

The LOGBOOK of CSP²

The CENTER for SCIENCE in PUBLIC PARTICIPATION

"Technical Support for Grassroots Public Interest Groups"

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ALASKA

News from the North

The gold rush is on in Fairbanks. Alaska is experiencing the biggest mining boom in its modern history, and gold in the northern part of the state is leading the boom. The good news is that the two largest gold projects, the Fort Knox Mine and the Pogo Project, have experienced few environmental problems and their staffs are working diligently with the regulatory agencies and the public to improve environmental performance

Fort Knox

The Fort Knox Mine, owned and operated by Kinross Gold, has just undergone a 5-year Environmental Audit. This audit is the first to be required by regulatory agencies for an operating mine in Alaska. It was conducted by an third party contractor, and included not only an audit of the environmental compliance history and procedures of the mine operator, but also looked at how well the agencies were performing their regulatory obligations.

In general it was a very good report. Issues uncovered by the audit included problems with water balance predictions, early signs of unpredicted seepage from the tailings pond under the dam, and bonding for water treatment that is probably not adequate. Audit recommendations will hopefully speed further definition and resolution to these issues.

The third party environmental audit, performed at least once every five years, looks like it could be an excellent tool for monitoring environmental performance for both mine operators and regulators. CSP² is encouraging Alaska regulatory agencies to use this tool at all other large mines in Alaska.

Pogo Project

The Pogo Project is an underground gold prospect near Delta Junction, Alaska, 100 miles southeast of Fairbanks. The project is a recent discovery found through grassroots exploration in an area with promising geology but very little prior mining history. The project is jointly owned by

Sumitomo Metal Mining and the Teck Corporation, who will run the operation.

The property is currently in an advanced exploration stage. Since this is an underground prospect, this means driving an adit (tunnel) into the mountain to test the competency of the rock for underground mining, and to provide access to the



The Fort Knox mill (lower left) and open pit mine (upper right) near Fairbanks, Alaska

orebody for closely spaced drilling to prove up ore reserves.

The project is located next to the Goodpaster River, a salmon spawning stream. Water quality is therefore a major issue. Small changes to water quality could affect salmon, and resident, fish spawning. Access to the site is also a potential major issue. There is no road into the project, and there are a cabin owners along the river, and native landowners, who do not want to see road access into this area. The mine has used an airstrip and a winter ice road to move equipment and supplies into the site.

Teck has worked diligently to identify the environmental issues it will face in developing the mine by actively working with local environmental groups as well as with regulatory agencies. They have promised to evaluate air-only access for the mine, and to try to locate the mine facilities as far from the Goodpaster as possible. CSP² will continue to work on these issues in support of the Northern Alaska Environmental Center in Fairbanks.

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NEVADA

Mine Dewatering in Northern Nevada

by Tom Myers

The Carlin Trend of northeast Nevada has three of the largest gold mines in North America, producing over four million ounces of gold each year. The two open pits extend over 1000 feet below the water table. Massive pumping systems have dewatered more than 400 square miles around the Tuscarora Mountains by removing over one million acre-feet of water.

As deep as the mines are, the current dewatering and thousand-foot groundwater drawdown are having very little noticeable effect on surface water sources. There are two reasons for this. First, the mines discharge portions of the dewatered water to surface water. Many consider this additional water an ecological benefit. Any decrease in river flow caused by dewatering is more than made up by the discharge of dewatering water. Second, most dewatering occurs in deep aquifers that do not directly feed the rivers and streams. Whether dewatering the bedrock will propagate through the surface aquifers is a subject of much uncertainty, and debate between the industry and environmentalists. The stakes are high because minor drawdowns in the surface aquifers could cause large flow losses in the rivers and streams.

The impacts of dewatering will be felt more in the future, when the mines cease operations and the

pit lakes begin to fill. Drawdown cones will continue to expand and more streams and rivers will be affected.

