of such changes and modifications, FGMI's compliance requirements may be significantly weakened without a public review process. To avoid running afoul of public notice requirements, DEC must explicitly state all conditions currently incorporated by reference in the Draft Permit, and ensure that those conditions are enforceable.

Alaska's administrative procedure regulations provide that "[a]ny expansion, modification, or other change in a facility process or operation which might result in an increase in emissions or discharges, or might cause other detrimental environmental impacts from the permittee's facility, requires a new permit or variance." 18 AAC 15.100(c). Because the solid waste management regulations of 18 AAC 60 do not specifically provide for variances from the requirements of chapter 60, any such "expansion, modification, or other change" requires the issuance of a new permit.

DEC's approval of plans allowing significant changes to the operation and closure of the facilities at Fort Knox may lead to "detrimental environmental impacts." If so, DEC must issue a new permit, or modification of the permit, with corresponding public notice and comment under 18 AAC 15.100.

Section 1.1 of FGMI's Walter Creek Valley Fill Heap Leach Facility Project Description (Project Description) illustrates this problem:

Planning for the heap leach is in the early stages, and therefore, the plans as currently proposed are subject to change or modification as additional information becomes available from environmental studies, geochemical and engineering analyses, and input from regulatory personnel and interested parties. Any significant changes in plans will be appropriately addressed with the regulatory agencies.

Thus, the project contains many uncertainties and the Draft Permit conditions are moving targets. A meaningful public review process requires that the Draft permit include explicit, accurate, and definite conditions.¹ If changes are contemplated, a new public process is required for each permit modification.

II. The Draft Permit Does Not Comply with Regulatory Requirements.

Prior to issuing or denying a permit under 18 AAC 60.200, DEC must review “information contained in the application and the public record” and reach a decision based upon enumerated considerations. 18 AAC 60.215(a). The first of these considerations requires DEC to evaluate the likelihood that the project will comply with the Regulations, codified at 18 AAC 60, and state water quality standards found in 18 AAC 70. Here, the Draft Permit contains inadequate conditions and performance standards regarding the storage of accumulated solid waste, the removal of ponded water from storage facilities, the handling of permafrost, and visual and groundwater monitoring.

A. The Draft Permit Does Not Provide for Safe Storage of Accumulated Solid Waste.

The Regulations provide that a “person may not store accumulated solid waste in a manner that causes,” among other things, “the attraction or access of domestic animals, wildlife, or disease vectors” or “polluted run-off water.” 18 AAC 60.010. Here, the Draft Permit fails to include permit conditions that would deter wildlife from accessing solid waste disposal areas at the Fort Knox Mine. Nor does the Draft Permit adequately address the problem of “polluted run-off water” produced by the mine’s Heap Leach and Tailings Storage Facilities.

1. *The Draft Permit Lacks Adequate Wildlife Protection Measures.*

¹ The Draft Permit allows for plan revisions that may lead to “detrimental environmental impacts,” each requiring a permit modification subject to public notice and comment. These include, but are not limited to, Section 1.2.2.8 (“changes to the beneficiation or treatment processes which may affect monitoring, closure, tailings, water quality, or any other permit condition.”); Section 1.2.8 (“Activities at the site which will cause a greater amount of waste to be treated and disposed of, above that contemplated in this section of the permit, are prohibited without prior approval by the Department.”); Section 1.2.11.3, 1.2.11.6 (Department review and approval of an FGMI “plan for water treatment or other corrective action that achieves water quality standards by the time the pit is expected to discharge.”); Section 1.3.1 (“Information on engineering changes to the mill, new waste treatment processes, changes to solid waste disposal facilities, changes to the groundwater interception and monitoring well system, and the addition of new waste streams that discharge into the TSF must be submitted to the Department and approval must be obtained prior to any such changes or discharges.”); Section 1.4.8 (allowing, with Department approval, the “introduction of a new chemical into the process or waste treatment streams”); Section 1.4.9 (allows for changes which would “significantly modify the quality or quantity of a discharge, significantly modify the operation of a waste treatment component, or significantly modify the disposal facilities.”); Section 1.6.1 (“Future Department-approved changes to project monitoring will be included as modifications to the Monitoring Plan and do not require reissuance or modification of this permit.”); and Section 1.10.2. (Department approval of temporary closure plans).

The language of 18 AAC 60.010 tracks the Alaska waste management statute, which requires that “wildlife and domestic animals do not . . . become harmed by contact with the waste” stored at a facility operating under a waste management permit. AS 46.03.100. Section 1.4.15 of the Draft Permit merely states that “[a]ny area of open water in the mine area must not become an attractive area for waterfowl or shorebirds. Any wildlife casualties shall be reported to the Department and to the appropriate state and federal agencies.” In addition to defining an “attractive area,” DEC must amend the Draft Permit to require actions designed to prevent contact with *any* animal species, such as fencing or other specific deterrent measures.

Section 6.0 of the Project Description provides additional detail on FGMI’s plans to prevent harm to wildlife:

The heap leach facility has been designed to have no process solution exposed where it can be accessed by wildlife. During the cold months, the solution will be applied with drip emitters buried under 5 feet of ore, and in the summer months it will be applied from drop emitters or possibly sprinklers if enhanced evaporation is needed. Pregnant solution will be collected within the ore in the in-heap storage reservoir.

DEC must make these protection measures explicit conditions in the Draft Permit to ensure that the facility will comply with the standards of 18 AAC 60.010 and AS 43.03.100.

2. *The Draft Permit Fails to Control the Production of Polluted Run-Off from the Heap Leach and Tailings Storage Facilities.*

18 AAC 60.010 prohibits the production of “polluted run-off water” from solid waste storage facilities. It defines “polluted run-off water” as “water that violates a criterion of 40 C.F.R. 257.3-3 . . . , the water quality standards of 18 AAC 70, or the drinking water standards of 18 AAC 80.” 18 AAC 60.990(96).

In relevant part, 40 C.F.R. § 357.3-3(b) requires that “a facility shall not cause a discharge of dredged or fill material to waters of the United States that is in violation of the requirements under Section 404 of the Clean Water Act, as amended.” The construction of the heap leach facility and access roads at the Fort Knox Mine will violate Section 404 of the Clean Water Act by “impacting,” and presumably destroying, 57.6 acres of jurisdictional wetlands without adequate mitigation.

Run-off from the Fort Knox Mine facilities likely will violate Alaska water quality standards. The Tailing Facility Closure Management Plan (TSF Plan) states, in Section 5.1, that arsenic, antimony, copper, sulfate, iron, TDS, cyanide, manganese, and selenium are process water constituents with “the potential to exceed water quality standards. . . .” Because run-off escaping from the tailing storage facility (TSF) seep

collection system may impact surface waters, including a drinking water supply reservoir, those discharges also may violate the drinking water standards of 18 AAC 80.

Further, because baseline samples taken in Fish Creek exceeded applicable water quality standards for multiple constituents, FGMI will measure any post-closure discharges using tolerance intervals tailored under 18 AAC 60.825 to reflect natural background levels. Yet, DEC has failed to formally establish these measurement criteria. As Section 5.2 of the TSF Plan explains, “FGMI will evaluate the most appropriate method to establish water quality criteria in conjunction with Alaska DEC prior to initiating closure activities.” Until DEC formalizes such criteria, FGMI cannot operate and close the facilities in compliance with 18 ACC 70 and 18 AAC 80.

The heap leach pad poses an additional threat to water quality. “Discharge from the heap leach pad will mix with the water impounded on the surface of the tailing impoundment, and in time, flows [sic] down the Fish Creek drainage.” Project Description, Section 5.3. The Draft Permit fails to propose measures to monitor and control this discharge of run-off material from the heap leach facility to the TSF. Until the Draft Permit includes conditions to ensure that this discharge will not significantly impact the quality of impounded water or seepage from the TSF, one must presume that water quality and drinking water violations will occur.

Further impacts to water quality may result from the return of process water from the TSF into the open mining pit, which itself will discharge into downstream waters. Section 1.2.11.3 states:

If the long term pit lake water quality model required in Section 1.2.11.2 predicts that water quality standards will not be achieved by the time the pit lake is expected to discharge the permittee shall propose a plan for water treatment or other corrective action that achieves water quality standards by the time the pit is expected to discharge.

DEC cannot ensure the control of polluted run-off water at the Fort Knox Mine simply by including tentative plans of this nature in the Draft Permit.

Finally, recent surface water sampling demonstrates the high potential for water quality and drinking water violations at the Fort Knox Mine. As Section 7.1.2 of the TSF Plan explains, “[p]re-mining iron concentrations in surface water ranged from 9.5 to 17 mg/l. Current concentrations measured in the wetlands ranged from 2 to 30 mg/l.” Iron concentrations of 30 mg/l are not only 30 times greater than the applicable water quality criterion, but cannot be attributed solely to natural conditions. Likewise, water quality samples taken in February 2006, from the upper and lower wetlands and water supply reservoir show significant water quality exceedances for iron (53.0 mg/l) and manganese (3.21 mg/l).

Based on the available information, “polluted run-off” is a significant issue for the project. As a result, the Draft Permit must incorporate control measures for that run-off.

B. The Draft Permit Fails to Require Removal of Pondered Water from Solid Waste Storage Facilities.

The Regulations require mine owners and operators to remove any water found in ponds on the surface of waste storage facilities. 18 AAC 60.22. The permittee responsible for a landfill must “remove all ponded water that is in contact with waste within seven days after the formation of the pond unless another dewatering schedule is specified in a permit issued under AS 46.03.100 and this chapter.” *Id.* at (b). Section 7.0 of FGMI’s Monitoring Plan discusses ponding at the heap leach facility, but does not provide for removal. Likewise, the Draft Permit fails to require any removal of ponded water, much less removal within seven days. This leaves the project open to potential violations of 18 AAC 60.225. DEC must correct this deficiency in the final permit.

C. The Draft Permit Fails to Comply with Regulations Governing Landfills Located on Permafrost.

The Regulations require that, where possible, landfills be located on ground free of permafrost. 18 AAC 60.227. If no alternatives exist, a landfill constructed on permafrost “must be designed and operated so that the permafrost remains frozen to the greatest extent practical, and water does not pool anywhere on the site.” *Id.* at (b). Here, the Project Description, in Section 2.5, states that:

Limited amounts of permafrost have been identified at the toe of the south slope in the Walter Creek valley. Where encountered and judged to be a problem, the permafrost will be removed to bedrock. . . . Covering the permafrost with the leach pad will cause it to melt since the supply of cold air that is needed to maintain permafrost is removed and replaced by the relatively warm ore and solution in the leach pad. Any permafrost that could melt and provide unsuitable support for the pad and its related facilities will be removed.

DEC failed to explain whether it was necessary for FGMI to locate the heap leach facility on permafrost. Such an explanation is required by 18 AAC 60.227. Moreover, FGMI’s plans to melt permafrost do not reflect the requirement that permafrost remain “frozen to the greatest extent practical.” Before it issues the final permit, DEC must analyze whether the project complies with 18 AAC 60.227, and must add permit conditions to guarantee that FGMI appropriately handles the permafrost underlying the heap leach facility.

D. The Draft Permit Omits Important Visual Monitoring Requirements.

The permittee for any facility operating under a waste management permit “shall design a visual monitoring program to detect and document,” among other things, “signs of damage or potential damage to any component of the facility from settlement, ponding, leakage, thermal instability, frost action, erosion, thawing of the waste, or

operations at the facility.” 18 AAC 60.800(a). The Draft Permit, at Section 1.6.1.1, addresses most of these requirements, but fails to require monitoring for damage or potential damage from thermal instability, frost action, or thawing of waste. DEC must correct these deficiencies before it issues the final permit.

The Regulations require visual monitoring of “above-grade portions of groundwater monitoring devices,” visible portions of liners, or any “containment structure, retaining wall, erosion control, or diversion structure” at waste management sites. 18 AAC 60.800(a). They also require monitoring for evidence of “slippage of a flexible liner or damage to its anchor.” *Id.* The Draft Permit fails to include specific conditions requiring any such monitoring.

18 AAC 60.800(a)(4) also requires visual monitoring for “escape of waste or leachate or any unauthorized waste disposal.” This requirement is especially pertinent to the heap leach facility, which is expected to discharge process water into the downstream TSF. It is essential that DEC require FGMI to perform visual monitoring of the transfer of waste and/or leachates between these two facilities to prevent surface water and groundwater quality violations. DEC must explicitly include such requirements in the final permit.

E. DEC Must Require Groundwater Monitoring Immediately Downgradient of the Heap Leach Facility.

With limited exceptions, all solid waste disposal facilities covered under the Regulations must comply with the groundwater monitoring requirements of 18 AAC 60.820-860. 18 AAC 60.820(a). The permittee must demonstrate this compliance prior to disposal of waste into any newly constructed landfill. *Id.* at (d). Thus, prior to issuance of a final permit and construction of the heap leach facility, FGMI must properly locate sufficient surface and groundwater monitoring wells and stations.²

For each landfill developed or expanded, DEC must design a schedule of compliance based upon several factors, including potential environmental pollution, the design and age of the landfill, “the potential for pollution of any nearby aquifer,” and the “types and amounts of waste disposed of in the landfill.” *Id.* DEC must select specific points of compliance for sampling and they must be “certified by a groundwater scientist or otherwise approved by the department” to ensure that “the wells are designed and placed where they are most likely to detect contamination from *each* waste management area.” 18 AAC 60.825(e) (emphasis added).

At the heap leach facility, FGMI plans to monitor only “the barren solution, pregnant solution, LCRS, PCMS and the underdrain system due to their potential for detecting process fluids in the event of leakage” (Project Description, Section 6.0). However, this proposal violates the groundwater monitoring requirement of 18 AAC 60.825(e).

² As discussed in Section I, agency decisions of this nature must be made available for public notice and comment.

DEC must require groundwater monitoring immediately below the heap leach facility, despite assertions by FGMI that “no suitable locations for groundwater monitoring wells exist,” and that “[t]he presence of tailing likely has influenced local water quality which would limit the effectiveness of monitoring wells in detecting potential seepage.” FGMI has provided no evidence to support this assertion. Comments submitted by the Center for Science in Public Participation (CSP2) note that the TSF should not be capable of discharging contaminants into upstream groundwater. Thus, DEC must require groundwater monitoring for the heap leach facility.

FGMI currently samples the mill stream slurry and water in the interceptor wells prior to their discharge into the TSF. Upon detection of elevated contaminant levels in the TSF, this sampling allows for isolation of the contaminant source and remediation of the problem. Consistent groundwater monitoring below the heap leach facility will similarly aid in contaminant detection, which will ensure that the waters within and outside of the TSF comply with permit limitations and state water quality standards.

In addition, closure plans for the heap leach facility allow for release of pollutants directly into the downgradient TSF. As Section 5.1 of the Project Description notes, “[p]ost-closure discharge from the drainage system will be monitored.” DEC must explicitly include this post-closure monitoring as a condition of the final permit.

IV. The Draft Permit Fails to Provide Adequate Compliance Standards.

In regard to pre-beneficiation tests of mixed ore, section 1.2.2.3 of the Draft Permit states: “If net neutralization potential (NP) to acid generating potential (AP) is less than 3:1, a humidity cell test (kinetic) of adequate duration will be required.” Section 1.2.2.4 requires the same for post-beneficiation monitoring. Neither section provides a standard by which to measure an “adequate duration.” DEC must correct this omission in the final permit.

Section 1.2.11.6 provides that the “permittee shall develop a plan for corrective action to be taken if the pit lake is not achieving the benchmark values in the years specified in Section 1.2.11.4.” DEC must explain the required elements of a “corrective action” plan under this section, including any relevant monitoring and treatment standards.

Section 1.3.5 states, “The permittee shall develop the site in accordance with the plans submitted by the applicant as required by this permit and approved by the Department, and approved amendments to those plans. Pollution prevention concepts shall be incorporated into operation plans for the project.” This provision does not contain standards for the “pollution prevention concepts;” nor does it include any reference to the types of plans this provision is meant to address. In addition, as stated in Section I, plans are easily changed. DEC must review and/or approve any proposed changes to FGMI’s plans through a publicly reviewable permit modification.

Section 1.4.4 requires the permittee to “ensure that wastes are deposited into the TSF in a manner that will not damage or otherwise jeopardize the integrity of the containment of the TSF.” This provision provides no enforceable standards for deposition of wastes so as to maintain the integrity of the TSF. DEC must include appropriate conditions in this section of the final permit, including a prohibition on activities known to jeopardize containment structures.

Section 1.4.5 states, “The permittee shall take reasonable measures to control dust and/or particulates that may occur from the TSF, Walter Creek Valley Heap Leach Facility, roads or other mine components by wetting or other effective measures.” This provision provides no standards for dust control; “reasonable measures” and “other effective measures” provide no guidance as to what is required by the permit. DEC must add specific requirements to the permit to ensure the permit is explicit and enforceable.

Section 1.5.4 provides, “The permittee shall control and treat surface water, groundwater and seepage as necessary to prevent off-site water quality exceedances.” This provision provides no standards to prevent off-site water quality exceedances; “control and treat” various waters provides no guidance as to what is required by the permit. DEC must add specificity to this condition to ensure it is clear and enforceable.

Section 1.6.1.4 provides that:

Geochemical monitoring of overburden, development rock, run of mine ore that is placed on the Walter Creek Valley Heap Leach Facility, and tailings samples from the Fort Knox Mine to ensure that there is low potential for production of leachate that is acidic and/or contains elevated levels of metals.

This section does not list or reference a standard for measuring acidity of leachate or levels of metals. DEC must explicitly state such standards in the final permit.

IV. The Draft Reclamation Plan Approval Contains Inadequate Performance Standards and Project Descriptions.

DNR has the authority to approve a reclamation plan, deny the plan, or approve the plan with conditions. 11 AAC 97.300(c). DNR’s Draft Reclamation Plan Approval for the Fort Knox Mine fails to include any conditions or standards. Nevertheless, the scale of development and complexity of risks involved in the Fort Knox heap leach facility require DNR and/or FGMI to supplement reclamation plans with stronger performance standards and more detailed project explanations.

A. FGMI Must Revise Its Plans for the Wetland Treatment System.

FGMI is planning to construct a wetland treatment system to “provide a final finishing treatment” for site runoff and drainage. The Reclamation Plan, at Section 6.1, states both that “all water reporting to the wetlands will meet standards prior to discharge

from the tailing impoundment,” and that the treatment system “will not be the primary means utilized to meet water quality standards.” This is inconsistent. How will the constructed wetlands receive discharged water already in compliance with water quality standards and simultaneously function as a means to bring discharged water into compliance?

This inconsistency is compounded by the statement that “the wetland system will provide contingency treatment capacity in order to ensure the discharge will not affect designated uses in the freshwater reservoir.” (Reclamation Plan, Section 6.1). If the wetland treatment system is to operate as a contingency measure to bring discharged waters into compliance, FMGI must explain the effectiveness and limitations of this treatment method. Likewise, FGMI must discuss what will be done if, after wetlands treatment, the water still does not meet water quality standards. Moreover, this wetland system effectively moves the point of compliance from the tailings dam downstream to the wetlands and closer to a source of drinking water. This is unacceptable.

FGMI must provide more detail with regard to construction of the wetland treatment system. For example, the Reclamation Plan does not specify how the “ridge developed during placer mining” will prevent the flow of groundwater or seepage between the wetland treatment system and existing wetlands, currently inhabited and used a spawning habitat by Arctic grayling. DNR should condition approval of the Reclamation Plan upon adequate protection of functioning wetlands.

B. DNR Must Not Allow FGMI to Add Pollutant-Laden Water to the Pit Lake Without Including Enforceable Compliance Standards.

The Reclamation Plan, at Section 6.1, states that “[t]he amount of water pumped to the pit from the tailing and/or the heap leach will be limited by the chemical mass in the water pumped to ensure that the pit water meets water quality standards when the pit lake achieves final elevation.” The same section estimates that the “filling will take approximately 80 years.” Indeed, the Reclamation and Closure Schedule in Figure 5.0 shows a completion date of 2090 for the pit lake.

The Reclamation Plan does not explain how the pit lake will be managed to prevent wildlife access during this 80 year pre-compliance period, as required by AS 46.03.100. Moreover, the plan to add contaminated water to the pit lake from the TSF and heap leach pad does not contain standards for the sources and amounts of waters mixing in the pit lake and the corresponding rates of contaminant dilution. DNR must establish these standards in the Reclamation Plan.

Finally, Section 6.1 of the Reclamation Plan states the following:

Although the chemical mass to be pumped to the pit from heap leach and the tailing is believed to be less than the amount that would compromise the water quality in the pit long term, the chemical mass pumped will be monitored closely, and if necessary, a treatment system will be

implemented to reduce the chemical mass going to the pit. Treatment options being investigated include engineered wetlands, reverse osmosis, oxide scavenging, chemical reduction and biologically mediated reduction.

A mere investigation of options for a proposed chemical treatment system cannot be considered a reclamation plan. Prior to issuance of a final Reclamation Plan Approval, FGMI must study treatment alternatives and develop and implement an effective system.

V. The State Should Wait to Assume Management of the Fort Knox Site Until FGMI Has Demonstrated Long-Term Safety and Compliance.

Section 5.4 of the Reclamation Plan states that “[o]nce FGMI relinquishes the Millsite Lease property in accordance with the *Agreement For Funding Post-Reclamation Obligations* [(Agreement)](Appendix A), public access to the Fort Knox site will be managed by the State of Alaska.” DNR and DEC must revise the Agreement “[a]t least 180 days prior to the introduction of leach solution to the Walter Creek Valley Fill Heap Leach, or within 180 days of issuance of this Plan of Operation Amendment Approval (which ever is sooner). . . .” Reclamation Plan Approval.

The revised Agreement must thoroughly consider delays and/or difficulties associated with reclamation of the new heap leach facility, the increased levels of contaminants in the TSF and pit lake, and the potential use of wetlands as a secondary treatment system. DEC and DNR should not allow FGMI to transfer responsibility for managing the Fort Knox site to the State until after the facility has met water quality standards and maintained functional wetlands for a period of at least five years.

For the reasons discussed in Section I, DEC and DNR must provide a public notice and comment process prior to issuing the revised Agreement and plans for long-term maintenance of the Fort Knox site.

VI. Miscellaneous

Section 1.6.3 of the Draft Waste Management Permit contains either missing information or a typographical error. The provision states, “Samples taken as required by Section **Error! Reference source not found.** shall be analyzed in conformance with the most recent Monitoring Plan and QAPP” DEC must correct its erroneous inclusion of the phrase “**Error! Reference source not found**” prior to issuance of the final permit.

We appreciate this opportunity to comment on the Draft Permit and Reclamation Plan Approval for the Fort Knox Mine expansion. We look forward to reviewing documents that are enforceable, subject to public review for all significant modifications, and in compliance with the requirements of the Regulations. If you have any questions, please do not hesitate to contact me at 907.276.4244 x112.

Sincerely,

Fort Knox Mine Draft Waste Management Permit/ Draft Reclamation Plan Approval
July 31, 2006
Page 12

Frances Raskin
Staff Attorney

TRUSTEES FOR ALASKA

A Nonprofit Public Interest Law Firm Providing Counsel to Protect and Sustain Alaska's Environment

1026 W. 4th Ave., Suite 201 Anchorage, AK 99501 (907) 276-4244 (907) 276-7110 Fax Email:
ecolaw@trustees.org
Web address: www.trustees.org

July 31, 2006

Via Email: Sharon.G.Seim@poa02.usace.army.mil

Ms. Sharon Seim

U.S. Army Corps of Engineers, Alaska District

Regulatory Branch (1145b)

3437 Airport Way, Ste. 206

Fairbanks, AK 99709-4777

Via Email: William_Ashton@dec.state.ak.us

Mr. William Ashton

Department of Environmental Conservation

WQM/401 Certification

555 Cordova Street

Anchorage, AK 99501-2617

Re: Public Notices of Applications for 404 Permits and Short-term Variances from 401 Certification for Construction, Reclamation, and Closure of Heap Leach Pad at Fort Knox Mine: POA-1992-574-S and POA-1992-574-T, Fish Creek

Dear Ms. Seim and Mr. Ashton:

This letter provides comments on the June 2, 2006, Public Notices of Applications for 404 Permits and Short-term Variances from 401 Certification for Construction, Reclamation, and Closure of a Heap Leach Pad at Fort Knox Mine: POA-1992-574-S and POA-1992-574-T, Fish Creek ("Notices"). The comments are submitted on behalf of Cook Inlet Alliance, Northern Center, Alaska Center for the Environment, Kachemak Bay Conservation Association, and Earthworks, organizations concerned about the impacts the construction, operation, reclamation, and closure of a heap leach pad at Fort Knox Mine pose to human health and the environment (including impacts to water quality).

Public notice and a comment period are required for any draft EA.

The Notices of Applications for Permits solicit comments on applications for permits under section 404 of the Clean Water Act and requests variances from certification under section 401. The Notice quotes from an Army Corps of Engineers (“Corps”) regulation governing permit decisions. This regulation requires the Corps to review “the probable impacts, including cumulative impacts” of the project and take into account a multitude of factors in doing so. *See* Public Notice, p. 3. Although the Public Notices state that the Corps seeks comments on these issue areas to assist it in preparing draft environmental assessments (“EA”) or environmental impact statements (“EIS”), the Corps apparently does not intend to issue a draft of these documents, a process that would provide the public process required by the National Environmental Policy Act (“NEPA”). Rather, it appears that the Corps plans to skip this step and proceed directly to issuing the final permit, EA, or Finding of No Significant Impact (“FONSI”). If the Corps fails to provide the full public process by first issuing, for example, a draft EA and draft FONSI, it will have violated NEPA.

When an agency determines that an EIS is not required, it must prepare an EA, and “shall involve environmental agencies, applicants, and the public to the extent practicable, in preparing assessments.” 40 CFR § 1501.4(b). The agency also must make a FONSI “available to the affected public as specified in section 1506.6.” 40 CFR § 1501.4(e)(1). Section 1506.6(b) requires the Corps to involve the public in preparing and implementing its NEPA procedures, including “[p]rovid[ing] public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected.” 40 CFR 1506.6(b) (emphasis added). In addition, the Corps-specific NEPA regulations state, “The district commander is responsible for making [the determination of whether to prepare an EIS or FONSI] and for keeping the public informed of the availability of the EA and FONSI.” 33 CFR § 230.10(a) [Environmental Assessments].

The NEPA process is intended to “help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.” 40 CFR § 1500.1(c). To that end, “NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. . . . Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.” 40 CFR § 1500.1(b). If there is no opportunity for the public and others to comment on draft EAs, then there is no opportunity to comment that a project may have a significant impact on human health or the environment, which requires an EIS, and the purpose of NEPA is frustrated. *See* 40 CFR § 1501.4(c). *See also Anderson v. Evans*, 371 F.3d 475, 487 (9th Cir. 2004) (stating “The public must be given an

opportunity to comment on draft EAs and EISs, and public hearings are encouraged to facilitate input on the evaluation of proposed actions.”) (citing 40 CFR §§ 1503.1, 1506.6); *Citizens for Better Forestry v. U.S. Dep’t of Agriculture*, 341 F.3d 961, 970 (9th Cir. 2003) (stating “Citizens were deprived of the opportunity to comment on the USDA’s EA and FONSI at all points in the rulemaking process. This deprivation violated their rights under the regulations implementing NEPA.”) (citing 40 CFR §§ 1501.4(b), 1506.6); and *Western Watersheds Project v. Bennett*, 392 F. Supp. 2d 1217, 1222 (D. Idaho 2005) (finding that BLM had not obtained public input on the draft EAs before issuing the Final Grazing Decisions based on those EAs, which violated NEPA under the Ninth Circuit case law of *Anderson* and *Citizens for Better Forestry*).¹

Thus, if the Corps anticipates issuing an EA and FONSI or an EIS, NEPA requires it to circulate the document in draft form for public comment before it makes a final decision on the application for the permit specified in this Notice.