There are three ongoing environmental analyses in the area. First, Barrick Goldstrike is completing a supplemental EIS to assess the impacts of its dewatering operation at the Betze-Post Mine because the actual rates, 70,000 gallons per minute, are much higher than predicted (12,000 gallons per minute). Second, Newmont proposes an expansion at its Gold Quarry Mine which will extend operations and dewatering for another decade. Third, these companies, in a joint venture, propose a 2200 foot deep underground mine called Leeville. Dewatering rates will exceed 40,000 gallons per minute for more than ten years. These decision documents offer the environmental community a chance to influence mining operations and protect the environment into the future – possibly the last chance because of the length of the operating plans.

Because two of the mines are currently operating and are in a gold bearing trend that has produced gold for decades, it is very unlikely that these projects can be stopped for environmental reasons. The no action alternative in these projects is a severely mined mountain range. Mitigation must include strategies to minimize the damage from the



Gold Quarry open-pit gold mine near Carlin, Nevada

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existing deficits in the basin.

CSP² is involved in negotiations with the BLM and two mining companies on behalf of the environmental community in Nevada to determine the best mitigation schemes. Bonds are usually determined based on expected impacts, but all predictions are very uncertain.

One of the roles for CSP² in this process is to assess the modelling that is being used by the project proponents and the agencies to insure that conservative estimates are being used as assumptions in the models. The assumptions used in the models can significantly affect the end results. Sensitivity analysis, i.e. the response of the model to small changes in a particular variable, and assessing the boundary conditions, i.e. the physical limits of the model, and the assumptions of conditions at these boundaries, is also important.

Another major issue is how to determine the appropriate bonding or mitigation if there is a chance - no matter how small - of an entire river system going dry during the late summer. It is reasonable to bond for impacts that may cost hundreds of millions of dollars even if the probability of that damage occurring is low.

Whether land management agencies have a responsibility to bond for an impact that has a low probability of occurrence - but a high cost if it occurs - and establishing an appropriate amount for such a bond is a major policy issue being considered in this work. The chosen methodology may set precedence for large-scale mining elsewhere.



Underground drilling equipment in the Meikle Mine, one of America's richest gold mines, near Carlin, Nevada.

From the Executive Director

As many of you may know, I lived in Alaska for five years and worked on the environmental impacts of mining in that state with the Sierra Club Legal Defense Fund in Juneau.



Dave Chambers is the Executive Director of CSP²

After moving to Bozeman and starting the Center for Science, one of 'casualties' of that move was continuing with the work I had been doing in Alaska. However, financial support from the True North Foundation allowed the Center to resume its support to Alaska groups on mining issues around the state for the past year and a half.

One of the things that quickly became apparent after resuming the Alaska work was that it was not possible for me to commit time to many water-related issues that are not tied directly to mines. These include proposed modifications to the State's water quality standards, and issues surrounding discharges from public water treatment plants, fish processing facilities, log transfer facilities and pulp mills, and many other issues.

As a result, the Center for Science has entered into a working agreement with the group Alaska Community Action on Toxics, the Alaska Conservation Alliance, and other Alaska environmental groups to provide technical analysis for a wide range of water, and air, issues. This technical analysis would be provided by a Center representative living in Alaska.

In early May, Amy Crook, who has decided to leave the Alaska Department of Conservation (ADEC), will begin to work with the Center in support of these issues. Amy has been involved with mining and pulp mill permits and cleanup projects, and with the Exxon Valdez oil spill, while with ADEC. Not only does she bring a wealth of experience on water issues in Alaska, but she also has an excellent reputation in being able to work objectively with all parties - environmentalists, industry, and government - on these controversial issues.

I will continue to provide technical analysis and support on mining issues in Alaska. Amy will work will do on a much broader range of issues, and in addition will be able to provide the continuity on mining issues that I cannot because of my location.

More on Amy, and her work, in the next issue.

Sincerely;

CSP²

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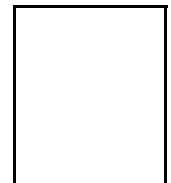
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- You can help us in our work to provide local public interest organizations with technical analysis and policy support. CSP² is the only organization focusing on providing technical support to local groups on local issues. Our focus is on natural resource issues, water quality and mining in particular.
- We realize that there are a lot of good causes, and that everyone is asking for your support.
- A donation of \$25, or more, would help our efforts in furthering rational debate on natural resource issues.

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