The project has been illegally segmented, and an EIS is required for the entire project.

Fairbanks Gold Mining Inc. (“FGMI”) applied for two permits and State Water Quality Certifications under section 401 of the Clean Water Act for those permits for the heap leach project, POA-1992-574-S and POA-1992-574-T. The Corps has provided no indication of whether it is considering those permit applications separately, or whether it is performing a broader analysis that examines the proposed permits as one project. NEPA requires the Corps to analyze the direct and indirect environmental effects of both permit applications in a single process. It also requires the Corps to analyze the cumulative impacts of the permits from other past, present, and foreseeable future activities at the site and in the area. NEPA requires the Corps to present this analysis for public review in a single document.

¹ In two instances, courts in other circuits have found that the Corps was not required circulate draft permits and EAs for public comment. *See Pogliani v. U.S Army Corps of Eng’rs*, 306 F.3d 1235, 1239 (2d Cir. 2002) (denying a preliminary injunction on the grounds that plaintiffs were not likely to succeed on the merits that a draft permit must be circulated for comment because it is not a report requiring 30-day review of a draft FONSI under 33 CFR § 230.11) ; and *Alliance to Protect Nantucket Sound, Inc. v. U.S Dep’t of the Army*, 398 F.3d 105, 115 (1st Cir. 2005) (finding that CEQ regulation 40 CFR § 1501.4(e)(2) does not require circulation of draft EAs for public comment except under “limited circumstances”). Those cases, however, are not binding on the Ninth Circuit. Further, the decisions in these cases were based upon regulations applicable to FONSI, not EAs, and therefore are not inconsistent with Ninth Circuit case law on EAs.

Specifically, NEPA requires that “[p]roposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement.” 40 CFR § 1502.4(a). NEPA also requires that agencies assess the cumulative impacts of their actions, defined as the “incremental impact of the action when added to past, present, and reasonably foreseeable future actions.” 40 CFR § 1508.7. In this case, the environmental impacts of the entire heap leach project, construction, operation, closure, and reclamation, must be considered in the same document. Otherwise, the project will be illegally segmented under NEPA.

The facts here are remarkably similar to those in *Bragg v. Robertson*, 54 F. Supp. 2d 635, 649-651 (S.D.W.Va. 1999), *judgment vacated on other grounds*. There the first phase of the project was covered by a Nationwide Permit while the second phase would have been authorized by an individual permit. The court found that the Corps had improperly segmented the mining project to avoid a thorough environmental review of all aspects of the project.

Thus, NEPA requires the Corps to evaluate the direct, indirect and cumulative impacts of the entire project in one environmental review document.

A short-term variance of state water quality certification is not warranted in this case.

The Notice “serves as application for a short-term variance of State Water Quality Certification.” It is unclear what constitutes a short-term variance of state water quality certification. Neither section 401 of the Clean Water Act, 33 U.S.C. § 1341, the Code of Federal Regulations, or Alaska regulations provides for such a variance.

FGMI is seeking a short-term variance for the construction as well as the reclamation and closure phases of the project. If that is the case, such a variance would be inappropriate. A variance for the construction of the heap leach pad will result in the elimination of 57.6 acres of wetlands. The Fort Knox Mine project already has sacrificed the Walter Creek drainage to the tailings storage facility. Construction of the heap leach pad will eliminate most of the rest of the waters of the United States in the Walter Creek drainage. As a result, if the State provides a variance from water quality certification, the Walter Creek drainage will be unconditionally sacrificed to the operations of the Fort Knox Mine. At the very least, the State has a duty to provide conditional certification of the project and attach conditions, including proper mitigation for the loss of these wetlands by restoration of mitigation wetlands areas or development of replacement wetlands on a 3:1 ratio.

The Notice states that creation and enhancement of wetlands and other waters on the mine site began in 1997. To date, the Reclamation and Closure Notice states that

FGMI has developed a total of 204.8 acres of wetlands, including wetlands below the tailings dam as well as the water reservoir with its associated wetlands. At the same time, it appears that FGMI plans to use some wetlands as a final "polishing" treatment system and to provide contingency treatment capacity. Apparently, FGMI will construct a series of wetlands below the tailings dam to be used for treatment, and possibly irreparably damaged by, for example, long term polluted seepage from the heap leach pad. The Corps should not include these wetlands in FGMI's offset for the wetlands lost as a result of the project activities, including the proposed heap leach pad.

The Corps also failed to provide information on the location and extent of grayling spawning habitat and other habitat critical for grayling and burbot in the mine site and surrounding area. Without this information, the public and the Corps cannot possibly assess the viability of these fish populations after closure of the mine or the overall environmental effects associated with the mine operation, closure and reclamation, including the heap leach facility. Such analysis is especially critical because, as the Notice states, "it is not intended that the wetlands would have to function in a manner to meet water quality standards prior to discharge at the Freshwater Reservoir." See Public Notice, page 16.

In any event, the Corps should ensure that the mine results in no net loss of wetlands or viable fish habitat, and the mine construction operations and closure should not degrade water quality. The Corps should require FGMI to perform a functional value analysis of any constructed or mitigation wetlands to establish that the wetlands are functional before FGMI is allowed to transfer the mine site to the State and the public because the public should not be held liable for any of the environmental hazards created by FGMI.

We appreciate this opportunity to comment on the Notice. We look forward to an opportunity to review and comment on a draft EA and any draft FONSI, or a draft EIS, for the entire heap leach project. If you have any questions, please do not hesitate to call me at (907) 276-4244, ext. 112.

Sincerely,

Frances Raskin
Staff Attorney

cc:

CENTER for SCIENCE in PUBLIC PARTICIPATION

Stuart M. Levit, P.O. Box 544, Bozeman, MT 59771
Phone/Fax: (406) 585-4589 / web: www.csp2.org / e-mail: slevit@csp2.org
“Technical Support for Grassroots Public Interest Groups”



July 31, 2006

TO: Ms. Sharon Seim
U.S. Army Corps of Engineers,
Alaska District
Regulatory Branch (1145b)
3437 Airport Way, Ste. 206
Fairbanks, AK 99709-4777
Sent Via Email:
sharon.g.seim@poa02.usace.army.mil

Mr. William Ashton
Department of Environmental
Conservation
WQM/401 Certification
555 Cordova Street
Anchorage, AK 99501-2617
Sent Via Email:
william_ashton@dec.state.ak.us

Steve McGroarty,
Alaska Department of Natural Resources
3700 Airport Way
Fairbanks, Alaska, 99709-4699
Sent Via Email:
steve_mcgroarty@dnr.state.ak.us

FM: Stu Levit, M.S., Center for Science in Public Participation

RE: Reference Number POA-1992-574-T (and S)

These comments provide technical analysis of the June 2, 2006 Public Notice of Application for 404 Permit and Short-term Variance from 401 Certification for Construction of a Heap Leach Pad at Fort Knox Mine: POA-1992-574-S, Fish Creek (Public Notice) and Fairbanks Gold Mining, Inc's (FGMI) April 14, 2006 Walter creek Valley Heap Leach Facility Project Description (FGMI's Project Description).

The CENTER for SCIENCE in PUBLIC PARTICIPATION (CSP2) provides technical advice to public interest groups, non-governmental organizations, regulatory agencies, mining companies, and indigenous communities on the environmental impacts of mining. CSP2 specializes in hard rock mining, especially those issues related to water quality impacts and reclamation bonding.

General Comments

Lack of Government Analysis

It is a fundamental flaw that the State and COE notices do not indicate what and how the government has evaluated in this mine proposal. Or what these reviews have concluded.

The Public Notice either sources from FGMI documents or mentions concepts, but provides the public with no benefit from, or opportunity to consider/comment on, the state and federal agencies' analysis or evaluation.¹

When the 1993 Environmental Analysis was completed, the agencies, notably Alaska DNR, touted the document as a functional equivalent as an EIS. The agencies' advances in that analysis and permitting process were lost in the current process where in June 2006 the public was given a Public Notice that highlighted selected parts of FGMI's Project Description. Just before the close of comments, the agencies recognized that the public was denied critical data and documents and they (the agencies) provided a new notice and hundreds of pages of documents. The near-complete lack of agency analysis denies the public a valuable, important, and potentially essential element to consider. No doubt the public provides beneficial analysis of company documents - but the public should likewise have the opportunity to provide beneficial analysis of agency documents and analysis.

Currently, FGMI employs seepage control wells and pumpback to control seepage from the tailings impoundment. The long-term plan appears to be that over time and with repeated tailings flushing the tailings seepage pumpback will not be necessary. However, the proposed addition of a heap leach pad changes that dynamic and the impact of the heap leach pad on the tailings pumpback should therefore be considered.

From a practical and technical standpoint, the agencies' decision to use an Environmental Assessment to evaluate the Fort Knox proposal hinders the evaluation of the proposal. The EA's mechanism is incomplete and thus so is the public's ability to evaluate the project proposal: There is no "big picture" considered, necessary technical information is not available, and the proposal may move forward without a comprehensive analysis. As a result, the Public Notice considers only major segments of the whole project but not the whole mine, as is necessary to really evaluate such a project.

It is unclear from the Public Notices or the documents provided whether or not there was a previous reclamation plan for the mine site. If there was, it should be provided to the public with a sufficient opportunity to compare it with the current plan and thereby comment on the plan and changes.²

¹ A simple example of this is a letter from ACOE, dated June 22, 2005, which accepted the rational and current accounting of the wetlands and aquatic functional value analysis. The letter noted that the current accounting of functions provides FGMI flexibility in the final reclamation design for the tailing impoundment and mine site. Without a comprehensive agency analysis document (state and federal) the public is denied the opportunity to comment on the agencies' analysis of FGMI's conclusions.

² Alternatively, the Public Notice is premature and instead should seek scoping comments consistent with NEPA. The Notice states that "Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act." Under the general NEPA model, the public needs some proposed action - an agency action triggering NEPA - upon which to comment. The agencies do not propose or analyze any action.

By any measure, the public is denied an opportunity to consider or comment on any substantive agency analysis or agency proposal.

Reclamation and Closure Plan

The Reclamation and Closure Plan states that:

The Fort Knox Mine reclamation and closure plan is designed to return land disturbed by mining and ore processing operations to a stabilized, near-natural condition that will ensure the long-term protection of land and water resources. (p.1).

While this appears to be comprehensive, FGMI's proposal fails to identify conditions that are "near natural" and ignores such features as the rarity of large water bodies (see below), change from significantly forested to grassed plant communities, changes in water regimes, etc. In general, FGMI's proposal has many goals and ideals but the agencies should clearly specify the criteria and measurement standards to assess and ascertain where and when reclamation is "successful" for all reclamation features. Otherwise, the reclamation plan is really just a plan to later determine what is needed to define and measure reclamation success.

The Reclamation and Closure Plan describes temporary cessation of some/all operations (p. 36), describes examples of some situations requiring plan or approval/permit modification, and provides that if operations cease for three years then reclamation will proceed. The three-year window is a long time for the project to sit still and reclamation not proceed. The agencies' approvals/permits should specify specific reasonably foreseeable stabilization or reclamation activities that must occur if activities cease for longer than three months. The termination provisions are closely tied to beneficiation processes, but all permits and approvals should include specific requirements that even if the mine closes (whether a day, month, or three years) FGMI is still responsible to ensure that monitoring and maintenance activities continue. This will help protect the environment from degradation caused by the lack of daily operations, such as fugitive dust from fluctuating tailings impoundment water levels, road erosion or dust, etc.

FGMI's Reclamation and Closure Plan concludes that the mine's restoration of historic placer disturbances improved water quality by increasing retention time and reducing sedimentation and turbidity. This is laudable but ignores impacts from decreased flows and other disturbances from reduced flows caused by the mine's water use, the mine's current water contamination, etc. The mine reduced total runoff from the Fish Creek Basin to about 30% of its pre-mining condition (1993 EA at 4-18). COE and Bureau of Reclamation analysis of water flows across the country frequently underscore that "averaging" surface flows thereby removes seasonal fluctuations that are essential to fishery health and natural wetland operations. At this mine - and in future analysis - the agencies should present/chart actual seasonal water flow volume and quality data so that the agencies and public can evaluate the relationships between mine withdrawals, water quality, water quantity, etc.

FGMI's assessment of the post-mine land use environment is that it will benefit from the mine. An example is the creation of a 150 acre/750 foot deep lake. FGMI concludes that

this is a good addition because the area has few very large bodies of water. Such conclusion ignores that a new feature such as this lake has a great potential to impact and destabilize the natural pre-mine environment. By retaining that much water, other areas are denied their natural flows and patterns, predator-prey relations could be impacted as animals water use patterns change, etc. This is not to say that all such changes are bad - but without critical analysis, and analysis by wildlife experts, it is impossible to assess the benefits or negative impacts from, for instance, a 150 acre lake in an area that previously had no or few such lakes. Therefore, the agencies should include an evaluation by wildlife and fisheries experts of the effects of creating a large lake in this area that does not have many such lakes. This evaluation should evaluate the natural resources and ecological pros and cons of such a lake and thereby allow the agencies to consider a lake's actual/probable impacts.

Acid Mine Drainage

The Reclamation and Closure plan states that:

Operational performance has confirmed the pre-mining test results indicating no potential for acid rock drainage or significant metals mobility in Fort Knox ores. (p.48).

However, there is metals mobility in excess of water quality standards, so this statement is inaccurate. Monitoring of seepage from the Fort Knox tailings impoundment has shown that elevated levels of contaminants can come from the processed ore. It is still speculative that the seepage from the tailings that the long term tailings discharge will meet Alaska water quality standards, only monitoring and time will verify this assertion. The statement that "... operational performance has confirmed ... no potential for ... metals mobility..." is clearly overstated, and should be changed - and the agencies' analysis should consider this metals problem.

Furthermore, the Plan still should analyze and consider the potential for neutral-drainage or base-drainage³ contaminants such as antimony or arsenic.

Water Management Scheme

The general nature of the water management scheme appears to be based on not degrading water quality below standards. This ignores the concepts of nondegradation, whereby water quality should not be degraded below pre-FGMI condition. The mine should seek to not degrade water quality to the maximum extent legally allowable - not, as it proposes, seek to not degrade water quality below standards. This minimalist approach to protection and maximalist approach to degradation does not comport with the stated goals of protecting natural resources and returning the land to a near-natural condition (see above). The most obvious example is that the mine's degradation of water quality will impact fisheries and fishery productivity.

³ Contaminants that are mobilized in near-neutral or basic pH states.

The Reclamation and Closure Plan states that:

Immediately after closure not all site runoff and drainage will meet water quality standards for all designated uses. In particular, this is true of tailings and heap water compared with water quality standards established for aquatic life. A comprehensive water balance model approach has been used to evaluate the reclamation alternatives for specific facilities. Based upon the results of this evaluation, an overall, integrated water management and reclamation strategy has been developed to ensure runoff and drainage water quality will not adversely impact designated use standards in the receiving water. The objective of this strategy is to allow Fort Knox to achieve the designated post-mining land uses as soon as possible after mining and milling are finished. (p. 49).

This appears to state that water quality standards will not be met, therefore FGMI proposes to measure use standards to achieve compliance.⁴ FGMI seeks to achieve success by defining success in a manner most convenient to the mine. The mine seeks to achieve success - and achieve it as quickly as possible - by defining success as meeting post-mining land uses. Rather, the agencies should require FGMI define success by meeting explicit and representative protective standards. In this context that means meeting specific water quality criteria (including nondegradation and achieving pre-mine levels or better⁵), but applies to all components and resources at the mine.

A “comprehensive water balance model approach” suggests that rather than measuring water quality at mine discharge points and thereby determining compliance with standards, FGMI proposes to somehow add and/or average water quality. Such “balance” is sometimes used in water *quantity* analysis but appears inappropriate for a water *quality* analysis. By averaging contaminant discharges, the mine could avoid specific criteria at specific discharge points. Such a scheme fails to protect water quality, in favor of averaging contaminant discharges, establishing monitoring points to pursue favorable measurements rather than representative indices, and using dilution and/or attenuation as a means of regulatory compliance. The agencies should not promote or permit such a plan.

The State of Alaska and COE should not allow any successful wetlands reclamation project/areas to be turned into a water treatment facility - even if only for “polishing.”

⁴ The plan to pump non-complying water to the pit lake is flawed for reasons stated below. The pumping is only limited in duration and volume, and therefore is not a solution but merely a cover. Further, it underscores that rather than treating the problem it is being spread around (essentially: dilute the contaminants by spreading them to as many places as possible).

⁵ FGMI’s activities removed and/or reclaimed some historic mine impacts/features that degraded water quality and thereby improved water quality. This is good but also raises the question of what standards should apply. The agencies should apply the most protective standards available, as a means of seeking the most “near natural condition.”

Existing wetlands (natural or constructed) should be protected for fisheries habitat and other non-mine uses.⁶

At page 50, the Reclamation and Closure Plan states:

Water Management Consultants (2005a) has evaluated observed water quality trends to date and predicts that the water quality of the water pool in the tailing impoundment, pit lake, and heap leach drainage will meet the water quality standards for discharge except for some constituents in which the natural condition of the groundwater and surface water in Fish Creek is of lower quality than the criteria for discharge. As a result, site-specific criteria for some constituents that take into account background conditions as outlined in 18 AAC 60.825 may be appropriate.

Without access to Waste Management Consultant's report, it is impossible for the public to assess whether or not this contention is accurate or appropriate. This includes the source of the degradation that is the "natural condition," whether other treatment measures are necessary or appropriate, and whether or not the site specific criteria are properly applied.

The 1993 EA discusses that ground water quality is generally high quality (*see* section 3.10.1) and that surface water quality is generally high where no mining has occurred and lowest where mining has occurred. (*See* section 3.10.2). It describes that Fish Creek had some of the lowest water quality, but the current FGMI facilities footprint, plus pumpback wells, seems to encompass much of Fish Creek's headwaters. Again, without the 2005 Waste Management Consultants report it is impossible for the public to consider the relation between the tailings leaks and pumpback wells and the lowered ground water and surface water quality.

The Summary Water Management Strategy presents many problems, most notably that the documents available to the public contain insufficient information to adequately assess or to comment on the proposed "strategy."

In the first bullet of the summary, FGMI proposes that:

- At closure, the tailings decant pond will initially be dewatered by pumping to the pit during which time the inflow of runoff water will mix with the decant water to improve quality. Pumping will maintain the pond elevation such that sufficient storage volume will be available to contain the 100-yr 24-hour storm event and spring runoff volume with the required amount of freeboard.

⁶ Further, beneficial uses should of course be protected in waters to which the mine discharges, but the standard should additionally include specific numeric criteria - measured at the mine discharge point (as opposed to some point below where mixing and dilution can conceal actual levels of mine contaminants discharged and hide degradation).

The Existing Facilities section (2.1) of the Reclamation and Closure Plan describes that water quality in the decant pond fluctuates or has fluctuated and has included various metals and contaminants, including but not limited to cyanide, antimony, arsenic, and copper. From available documents, and perhaps because it would require estimating years into the future, it is unclear what the water quality and contaminants present would be that are pumped into the pit. While the dilution factor may be significant, this form of disposal (pumping to the largest water body around) should not be permitted. Moving contamination from the tailings impoundment to the pit essentially proposes to dilute the problem so that it can ultimately be turned over to the public (*see* Appendix A). Where possible, mine waters should be treated before disposal, even if disposal is onsite, not rely on dilution as the mine treatment method.

The second bullet underscores the difference between water quality standards and nondegradation goals. It proposes that the tailing impoundment will continue to function as a “zero-discharge facility” until the seepage will not cause exceedances of water quality standards at the downgradient monitoring location. This should not be permitted for at least three reasons. First and importantly for this site, the point of compliance should be immediately below the tailings dam, not just above the water supply reservoir. Second, the goal should be not degrading water quality rather than the goal of merely exceeding water quality standards. Further, the agencies should require that water quality not be degraded rather than allowing the mine to degrade water quality to the lowest legal point of compliance. Third, the standard should be met at the discharge point, not at “the downgradient monitoring location.” Throughout the Reclamation and Closure Plan, including the Agreement for future monitoring and maintenance (Appendix A), FGMI suggests that monitoring and compliance points are or should be below the mine’s present discharge point. This essentially converts the reconstructed wetlands below the tailings dam as a water treatment facility. This “conversion” turns a functioning wetland into a stream segment that does/may not meet Alaska water quality standards - and may not be protective of the aquatic life that has been restored to these waters.

The third and fourth bullets predict that the pond on top of the tailings will in meet water quality discharge standards. It is unclear why “[b]y the time the fresh water pool is allowed to reach the spillway elevation, water quality in the pool will meet standards for discharge” but such a conclusion is suspect. The agencies should provide the reasoning and technical documentation behind this statement.

Alternative treatment should not be wetland cells, which are the subject of the next bullet and which, while potentially useful for various specific water treatments, are not reliable or effective for long-term cold weather/environments (among other deficiencies). The fifth bullet again provides for designated uses as the measure of success rather than actual water quality standards, which the agencies should require and enforce. Further, given the limited efficacy of wetlands, there is no support, and evidence at other sites to the contrary, for FGMI’s assertion that the wetlands treatment cells will “ensure” water quality will be protected.

The sixth bullet again seeks to use designated uses as a standard, but this time provides that such standard will determine when toe seepage water collection can cease. This should be the point of compliance for ground water quality, and toe collection should not cease until doing so will not degrade water quality. If in-situ ground water treatment of the seepage is or could reasonably be necessary, the mine should now provide that data and plan for public comment.

Tailings Impoundment Reclamation

The proposed pond on the tailings impoundment will vary from 200 to 400 acres. This means that the exposed area of dry tailings will vary from 0 to 200 acres.⁷ The Reclamation and Closure Plan provides no measurement or management/treatment of potential blowing sand, which could pose air quality problems and spread chemical and/or physical contamination to wherever it blows. The plan contains no support for wetlands or other vegetation successfully establishing (or standards for same) and what percentage of cover is required to limit blowing tailings material. The agencies should require contingency for this problem - such as an aggressive tailings revegetation program that must be implemented if fugitive dust becomes a problem.

From the water regimes described in the Reclamation and Closure Plan and elsewhere it is surprising that there will be enough water available to cover the tailings impoundment as proposed (including many feet of fluctuation).

The plan asserts that “all discharge will meet water quality standards, as a contingency measure, a wetland treatment system will be constructed to provide a final polishing treatment.” This constructed wetland “system” should not be used or planned for water quality treatment without public review and full design disclosure. Wetland cells have been successfully used in severe-cold environments but their yearly effective period and their treatment efficacy can render them ineffective for substantive water quality treatment.

Section 6.3 of the Reclamation and Closure Plan proposes if the water in the tailings impoundment doesn't meet water standards, FGMI will use the stream for monitoring. As discussed elsewhere, but particularly important here, monitoring points should be the at the point of actual mine discharge - in this case at the tailings impoundment spillway. That would keep the compliance point where it currently exists. There is no reason to move contaminated water (from the impoundment if it doesn't meet standards) thru an area that is already reclaimed (the downgradient stream/wetlands) and thereby downgrade the reclaimed and more healthy area.

The proposed tailings impoundment seepage plan (Reclamation and Closure Plan section 6.3) does not adequately protect ground water quality. It is essentially a “soft” approach to reclamation, proposing to turn off the pump-back wells and if there is contamination develop some form of contingencies. The contingencies discussed may or may not be

⁷ Even a best-case scenario using the mine's proposed 70% cover for mine revegetation still leaves 60 acres of un-vegetated surface to be blown around.

adequate (there is insufficient information for the public to adequately address the issue) but the real problem is that the plan is really a promise to develop some kind of plan if a problem develops. The actual likelihood is unknown (or not described) that stopping the pumpback wells will not degrade water quality.⁸ Further the degree of alternative treatment needed is unknown (or not described). The plan is therefore noncommittal and the agencies should either require that well pumpback not be stopped or the agencies should require specific reasonable contingencies in advance to ensure that water quality is not degraded when the pumpback wells are stopped.

Pit Lake

In addition to discussions above about contaminated water (not) being transported to the pit, the failure to provide the supporting report that substantiates the pit lake quality (and presumptions underlying the analysis) prevents the public from commenting on the actual conclusions. As written, the pit lake water quality analysis acknowledges that it does “not account for stratification or reactions that would likely result in lower concentrations”, but it also does not account for the same reactions and stratification that could result in increased contaminant concentrations.

Heap Leach Pad Stability and Design

The source and adequacy are unclear for the adequacy of the in-heap storage pond to provide storage for solution from a 24-hour draw down plus runoff from a 100-year/24-hour storm event. It appears unsupported and inadequate.

If the heap leach pad under drain system fails or backs up, it is unknown how this could cause the heap leach pad, or pad features (drains, in-heap storage pond, etc) to fail. This should be taken into account and used to expand existing volumes and rates.

Slopes are 2.5:1 to 3:1 and steeper, and the relief across the project area in the Walter Creek valley is approximately 900-1000 feet. Because the area being disturbed has not been disturbed by placer mining, is currently forested, and is relatively steep, the heap pile's stability becomes suspect. The plan calls for removing the cover (trees and everything else) that hold the surface together. Covering it with compacted material does not ensure that it is stable. There is therefore a risk of sliding or slumping, or other motion that could breach the liner and underlying compacted material. This is not only a threat to the heap - which if it moves would likely cause loss of solution. Because the heap is located just above the tailings pond, if the heap moves or breaches, it could harm the tailings impoundment causing further damage. Both contain toxic materials which if released would degrade surface and ground water resources. This is particularly important for ground water because depth to water in the bedrock (which is overlain by permeable material) is as little as two feet. Below the tailings impoundment the mine appropriately responded to groundwater contamination by pumping - but preventing contamination is more appropriate.

⁸ Fractured rock aquifers play a role in groundwater behavior and therefore contamination has a high potential to spread in to ground and surface waters.

The description of the geologic stability found at page 9 of the Public Notice describes a potentially stable foundation but does not describe the methods by which stability was determined. Most importantly, the analysis fails to consider other potential geologic instabilities. FGMI should be required to demonstrate that the heap will not be impacted by slippage planes in the underlying material or slump failure in the heap material itself. Such evaluation is necessary to ensure that all reasonable geologic instabilities are carefully evaluated.

Further, the drill results (of unspecified representativeness) do not necessarily ensure that zones of weakness could not be triggered by the loaded pad. The heap pad will include 161 million tons of ore, plus the weight of the 12-inch compacted underlayer, plus the weight of the solution.⁹ The site's stability is therefore not clear and more information is needed for the public and agencies to determine the stability of the proposed heap leach pad.

Heap Cyanide Destruction

Both documents state that:

After economic leaching has been completed, solution will continue to be re-circulated on the pad to promote cyanide destruction. No cyanide will be added to the solution during this step. Freshwater will be added to the system as required to facilitate rinsing and removal of metals.

The mine should know, and the plan should identify, how many pore volumes it will take to adequately rinse the heap leach pile. It should not be "as required." Further, the plan should identify the target final metals/constituent concentrations.

FGMI'S Project Description states that:

Although the chemical mass to be pumped to the pit from heap leach and the tailing is believed to be less than the amount that would compromise the water quality in the pit long term, the chemical mass pumped will be monitored closely, and if necessary, a treatment system will be implemented to reduce the chemical mass going to the pit. Some treatment options include engineered wetlands, reverse osmosis, oxide scavenging, chemical reduction and biological mediated reduction. (p52).

This lack of fundamental information suggests that the mine is essentially "winging it". The lack of this information evidences "permitting-as-the-mine-proceeds" as opposed to taking a hard look at the mine and permitting based on a known design and reclamation plan. These data should be available to the regulatory authorities and the public for analysis and comment before the permit is issued, not afterwards.

⁹ According to FGMI Project Description Table 4.1, the In-Heap storage volume could be as high as 110 million gallons (which at 8 pounds per gallon is approximately 440,000 tons of solution).

Similarly, FGMI'S Project Description states that "If the tailing facility is still an operating facility at the completion of [heap] drawdown, the heap leach water will be released to the tailing impoundment when the quality meets the criteria for discharge to the tailing." (p52). These criteria should be identified for public analysis and comment.

Heap Foundation and Liners

It is critical that permafrost be fully detected/identified during pad construction to ensure that all of it is removed from the heap leach pad's footprint. If it is extensive, suggesting a heavily frozen substrate, FGMI should also remove a reasonable margin to the sides of detected permafrost (not just below, as provided in the Notice) to ensure none remains.

The compacted material underlying the HDPE liner should be specified/required as swelling clays, compacted to a minimum permeability of 1×10^{-8} cm/sec. Using a double-synthetic liner with leak detection system (not just those proposed in the Public Notice and by FGMI), and underlying it with compacted swelling clays, increases the chance that if a leak occurs it will be more quickly detected, and that the underlying material may be able to re-seal, limiting the distribution/extent of contamination.

The leak detection and response described in section 2.1 of Reclamation & Closure Plan states that:

A Leachate Collection and Recovery System (LCRS) constructed in conjunction with the double liner in the area of the in-heap storage reservoir will provide leak detection. A Process Component Monitoring System (PCMS) will be constructed under the main header lines for the solution collection system providing leak detection in those areas of high flow where leaks are most probable. An underdrain system consisting of a network of drainage channels containing slotted pipe in drain rock will route water from seeps and springs under the sub-liner to the tailing impoundment. (p.13).

The double liner/LCRS does not extend under the entire leach pad. Therefore it is unclear whether the systems described will actually detect a leak. In other words, will the lower liner of the LCRS be anchored into bedrock in order to collect a leak that occurs above the area of the leach pad with the double liner? If not, the agencies must require some method to detect leaks from above the area of the pad with the double liner.

In the overliner, above the synthetic liner, FGMC proposed to place "three feet of crushed rock predominantly less than one-inch in size containing a network of piping to promote rapid drainage." Because the rock is crushed, and therefore likely highly angular, and because the rock and piping network will be placed by machines (likely loaders, belly loaders, bulldozers, trucks, etc.) there is a reasonable chance that the machinery or rock could cut-into, degrade, and otherwise impair or breach the synthetic HDPE liner. Liners should comply with applicable ASTM standards to consider the materials placed (especially the crushed rock proposed), the equipment used to place them, and the

ultimate maximum heap leach pile load.¹⁰ The material between the liners in the Leachate Collection and Recovery System (LCRS) is “1-foot thick, well graded clean sand ... with collection pipes....” Instead of using crushed rock alone, FGMI should employ a sand layer in the leach pad overliner to provide a much more protective - and effective - layer between the crushed rock and HDPE liner.

The documents identify that all solutions will be moved to and from the pad in pipes, but are silent on the potential for pipe freezing and how that will be prevented. This should be corrected in the documents and measures taken to ensure that freezing does not occur, and that leaking and discharges from pipe failure can sufficiently be detected, captured, and treated.

FGMI’S Project Description discusses that the base platform will be constructed to provide a base for the heap storage embankment and avoid removing or constructing on the existing tailings impoundment. It is not clear, however, whether the tailings impoundment coming up the base platform¹¹, or a saturated conditions, such as those caused by a leak from the heap or tailings impoundment, could impact structural stability or integrity.¹²

Heap Leach Reclamation

The Reclamation and Closure Plan states that:

Column testing currently underway will provide more detailed information on the quality of rinse water at the completion of rinsing and the time required for rinsing. The column testing will be completed in the summer 2006, and a supplementary report will be prepared to address water quality associated with rinsing. (p.61).

This information should be available prior to agency permitting and the public should be allowed to comment on the results and analysis. FGMI’s documents assert that cyclic rinsing will sufficiently degrade heap contamination to allow for discharge, but without this data those assertions are unsupported and premature.

FGMI’S Reclamation and Closure Plan and its Heap Leach Project Description both identify that:

The tailing impoundment is located directly downgradient from the proposed heap leach pad and will be an integral part of the long-term solution management scheme. (p.60 and p.49 respectively).

¹⁰ Critical examples include, but are not limited to Tensile strength (ASTM D638); Tear resistance (ASTM D1004); Puncture resistance (ASTM D4833) and Low-temperature brittleness (ASTM D746).

¹¹ FGMI’S Project Description states that “The ultimate level of the tailing will cover the lower 40 feet of the base platform.” (p.22).

¹² It is possible that such a design will in fact help provide a “toe” for the base platform, but the failure to address the issue entirely is of concern.

The long-term solution management scheme is not known nor does it appear to have been provided to the public. This management scheme is important for public review and the public should be provided an opportunity to comment on it regarding the heap leach pad.

The plan to release the heap leach draindown to the tailings impoundment poses numerous concerns. The Reclamation and Closure Plan states that:

Once the liner has been punctured sample collection from the pond recovery wells will cease, but quarterly measurements of water levels will be made.
(p.74)

It is unclear whether this description means that FGMI proposes to breach a portion of the heap pond/liner to allow drainage from the liner - as opposed to actually puncturing the liner. If it is the former FGMI and the agencies should clarify the statement. If in fact FGMI proposes to puncture the liner, the agencies should prohibit it.

Puncturing/penetrating (drilling-thru) the primary and secondary liners seems a lot like the "historic" method of heap reclamation that consisted of the same procedure and essentially created a drain. There appears to be no good reason to puncture the heap liners. However, there are many reasons to leave them intact. These include but are not limited to increased water quality monitoring, the potential to collect pad water for treatment if required, and the irreversibility of breaching the liners.

It is unclear that the monitoring/measurement for the rinsing recycling plan are adequate/sufficiently representative of the in-heap storage waters to ensure that in-heap drainage will meet permitted standards.

The plan to release long-term heap seepage to the tailing impoundment is essentially a plan to release the heap discharge to be diluted by the waters covering the tailings impoundment. The "wetlands encountered on the tailing surface" are neither designed nor planned for water quality treatment. Rather they are a potential byproduct of a wet environment. Without adequate predicted water quality data and wetland treatment mechanisms (residence time, physical exposures, plant and detritus composition, etc.) there is no way to predict whether or not the reclaimed (flooded) tailings pond will provide sufficient treatment for unknown discharged heap leach water quality.

The heap solution should be cleaned-up/treated at the point of discharge from the heap because it could cause a cascade of problems if heap contamination were to be "shifted" to other parts of the mine. It is a mistake for the public or agencies to approach the heap leach reclamation plan as an actual plan. Rather, the agencies should impose the heap leach discharge standards on FGMI and it should be FGMI's responsibility to meet those standards - at the heap leach pad boundary. As written the Reclamation and Closure Plan and Fort Knox Mine Closure Management Plan for Proposed Heap Leach Facility (Heap Leach Closure Plan) both include varying degrees of unknown, unproven, unsupported and/or unplanned methods of ensuring the heap leach pad does not degrade water quality.

If the agencies determine to permit the heap leach facilities, the agencies should enforce that water quality standards (including nondegradation) are met at the heap leach pad boundary.¹³ That will avoid using the tailings impoundment, pit, other mine facilities, wetlands, or undisturbed areas/waterways to “perform” water quality treatment and reclamation.¹⁴ The addition of the heap leach facility should not be at the expense of surface or ground water quality. The standard established for heap leach discharge should be at the heap leach boundary.

The Heap Leach Closure Plan states that a “1-ft thick cover consisting of topsoil/colluvium was defined for the nominal condition” (p.19; excerpted at Reclamation and Closure Plan p. 62). It is unclear what a “nominal condition” means and it is very likely that that is insufficient to establish mature plant ecosystem. Growth media on top of contaminated or potentially contaminated materials should consist of some sort of capillary barrier(s) to prevent upward migration of contaminants into replaced soil (growth media). It is further recommended that the material be as deep as possible (see above discussion about general growth media redistribution depths). All available material should be used. If testing demonstrates that the amount of material is insufficient then alternative materials should be created or imported to ensure sufficient material is used.

Wetlands

The Reclamation and Closure Plan identifies that:

Very significant opportunities remain within the tailings disposal area and the all other areas to exceed the wetlands functional status; and
By any reasonable measure, the Fort Knox project is very significantly ahead of schedule in terms of meeting its mitigation obligations for wetlands functions and values.

This is good but any permit decision should establish actual goals for wetlands, including standards to be met - including monitoring and compliance standards - to ensure that opportunities translate into actual wetlands functions. Recognizing the limitations of functions measurement and potential for degradation over time, any permit should maximize replacement wetlands, not just meet pre-mine estimates. This need is underscored by the differences between the methods and focus of the 1993 CH2MHill Environmental Assessment and the FGMI’s 2006 Reclamation and Closure Plan. The former discusses quantitative and qualitative conditions and impacts dating to the early 1900s. The latter compares predicted wetlands with those in 2004. Much of the wetlands created are based on wetlands surrounding mine process facilities and therefore wetlands functions assessment is based on the best-case scenario and does not consider

¹³ Where monitoring at the boundary is not possible then the closest possible point should be employed.

¹⁴ For example, there is no support presented for FGMI’s assertion that “the chemical mass to be pumped to the pit from heap leach and the tailing is believed to be less than the amount that would compromise the water quality in the pit long term....”

mine failures or the potential for future mining problems.¹⁵ The public should not be required to maintain the long-term liability from FGMI's mining activities. If the bonding concepts included in that Agreement are sufficient, then the company should not object to maintaining the associated liability.

If portions of wetlands or creeks are intended or could be used for water quality treatment, those wetlands or creeks should be removed from consideration as fish habitat. The two are not necessarily entirely mutually exclusive, but water quality treatment by definition implies degraded water which is inconsistent with fisheries habitat. Therefore, absent data to demonstrate that fish habitat will not be impaired, for discussion and regulatory purposes these wetlands/waters should not be included in both categories.

Regrading and Revegetation

FGMI'S Project Description identifies that approximately 12 inches of soil cover will be placed on the regarded surface (p. 54). The Reclamation and Closure Plan provides that:

Growth media will be applied only to those sites where required to achieve satisfactory vegetation establishment and growth. Application depth may vary depending upon the facility, but a depth of six inches is assumed in this plan. Assuming a disturbed area of 3,923 acres applying 6 inches of growth media over the entire area would require 3,164,555 CY of growth media. (p. 38).

FGMI's plan therefore does not use the entire 7,894,333 yards of stockpiled material available. No rationale is provided for this failure to use the material. The likelihood of reclamation success is generally (if not always) increased with increasing depth of suitable cover growth media. FGMI spent the resources to salvage the soils and it would be unsupportable to not use these materials to increase the chances of long term reclamation success. As written, the cover media "plan" is essentially a series of goals and statements of intent - not a plan. The agencies should require specific soil/cover material replacement depths that use all available materials where they are most needed.¹⁶

The topsoil salvage piles will stand unused for years. As a result the soils quality will degrade during mine/heap operations and the soil value will be reduced from when it was salvaged compared to when it is replaced. To preserve soil integrity (including organic materials, microbes such as mychrrhizae, promote aeration, reduce weed introduction, and reduce erosion, the agencies should require establishing nurse crops on the topsoil salvage piles. These plants should be consistent with, and not compete, with the planned postmine revegetation.

¹⁵ For example, wetlands function could be impaired by a pump failure, tailings leak, heap pipe leak, etc. The post-mine environment is not a self-healing nontoxic environment. It is a human created and human controlled environment subject to liner degradation, pump failure, human error, etc.

¹⁶ As opposed to where it is convenient/cheapest to spread them.

The Heap Leach Project Description identifies that there are no sources of native seed and the Reclamation and Closure Plan identifies the potential for non-native seed use. The mine should be required to collect native seed from on the mine site itself or nearby. Based on the Reclamation Plan schedule (Reclamation and Closure Plan Schedule, Figure 5.0), there are many years to formulate a native seed source and plan. The mine should also be required to establish native plant growth on the soil stockpiles. These plants would help stabilize and protect the stockpiles, provide seed sources, test germination and establishment rates,¹⁷ test fertilization rates,¹⁸ enhance mycorrhizal and other biotic health, etc.

The mine's discussion does not identify standards for acceptable erosion¹⁹ or other reclamation features - determining in advance what successful reclamation will look like.²⁰ The 1993 Environmental Assessment states that "The project area is predominantly forested." (p. 3-18). Therefore, the post-mining revegetation will not mimic the pre-mining vegetation for many years. To promote climax vegetation, and natural succession to later seral stages, the revegetation plant mix should mimic nearby areas where grasses naturally evolve into forest and where soil types are similar to those salvaged by the mine.

The Reclamation Plan states that:

A vegetative cover criterion of 70% will be achieved prior to requesting final release of financial assurance for each reclaimed area. The 70% cover criteria may be waived upon the concurrence of ADNR or the land owner for specific areas that are deemed stable, have minimal potential to adversely impact surface water quality, and are consistent with the post mining land use. (p. 40).

It is unclear where the 70% cover criteria derives from or why it is so low. The reclaimed cover rate should mimic similar undisturbed areas for the plant type established. Further, long-term success and successional advancement would be significantly improved by increased ground cover. The company should be required to have at least 85% cover which should not be reduced. The plan does not - and should - discuss the potential for weeds or how weed invasion will be prevented or treated.

¹⁷ This could be especially useful because the five soil types described in the 1993 EA will be/have been mixed and altered by salvage, storage, and re-spreading.

¹⁸ The plan provides that fertilizer would be applied *prior to, after, or during the seeding operation*. Fertilizer use before and during seeding should be carefully monitored - because of its tendency to burn or cause "stringy" germination. Further, fertilization may establish greater early plant growth, but at levels which are not supportable based on natural/unaided precipitation and conditions. This can lead to a couple years of good revegetation, but long-term failure because the reclamation established a non-sustainable crop. Further, fertilizer runoff causes water quality degradation and impacts fisheries. Therefore, the agencies should consider using as little fertilizer as possible, if any.

¹⁹ It is insufficient to say that the pad will be evaluated to assess the need for additional erosion control measures. It should identify the standards that will be met for reclamation to be complete.

²⁰ This should include percentage cover, alpha and beta diversity goals, etc.

Vegetative cover, and the applied criteria, should consider both alpha and beta diversity. Both are necessary to properly evaluate vegetative composition and health - and therefore both should be required to evaluate/determine the success of the mine's reclamation.

The Waste Rock Dump discussion proposes that:

If it is determined by FGMI that the waste rock does not provide a growth medium that will support the successful establishment of vegetation, a minimum of six inches of growth media will be placed. If attempts to establish vegetation on waste rock prove not to be successful, growth media will be placed. Where growth media is determined to be needed, the depth of growth media placed will be dependent upon the quality of the underlying waste rock, but typically, a minimum of six inches of growth media will be placed. (p. 65).

The Plan should reverse this analysis. Rather than determining if cover media is necessary, the Plan should ensure that all available materials are used and all available growth media is distributed. Even if the waste rock is capable of supporting plant growth, there can be little doubt that adding growth media will enhance that growth and increase short and long-term revegetation/reclamation success.

Further, in addition to or in as an alternative to ripping, implementing dozer basins would increase site variability and potentially therefore promote more diverse vegetation and habitat.

While some facilities' revegetation plans include forbs, there appears to be no plans to plant larger shrubs (except willows) and trees. The agencies should require some tree plantings, preferably cone-tainer or other non-bare root stock. Especially when planted in ripped lines/dozer basins these larger woody species and trees enhance habitat and speed seral development. The cover material storage areas could be used as nurseries for these species in addition to seeded species (grasses as described elsewhere).

Roads

The permitting agencies should limit/establish maximum clod sizes to ensure that the roads are sufficiently scarified/ripped. Because reclaimed road sites tend to be particularly biologically barren, road reclamation should include adding organic material that comprises fungal and other biotic materials. Because restored roadbeds tend to be particularly dry, micro-contours should be considered to enhance seed and water trapping/holding.

Buildings

No post-mine land use discussed includes any potential use for buildings on this mine site. Therefore all buildings should be removed. No building materials or detritus should be buried. Care or prevention/mitigation should be employed to ensure that chemical

stores, materials contaminated by spills or leaks, etc. are not allowed to languish at the site or become exposed to the elements and thereby potentially wash onto soils or into waters.

Monitoring

Rather than establishing a monitoring plan that pre-establishes the duration of monitoring (such as the tailings impoundment being monitored monthly for two years, then quarterly for three years, then annually for some period thereafter) the agencies should require minimum reasonable standards such as these, but should also require that more-frequent monitoring will not reduce in frequency until all constituents measured meet the permitted standards for at least two years. That way, the failure to meet predicted and required standards will trigger continued monitoring at the appropriately more frequent levels.

Monitoring for sediment and other reclamation-activity caused degradation should be specified and required by the permitting agencies. It is insufficient for FGMI personnel to “routinely” monitor and maintain sediment and other protective features (*see e.g.* Reclamation and Closure Plan, p. 75). Where reclamation activities could reasonably cause further short-term degradation, specific protective measures (at a minimum, BMPs such as required by the Forest Service in timber cuts) and monitoring should be required.

Heap Monitoring

The Project documents identify that:

Due to the presence of the tailing directly downgradient of the heap leach facility, no suitable locations for groundwater monitoring wells exist. The presence of tailing likely has interfered with local water quality that would limit the effectiveness of monitoring wells in detecting potential seepage. Therefore, monitoring will occur in the PCMS and underdrain systems during operation and closure of the pad.

The fact that previous leaking has contaminated groundwater is known and FGMI is pumping-back contamination. However, it is insufficient, based on the above quotation, to conclude that because there has already been contaminated from the tailings impoundment, and because it may be difficult or expensive to monitor for heap leach pad leakage, the regulators won't require it and the company won't do it.

Monitoring “the barren solution, pregnant solution, LCRS, PCMS and the underdrain system due to their potential for detecting process fluids in the even of leakage” is not adequate monitoring for the heap leach pad and does not sufficiently protect water quality.

Monitoring wells could reasonably be placed in the constriction²¹ near and/or below the Organics and Growth Media Stockpiles, whether directly thru the stockpiles or via angular drilling. This would not disturb the tailings or stockpiles. Furthermore, the documents do not discuss the possibility or effectiveness of monitoring wells along the lower-elevation perimeter of the proposed heap leach pad.

Finally, monitoring for heap leach chemicals should be added to existing monitoring wells. Leakage from the heap leach would have substantially different chemistry than leakage from the tailings impoundment. Therefore, monitoring for heap leach chemicals and byproducts could effectively be added to the existing tailings impoundment wells and monitoring locations, so that if heap leach chemicals show-up, the mine and regulators will know there is a leak.

Mines frequently discuss that the heap leach solutions, especially the pregnant solutions, are valuable and that their loss will be missed and not allowed to happen. But leaks still occur in both pregnant and barren solution systems, and from heaps themselves, and therefore sufficient monitoring is imperative.

Reclamation and Closure Costs

FGMI'S Project Description discusses reclamation costs, but does not include indirect costs, provides no allowances for additional pumping of collection wells below the tailings dam toe to potential increased contamination from heap leach drainage, particularly cyanide and arsenic. Finally, it is imperative that the equipment and personnel costs be those currently realized at the mine, and that current values be adjusted for inflation to cover the period until the next review of the reclamation costs.

In May 2003, CSP2 completed a review of the Fork Knox financial assurance.²² The report concluded that the then-available reclamation bond was likely insufficient to cover reclamation costs. The degree of insufficiency varied greatly²³ especially when considering the duration of water quality treatment required.

In 2005 CSP2 completed a survey of Alaska mine bonds that included the Fort Knox mine.²⁴ The analysis for the Fort Knox mine estimated that the then-existing bond

²¹ Viewed from above, the organics storage area forms the narrow midpoint of an hourglass.

²² Sarah Zuzulock, FORT KNOX MINE FINANCIAL ASSURANCE REVIEW. Center for Science in Public Participation. May 2003. Available at: <http://www.csp2.org/REPORTS/Fort%20Knox%20FA%20Review.pdf>. Detailed spreadsheet supporting information is available at CSP2.org then "reports".

²³ Financial assurance costs were determined to potentially increase from 13% to 291% if water treatment is needed for 5 years; and by 759% and 1143% if treatment is needed for 50 and 100 years respectively.

²⁴ David M Chambers, ALASKA LARGE MINE RECLAMATION BONDING – 2005. Center for Science in Public Participation. September, 2005. Available at: <http://www.csp2.org/reports/Alaska%20Reclamation%20Bonding%20-%20Sep05.pdf>. Detailed spreadsheet supporting information is available at CSP2.org then "reports".

amount was deficient by almost a factor of 3. The actual bond was \$12,150,415; the estimated bond required based on reasonable best case scenarios was \$46,620,799; and the worst reasonable case bond estimate was \$148,280,794.

The bonding amounts in the Reclamation and Closure Plan do not appear to correct the indirect and other cost deficiencies identified in the above two reports. Nor does the Agreement in Appendix A reflect an adequate bond calculation or assurance. Therefore, the agencies are urged to recalculate the existing bond. If the agencies determine to permit the heap leach facility, they are further urged to calculate the heap-related bond amounts in light of CSP2's analysis and recommendations.

Transferring FGMI Facilities to Public Ownership and Management

The plan in the agreement for future management (Reclamation and Closure Plan Appendix A) appears in part to be an agreement to defer final planning for ten years. There are many intents and lots of goals, but limited commitments on how the land will be managed and what long-term management will look like or how it will impact the public and natural resources. At best this is a "sweetheart deal" for the company; at worst this is a long-term future liability for the public.

FGMI's transfer of its facilities to the state (or nonprofit organization) also transfers the potential liability for those sites, essentially fixing the company's liability and leaving the public responsible for post-transfer reclamation failures. The addition of a heap leach should trigger that agreement to be reevaluated, with the opportunity for public review, such that the impacts from the heap leach pad are included in the calculus for the agreement itself.²⁵ The State and people of Alaska should not be liable for long-term mining-related problems that could impact the site.

Closing Comment on Document Logistics

Most maps in the Public Notice and various referenced documents are identified as not to scale, which makes accurately assessing and commenting on features difficult. Likewise, most maps are limited to the project boundary, which inhibits assessing the proposed action and project in terms of the topography and environment in which it sits. Appropriate maps are necessary for adequate public assessment and comment.²⁶ The Adobe Acrobat documents the agencies made available are in a particularly large Adobe format - and some are not "searchable" or annotatable (via Adobe Acrobat Reader highlighting and comment boxes). Further, some graphics/maps/diagrams are especially slow to load because of what is presumed to be a large size. CSP2 requests that when saving/converting documents into Adobe the agencies use the smallest possible document size and employ Adobe's graphics reducing features. This will increase portability to and accessibility by the interested public.

²⁵ The literal calculus for funding the transfer and maintenance fund are included.

²⁶ It is possible, albeit unclear, that the map "bases" are to scale, but they are labeled NTS because mine buildings and small-size features are not to scale.

From: Stu Levit [mailto:smlevit@yahoo.com]
Sent: Monday, July 31, 2006 4:07 PM
To: Boles, Luke
Subject: Fwd: Reference Number POA-1992-574-T (and S); Fort Knox/Walter Creek Comments

Mr. Boles:

Dave Chambers from the Center for Science in Public Participation noted that I failed to include you in the attached comments/email regarding the Fort Knox/Walter Creek Mine. I apologize for my oversight and am now forwarding it to you.

Please contact me if you need additional information or I may be of assistance with the State's actions on the Fort Knox mine proposal/project.

Thank you for considering our comments

Sincerely,
Stu Levit

Stu Levit
slevit@csp2.org
406.585.4589
www.csp2.org

Stu Levit <smlevit@yahoo.com> wrote:
Date: Mon, 31 Jul 2006 15:53:04 -0700 (PDT)
From: Stu Levit <smlevit@yahoo.com>
Subject: Reference Number POA-1992-574-T (and S); Fort Knox/Walter Creek Comments
To: sharon.g.seim@poa02.usace.army.mil, william_ashton@dec.state.ak.us,
steve_mcgroarty@dnr.state.ak.us

Dear Ms. Seim, Mr. Ashton, and Mr. McGroarty:

Attached please find comments from the Center for Science in Public Participation to your respective agencies on the Fort Knox/Walter Creek Mine (Public Notice Reference Number POA-1992-574-T (and S)).

Ms. Seim, would you please reply to this email to acknowledge that our comments were received.

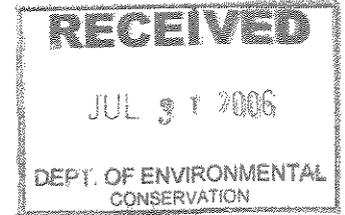
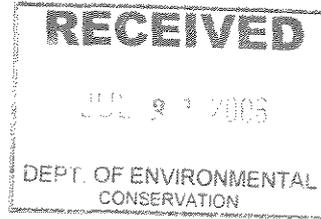
Thank you for considering our comments. Please contact me if you need additional information or I may be of assistance.

Sincerely,
Stu Levit

Stu Levit
slevit@csp2.org
406.585.4589
www.csp2.org

US Army Corps of Engineers
Alaska District, Regulatory Branch
Fairbanks, Alaska

Re: POA-1992-574-S
Waterway Number Fish Creek
Both Permit Requests:



July 31, 2006

Comments also for AK Dept. of Environmental Conservation,
AK Dept. of DNR Mining,

After reviewing the Ft. Knox Heap Leaching Project and Reclamation and Closure Plan, I found a few things that I thought needed addressed.

- Dam Integrity; what is the water holding capacity of the dam and can it support 30 million gallons to the maximum of 110 million gallons of water if a disaster was to happen to the heap leach holding system. Are there any emergency procedures that are present or to be included for such a disaster that can cause the dam to break?
- Surface Sampling (water and soil); there seems to be no sampling what so ever on or around Solo Creek, the area behind Walter Creek. How will we know if this project is seeping through to this area? This waterway connects to a major tributary and this can contaminate a large area and threaten wildlife and humans. I also see no surface sampling around the top and parameter of the heap leach area. I would like to see surface sampling in this area to catch any possible contamination from the cyanide solution. Also much of the surface sampling has been removed from the tailing pond area and Fish Creek and I would like to see more surface sampling areas implemented for a safety net. If this solution ends up in the monitoring wells, it will be too late to clean the water table and soils that will be affected by this.
- Project Design; I have seen areas in the drawings that showed exposed cyanide solution around the sides of this project. How can this be enclosed so that wildlife will not get into this area? The underneath monitoring system has large gaps between the collection and monitoring pipes (or trenches) and that liner breakage can allow the cyanide solution to escape from these areas with no way of knowing until the monitor wells downstream show this problem and the soil and groundwater are contaminated. I would like to see a worst case scenario drawn up so that new designs can be implemented for a better monitoring system and capture plan. Alaska topography and soils, especially permafrost makes road building difficult with frost heaves, can this scenario affect the liner and cyanide solution collection plans?
- Sublimation; with close to 110 million gallons collected in this area how will winter sublimation scenarios affect this area? Can air quality be affected, and can this cyanide solution create an acid rain effect?
- The height of the proposed heap leach project is close to 2400 ft. elevation, which is the elevation height of the topography. Two small areas are at 2550, but the bulk of area is at 2400ft. Can any of the cyanide solution escape over the top? Freezing in winter is normal for Fairbanks and a usual winter can have long time periods of -20°F to -45°F and sometimes will reach -60°+. Water freezes and can create an ice dam within the heap leach, which can cause the cyanide solution to move upward rather than downward like is designed. Can this scenario force this cyanide solution away from the project and outward or over the top of the project?
- If this project is to implemented will there be any new projects that can add into this, such as True North or Ester Ryan Lode satellite sites? What will the cumulative effects be to this project?

- Risks weighed with Benefits; Temporary benefits to long-term environmental health. Fairbanks Gold has given the community many jobs and most people are looking at this project with the idea of jobs. It is known that Jobs are needed in Fairbanks, but is this project environmentally sound enough to allow for the risk of cyanide contamination in this major tributary area? What are the risks to wildlife? If the dam breaks because of an unforeseen event will there be a way to contain this disaster?
- Bonding; most large scale projects like this when something goes wrong ends up costing a State and Federal Governments Billions of dollars in clean up costs. Is the bond sufficient enough to compensate the clean-up costs?
- Recreation; the community was promised that this area would have a reclamation plan to convert this mining area into a recreation area when all projects were done. This heap leach area is situated at the upstream side of the proposed lake area. Can this cyanide solution get into the lake area which would be unhealthy for human usage and not allow people to use this lake?
- If a rush of water was to mix with the tailing pond and quickly forced into the dam area, what will happen if the dam breaks and millions of gallons of water are quickly forced into the Fish Creek water system? Will it flood areas? Will it contaminate these areas? What is the worst case scenario from this and are there any emergency procedures that can stop this from happening? Are there backup pumps are ways to "sandbag" the area to contain this flow?
- Roads and Total Disturbance; how many new roads are going to be added to this project and is the total disturbance from the total Ft. Knox project really able to have reclamation projects that will allow this area to be environmentally healthy for wildlife and human usage?

If this project is to be allowed I hope that these considerations and questions can be implemented so that not only jobs will be created, but also a good safety net for the environment can be implemented also. With the project design flaws that exist, this project needs to go back to the drawing board and thought out more, so that these flaws are removed from the plans. It is unwise to allow a project at this scale to be allowed with major risks to the environment attached to them. This letter is designed to help the ones who are administering over the project to see the flaws so that they can be remedy. Production is important to our State, but not at the risk to the environment of future generations.

Thank-you for your time and consideration of this letter,

Susan Woods

Athenia Enterprises

Environmental Consultation and Researcher

P.O.Box 84597 FBKS AK 99708

(907) 460-2133

Susan Woods



YUKON RIVER DRAINAGE FISHERIES ASSOCIATION

725 CHRISTENSEN DRIVE, SUITE 3-B • ANCHORAGE, ALASKA 99501
TELEPHONE: 907-272-3141 • 1-877-99YUKON(9-8566)
FAX: 907-272-3142 • EMAIL: info@yukonsalmon.org
WWW.YUKONSALMON.ORG

State Of Alaska Dec Certification Of Army Section 404 Permit
ATTN: William Ashton
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501-2617
Telephone: (907) 269-7564
Fax Number: (907) 334-2415
Email: william_ashton@dec.state.ak.us

Re: Comments on Fairbanks Gold Mining Inc.'s CWA §404 Permit Application – POA-1992-574-S, T

Dear Mr. Ashton:

The Yukon River Drainage Fisheries Association (“YRDFA”) appreciates this opportunity to comment on Fairbanks Gold Mining Inc. (FGMI)’s application to the Alaska Department of Conservation for State Water Quality Certification. As a non-profit organization, YRDFA works to provide a collective voice for the people of the Yukon River watershed to ensure the long-term sustainability of the river, its cultures and economies by promoting healthy, wild salmon fisheries on the Yukon River. FGMI’s application to add a cyanide heap leaching facility to the Fort Knox mine poses significant risks to fish and aquatic life, as referenced below. Given the small benefits to the public interest and the enormous potential threats posed by this new activity, we ask the Alaska Department of Environmental Conservation to deny this permit application.

1. FGMI’s proposed Heap Leach Facility Operations and Closure Plan does not adequately prevent or protect against toxic releases.

FGMI’s proposed heap leaching operation sets forth a series of preventative measures designed to contain the cyanide used in operations, and prevent its release. While some of these measures, such as the 80 mm thick HDPE liner for the heap leach pad, may offer good short term containment measures, there is not sufficient evidence that the liner will not break down over time. While the HDPE liner’s integrity may be preserved in the short term, there is no evidence that this material – critical to containing the cyanide solution over time – will not break down under stress over longer periods of time.¹

¹ *Tarnishing the Earth: Gold Mining's Dirty Secret*, ENVIRONMENTAL HEALTH PERSPECTIVES (October 2001) available at <http://www.ehponline.org/docs/2001/109-10/EHP109pa474PDF.PDF>.

While the tailings pond and in-heap storage pond have been designed as a "zero discharge" facility, and thus not subject to permitting under section 402 of the CWA, seepage from the unlined tailings pond has already occurred at Fort Knox and is controlled through mechanical pumping. While FGMI has designed their facility with numerous safeguards, including planning for 24-hour drain downs and 24-hour/100 year storm events, history shows us that tailing impoundments and cyanide heap leach pads fail, allowing devastating releases of toxic chemicals into our nation's waters. The Summitville Gold Mine in Colorado, a cyanide leach facility, destroyed over seventeen miles of the Alamosa River downstream of the mine after cyanide and other toxics leached from the site. It is now a Superfund site. Cyanide leaks and spills at the Beal Mountain, Kendall, Golden Sunlight and Zortman-Landusky mines, all in Montana, have contaminated drinking water and destroyed streams. These incidents, among others, were so devastating that the historically pro-mining state of Montana passed a citizens' initiative to ban all new cyanide leach mines.

FGMI's operation and closure plans rely on the soundness of their containment systems. While monitoring may detect a leak or release should it occur, detection would be too late in the event of a massive release into nearby streams. In addition, FGMI's operation and closure plans do not appear to contain a catastrophic spill response plan setting out specific plans for containment and clean-up in the event of a spill due to natural disasters such as an earthquake or a large rain event. A rain event which occurred in the area in 1967, for instance, would likely have caused water to escape the tailings impoundment. A response plan to these extreme events must be a part of the operation plans.

2. Cyanide and other toxic chemical releases pose severe threats to water quality, fish populations and other aquatic life.

Cyanide is acutely toxic. Fish and other aquatic life are killed by cyanide concentrations in the range of one part per billion.² A teaspoon of 2% cyanide solution can kill a full grown human.³ Cyanide spills and leaks at mines throughout the world have devastated ecosystems and effectively killed off entire sections of streams and rivers. The failure of a tailings impoundment dam at the Baia Mare Gold Mine in Romania released over 75 tons of cyanide into the Danube River system, contaminating over 1,200 miles of river.⁴ The spill killed millions of fish and shut down municipal water supplies throughout Hungary and Yugoslavia.⁵ The spill destroyed commercial fisheries, and eliminated markets for years due to lingering perceptions of contamination even after the initial impacts had diminished.

² MINERAL POLICY CENTER, MPC Fact Sheet: Cyanide *available at* <http://www.earthworksaction.org/pubs/CyanideFactSheet.pdf>.

³ *Id.*

⁴ Marc Bacsujlaky, *Examples of Modern Mines that Damaged Rivers and Fisheries* (October 2004) *available at* www.bristolbayalliance.com/mines_and_fish.htm.

⁵ Guy Gugliotta, *A Gold Mine's Toxic Bullet*, THE WASHINGTON POST A1 (Feb. 15, 2000).

As noted in the permit application, Fish Creek currently supports a successfully spawning grayling population. Fish Creek water drains into the little Chena River, which drains into the Chena River. The Chena River supports significant populations of Chinook (roughly 5% of the Yukon stocks) and chum salmon. The Chena flows into the Tanana River, and that into the Yukon River, both of which support even larger populations of salmon. Fish in each of these tributaries provide important subsistence resources for people of the region, and play an important cultural role for Native Alaskans. The salmon populations on the Tanana River also support a commercial fishery which provides one of the only means of income for rural villagers, and the Yukon River populations support commercial, subsistence and sport fisheries in the U.S. and Canada. If they have not yet been completed, baseline studies should be done for all of these tributaries to Fish Creek and downstream receiving waters so as to be able to assess on-going impacts on fish health, and damage in the event of a spill.

A spill at FGMI's proposed heap leaching facility could threaten all of these populations as it traveled down the river system. Damage to these fish populations and the ecosystems on which they depend would have devastating effects on the people who depend on them for food for themselves and the sled dogs which are vital to the subsistence way of life. The impacts from a spill could be exacerbated by the coldwater temperatures in these streams: while cyanide generally breaks down relatively quickly, in cold water the process does not take place.⁶ This is what made the spill at Baia Mare so devastating as cyanide spread throughout the river system before breaking down into less harmful (although not benign) compounds.

3. The reasonably foreseeable detriments to the public interest from FGMI's proposal far outweigh the minimal benefits, and thus the permit application should be rejected as contrary to the public interest.

As explained above, FGMI's proposal poses threats to water quality, fish and other aquatic life. The proposal also poses significant threats to vital subsistence and commercial fisheries in both the U.S. and Canada. These threats are highly detrimental to the public interest, are reasonably foreseeable, and have in fact happened at many similar mining facilities throughout the world.

At the same time, there is little actual need to extract these resources. While prices for gold, a primary product of this mine, are high, current world needs for gold could be adequately met through utilizing gold which has already been mined. Over 80% of the gold used each year goes into jewelry, which is by definition a luxury item and not a vital national need. Even so, there is enough mined gold already available in unused jewelry and bank vaults to supply the jewelry industry's needs for the next fifty years.⁷

Finally, FGMI's proposal offers little economic gain to those who will bear the burdens of impacts from the mine: the state and the people of Alaska. While the addition of a heap leach facility will extend the life of the Fort Knox mine, it will only result in twelve additional jobs.⁸

⁶ *Id.* at A18, Col. 2.

⁷ GREENKARAT, *Effecting Change through Recycled Gold*, available at <http://www.greenkarat.com/about/about.asp>.

⁸ Fairbanks Gold Mining Inc. Permit Application, POA-1992-574-S, Fish Creek 17 (May 31, 2006).

The mine will also produce little income for the state of Alaska. While Fort Knox's total revenue in 2002 was \$131.6 million, the state of Alaska received only \$214,700 from the mine in the same year.⁹

These minimal gains for the state and the people of Alaska are far from sufficient to outweigh the incredible detriments to the public interest posed by the mine. Given this imbalance, the Alaska Department of Environmental Conservation should reject this permit application as contrary to the public interest.

Thank you for your consideration of these matters.

Sincerely,

Rebecca A. Robbins
Policy Coordinator

⁹ *Annual Report for 2002*, Kinross Gold Corporation; State of Alaska, Department of Revenue, 2003.



United States Department of the Interior
 FISH AND WILDLIFE SERVICE
 Fairbanks Fish and Wildlife Field Office
 101 12th Avenue, Room 110
 Fairbanks, Alaska 99701
 July 31, 2006



U.S. Army Corps of Engineers
 Attn: Colonel Kevin J. Wilson
 District Engineer, Alaska District
 Post Office Box 6898
 Elmendorf AFB, Alaska 99506-6898

Re: POA-1992-374-S
 Fish Creek

Dear Colonel Wilson:

The U.S. Fish and Wildlife Service (Service) has reviewed the referenced Public Notice of Application for Permit by Fairbanks Gold Mining, Inc. (FGMI). The applicant proposes to construct and operate the Walter Creek valley-fill heap leach facility as a component of the Fort Knox Mine located approximately 26 miles northeast of Fairbanks, Alaska. In addition, FGMI is updating and renewing the Fort Knox Reclamation and Closure Plan, including the mine pit, the mill and attendant structures, the tailing facility, and the proposed heap leach facility.

Walter Creek Heap Leach Facility: The Walter Creek heap leach facility will be located in the Walter Creek sub-basin, a tributary to the Fish Creek drainage. The heap leach pad will cover approximately 310 acres (54.7 acres of wetlands) and is designed to hold 161 million tons of ore from the Fort Knox pit. Three additional acres (2.9 acres of wetlands) will be impacted by the placement of fill for road construction.

Construction of the heap leach facility will entail clearing all vegetation and soil material (to bedrock) from the Walter Creek drainage. The valley will then be filled with run-of-mine ore and lower grade stockpile material from the Fort Knox mine. An in-heap storage pond will be created to collect the cyanide-based leachate solution and to provide flood protection in the event of a 24-hour drain down and/or runoff from a 100 year/24 hour storm event. The in-heap pond also will eliminate any surface exposure of the process solution. Leachate solutions will be transported to and from the leach heap pad and mill in double-walled pipes.

Ore for the heap leach will be mined by the conventional truck and shovel mining method currently used at Fort Knox from the Fort Knox pit. No changes in mining methods are anticipated. Ore will be placed on the heap leach pad in 40-foot lifts while maintaining an overall slope 3H:1V. Loading ore on the heap leach pad will commence in late summer or fall 2007. Year-round loading and leaching are planned. Estimated ore load rates are 40,000 tons per day, 365 days per year. Construction of the heap leach pad will require realignment of the Fort Knox Mine access road to the perimeter of the heap leach pad.

OPTIONAL FORM 98 (7-90)

FAX TRANSMITTAL

of pages ▶ 5

To: Sharon Seim	From: Louise Smith
Dept./Agency: USAF	Phone #: 907-456-0306
Fax #:	Fax #:

Mine Closure Plan (including heap leach facility): The closure plan for the Fort Knox mine includes all components of the mine site. Restoration goals include returning the site to suitable habitat for fish and wildlife and to provide recreational opportunities. Wetland habitats will be constructed in areas of the tailings pond, along Fish Creek where previous placer mining has completely disturbed the original stream morphology, and the edges of the water supply reservoir. Other locations, such as dryer areas of the tailings facility, waste rock dumps, roads, and building and equipment sites will be covered with overburden and/or organics and restored to upland habitats.

Closure of the heap leach facility is expected to occur one to several years after the final ore has been placed in the facility. Residual leaching will occur until the recovery of gold begins to decline, at which time the addition of cyanide will be discontinued. Following the completion of rinsing, the heap will be regraded to an overall 3H:1V slope. The grading plan will include a minimum of 1-foot soil cover from stockpiled material created during the pad construction and will include erosion control methods to avoid loss of growth media. The cover material will be seeded to produce upland habitat.

Threatened and Endangered Species: There are no threatened or endangered species in the project area, thus the Service does not expect project-related activities to adversely impact listed species. This letter constitutes informal consultation under the Endangered Species Act. Preparation of a Biological Assessment or further consultation regarding this project is not necessary at this time.

Wetlands and Habitats: The Walter Creek Heap Leach facility will be located in the Walter Creek sub-basin, an undisturbed tributary to the Fish Creek drainage. The upper end of the drainage is bowl-shaped with the main drainage oriented in an east-west direction joined by two sub-drainages feeding in from the north side. Walter Creek flows year round and is fed by a number of springs and seeps. The width of the Walter Creek valley bottom ranges from 150 to 300 feet. The valley bottom contains riparian wetlands with tall and medium shrub communities composed of willow, alder, bog birch, and blueberry with a ground cover of mosses, horsetail, lichens, Labrador tea, cranberry and grasses. Black spruce-dominated wetlands cover the northern-facing slopes of the drainage; the southern-facing slopes are considered uplands with a mixture of paper birch, quaking aspen, and white spruce. Currently, Walter Creek flows into the northwest end of the Fort Knox tailings pond.

Revised Closure Plan: American North/EMCON, Inc. conducted fieldwork in 1990 and 1992 to map the jurisdictional wetlands within the Fort Knox project area (American North/EMCON 1992). In May 1994, Department of the Army Permit No. 4-920574, Fish Creek 23, was issued to FGMI and authorized the disturbance of 377 acres of wetlands and the discharge of approximately 4.5 million cubic yards of fill into approximately 103 acres of waters of the United States in conjunction with mining activities. In mitigation for the disturbance, Special Condition 9 of this permit required FGMI to reclaim the tailings material deposited behind the embankment (1,213 acres) in the following proportions: 35% wetlands, 35% ponds, 30% uplands. Additional mitigation included the restoration of approximately 46 acres of previously-disturbed acreage and 165 acres of the Water Supply Reservoir as wetlands.

Potential Impacts to Fish, Wildlife and Habitat Resources: The proposed heap leach facility will result in the permanent loss of approximately 54.7 acres of previously undisturbed wetlands and riparian habitat and 255.3 acres of upland habitat within the Walter Creek sub-drainage of Fish Creek. Although bird surveys have not been conducted in the Walter Creek drainage, similar riparian habitats with tall-shrub communities, especially willow, are known to provide essential breeding, resting, and brood rearing habitat for several species of passerines. Spindler and Kessel (1980) documented bird use in the upper Tanana River Valley, identifying 36 species of passerine birds in terrestrial habitats and documenting the importance of riparian (especially tall-shrub) habitats. Dames and Moore (1991) conducted surveys for songbirds within the Fort Knox project area, recording 24 species of passerines and also identifying riparian tall-shrub communities as important passerine habitat. It is assumed the loss of riparian habitat within the Walter Creek drainage will have localized impacts on passerines, displacing birds into other riparian habitats in the general area. Behavior of this type, however, is not easily documented.

Revised Closure Plan: As mentioned earlier, the original permit for the Fort Knox Mine included Special Condition 9 which required a mixture of aquatic sites be constructed within the tailings bench in specific proportions and acreages. FGMI is proposing to remove the specific acreage requirements identified under Condition 9 and instead adopt a more flexible approach to restoration via a Wetlands Functional Analysis conducted at the Fort Knox Mine in 2004 (Buell and Moody 2004). The Wetlands Functional Analysis does not account for the proposed heap leach facility and will have to be adjusted if the proposed facility is constructed. To date, FGMI has developed 204.8 acres of wetlands, primarily in the form of ponds created in old placer mining areas along the south side of Fish Creek above the water supply reservoir and wetlands associated with the water reservoir itself. This is approximately 20% of the wetland and pond habitat required to be created for mitigation under current permit Condition 9. It is unclear how application of the new Wetland Functional Analysis will alter the final acreages of required wetland restoration, and therefore, it is difficult to assess the ultimate impact of the revised Closure Plan on fish and wildlife habitats. Without a specific commitment to acreage, the adoption of FGMI's revised Closure Plan could result in an overall reduction in restored wetland habitat.

Recommendations: The Service commends FGMI for providing a thorough explanation of the construction and operation of the proposed heap leach facility. We understand that the placement of the proposed facility in the Walter Creek drainage at the head of the tailings pond allows for the construction of a natural gravity-feed structure and provides for a measure of safety should the facility experience a catastrophic failure. However, considering that the Walter Creek basin currently is in a relatively undeveloped state and contains valuable riparian habitat, the Service recommends FGMI investigate alternate locations within the mine footprint (previously-disturbed) in which to place the heap leach facility. We recognize that such a facility may require additional construction in the form of blasting and hauling of suitable rock for the creation of a gravity-feed system. However, considering the proposed Walter Creek location will need to be stripped of vegetation and mined to bedrock before construction can begin, there may be little additional construction with the creation of a heap leach facility within the confines of the mine.

If a suitable alternate location for the heap leach facility cannot be found, the Service recommends that all organic material removed from the Walter Creek drainage be separated

from mineral overburden and be stored for use in reclamation. The organic and mineral overburden stockpiles should be sloped and contoured to avoid erosion. In addition, clearing of the Walter Creek site should be conducted prior to May 1 or after July 15 to avoid impacts to breeding migratory birds. Finally, the Service recommends that the closure plan for the heap leach facility (no matter where it is located) include a final capping of the ore rock with the same synthetic material used as a base liner prior to the placement of organic overburden and revegetation. This would prevent continued leaching of the material into a reclaimed tailings pond long after the site has been closed.

The revised reclamation plan provided by FGMI for the Fort Knox Mine is not specific in regards to the additional acreages needed for mitigation for the development of the mine. In addition, it is not clear what, if any, restoration will be required to mitigate the loss of riparian habitats in the Walter Creek drainage. The Service recommends that the Wetland Functional Analysis developed for the Fort Knox site be linked to acreage estimates and locations of wetlands and uplands to be created for mitigation. The Corps has outlined proposed wetland types to be created in a variety of reclaimed areas of the mine in the current Public Notice. Attaching acreage estimates to these reclamation areas would help to clarify the Wetland Functional Analysis. In addition, the final reclamation plans should include on-site mitigation for the loss of riparian habitats in Walter Creek.

Conclusion: The Service has no objection to permit issuance provided the following conditions are included in the permit:

1. FGMI shall analyze alternate locations for the construction of a heap leach facility within the existing footprint of the Fort Knox mine.
2. Upon closure of the heap leach facility, the ore rock shall be capped with a synthetic liner prior to placement of organic overburden and subsequent revegetation to prevent continued leaching.
3. All organic materials from excavation areas shall be segregated and stockpiled for use during reclamation.
4. Stockpiles of overburden and organic material shall be stabilized to prevent erosion.
5. No fill or construction materials shall be stockpiled on adjacent wetlands or outside the project boundary.
6. If the heap leach facility is located in the Walter Creek drainage, the reclamation plan shall include mitigation for the loss of riparian habitat.
7. The reclamation plan shall include acreage estimates of the wetland types and their proposed locations to be created for mitigation under the Wetland Functional Analysis.

These comments are submitted in accordance with provisions of the Endangered Species Act of 1973 (87 Stat. 844) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended: 16 U.S.C. 661 et seq.) and constitute the report of the Department of the Interior. These comments are also for use in your determination of 404 (b)(1) guidelines compliance (40 CFR 230), and in

your public interest review (33 CFR 320.4) relating to protection of fish and wildlife resources.

We appreciate this opportunity for comment. Please contact Louise Smith at 907-456-0306 or louise_smith@fws.gov should you have any questions concerning these comments.

Sincerely,



Larry Bright
Branch Chief, Project Planning

*larry-bright@
fws.gov*

cc: Mr. Delbert Parr, Environmental Manager, FGMI
Robert McLean, ADNR-OHMP, Fairbanks
Sharon Seim, ACOE, Fairbanks

Literature Cited:

American North/EMCON. 1992. Fort Knox project jurisdictional wetland survey November 1992. American North/EMCON, Inc., Anchorage, AK.

Buell, J. W. and Moody, C.A. 2005. Re-assessment of functions and values for wetlands and aquatic features associated with the Fort Knox Mine, Fairbanks, Alaska as of July 2004. Buell & associates, Inc. Portland, OR.

Dames and Moore. 1991. Fort Knox project, fish and terrestrial wildlife reconnaissance surveys. Anchorage, AK.

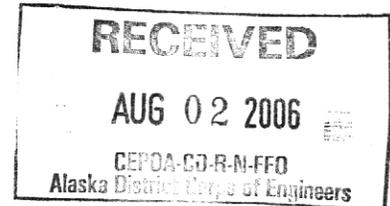
Spindler, M. A. and Kessel, B. 1980. Avian populations and habitat use in interior Alaska taiga. Syesis. Vol. 13.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
 222 West 7th Avenue, Room 537, Box 19
 Anchorage, Alaska 99513-7588

Reply To
 Attn. Of: AOO/A

August 1, 2006



Colonel Kevin J. Wilson
 Alaska District Engineer
 U.S. Army Corps of Engineers
 Post Office Box 898
 Anchorage, AK 99506-0898

Re: POA-1992-574-S Fish Creek
 Applicant: Alaska Gold

Dear Colonel Wilson:

This letter responds to your June 3, 2006, Public Notice of a proposal by Fairbanks Gold Mining, Inc. to construct, operate and close a heap leach facility, at Fort Knox mine near Fairbanks, Alaska.

The U.S. Environmental Protection Agency (EPA) appreciates the information provided to date by the applicant and their consultants. However, for the reasons discussed herein—and in accordance with paragraphs 230.10 and 230.12(a)(3)(iv) of the Clean Water Act's Section 404(b)(1) Guidelines—EPA believes that there is insufficient information to support approval of the this project as proposed in your public notice, at this time, and recommends that you not do so until the information is provided and analyzed. Specifically, information and data on the hydrology of the project (including ice effects and effects on neighboring private wells), procedures for catastrophic events, disaster response plans and cumulative effects analysis to ensure compliance with Clean Water Act Section 404(b)(1) Guidelines are lacking. Also, the proposed project does not appear to be the least damaging practicable alternative, as there appears to be previously disturbed or upland habitat alternatives that could accommodate the heap leach facility.

A project of this magnitude should have had a pre-application meeting if not a post-application meeting under our Local Procedures where a lot of this information could have been provided and analyzed in advance of the Public Notice. EPA appreciates the efforts of the Project Manager and the

applicant to provide a site visit which was very informative, but an agency meeting upon receipt of an application would have helped facilitate the process.

Based on the above discussion, it appears that there is insufficient information to warrant a finding of compliance with the 404(b)(1) Guidelines. Consequently, it is premature for EPA to offer additional specific input on measures to minimize and offset the unavoidable adverse impacts of a project that would be in compliance with the Guidelines. When your office receives adequate information to find a project in compliance with the Guidelines, please provide that information to us and EPA will provide additional comments or measures that can be taken to offset unavoidable adverse impacts. We believe that permitting a project of this size and potential impacts could be considered to constitute a major federal action and suggest that a thorough Environmental Assessment with a full alternatives analysis might be the most appropriate tool to assess the direct and cumulative impacts of a project of this magnitude. We look forward to working with you as the process continues especially in the development of mitigation and monitoring for this project. If you have any questions, feel free to contact me at 271-1480.

Sincerely,

Deborah Blank

cc: Kevin Morgan, Corps, Anchorage
NMFS, Anchorage, Anchorage
USFWS, Anchorage, Anchorage
ADGC, Anchorage, Anchorage
ADEC, Anchorage, Anchorage
ADNR, Anchorage, Anchorage
ADFG, Anchorage, Anchorage