

Future Community Involvement

The BLM will continue to offer a variety of ways that tribes, city governments, village corporations, and interested community members may participate in the ongoing Red Devil Mine investigation.

The BLM will contact tribes, cities, and village corporations to schedule tribal consultations, community meetings, and/or regional workshops for review and comment on the draft work plan and to discuss the fish and aquatic insect study.

We welcome your suggestions about other ways the BLM can provide information helpful to your community during the Red Devil Mine investigation.

Jim Fincher, BLM Anchorage Field Manager
(800) 478-1263

Mike McCrum, Red Devil Mine Project Manager
(907) 271-4426

<http://www.blm.gov/ak/st/en/fo/ado/afo>
akreddevil@blm.gov

Project Timeline

Tribal Consultations and Community Meetings
April – June 2010

**ARRA Projects Field Work and
Fish Tissue Sampling**
June – September 2010

Remedial Investigation Phase I Field Sampling
September 2010

Remedial Investigation Draft Work Plan
Due late February 2011

**Public Review of Draft Work Plan
Tribal Consultations & Community Meetings**
March 2011

Remediation Investigation Final Work Plan
April 2011

Issue Fish Contaminant Report
June 2011

Remedial Investigation Phase II Field Sampling
Summer 2011

**Develop Feasibility Study and
Remedial Actions and Alternatives**
Late 2011 – Early 2012



This newsletter provides updates on the environmental projects the Bureau of Land Management (BLM) is conducting at or near the Red Devil Mine, an abandoned cinnabar mine and mercury production facility on the Kuskokwim River. The following summary describes the work performed at the site during 2010, and the actions and activities planned for 2011.

Red Devil Mine Remedial Investigation

In late 2009, the BLM awarded a contract to begin an environmental investigation of the Red Devil Mine site. The investigation uses a process defined under the Comprehensive Environmental Response, Compensation, and Liability Act, known as CERCLA. The investigation, called a Remedial Investigation, includes a Feasibility Study of possible cleanup methods.

The Remedial Investigation and Feasibility Study results will improve our understanding of the physical setting and potential impacts of mine tailings (the leftover material after mercury was removed) on human health and the environment. Samples will be collected from the soil, sediment, surface water, and groundwater, and analyzed for metals such as mercury, arsenic, and antimony. Information will also be collected to help us understand how the groundwater flows, how much water moves through Red Devil Creek, and the extent of tailings at the mine site. This information will be used to identify whether metals from the tailings are migrating into the groundwater and surface water, and ultimately into the fish and animals that inhabit the area around the mine site.

The BLM's contractor, Ecology and Environment, Inc., is developing a work plan for the Remedial Investigation. The BLM is coordinating the work plan with the Alaska Department of Environmental Conservation (ADEC) and the Environmental Protection Agency (EPA). The draft work plan is expected to be available for public review and comment in February 2011.



Taking advantage of the 2010 field season, the BLM's contractor spent two weeks in September at the Red Devil Mine collecting surface soil, surface water, and creek and river sediment samples. The results of this year's sampling will be used to determine the concentrations of metals where the samples were collected, estimate the extent of the tailings at the mine site, and help plan for the 2011 sampling next summer. The 2010 results will be evaluated along with results from 2011 sampling to confirm whether metals are migrating from the tailings into Red Devil Creek and the Kuskokwim River.

Contract workers collect groundwater samples at the Red Devil Mine site during the summer of 2010.



Bureau of Land Management
Anchorage Field Office
4700 BLM Road
Anchorage, AK 99507

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Fish and Aquatic Insect Study

The BLM is studying the concentrations of metals in fish and aquatic insects along the Kuskokwim River and smaller tributaries upstream and downstream of the Red Devil Mine. The study covers non-salmon species that make up a large portion of the diet of subsistence users in the area.

The study consists of:

- Sampling fish in the Kuskokwim River for concentrations of metals.
- Sampling fish and aquatic insects in eight small tributaries, including Red Devil Creek, that flow into the Kuskokwim and analyzing them for concentrations of metals (aquatic insects make excellent environmental monitors of trace metal contamination).
- Sampling surface water and sediment quality for metals in the Kuskokwim River and the eight tributaries.

During June-July 2010 and September-October 2010, the Alaska Department of Fish and Game collected fish tissue samples for the BLM from adult northern pike, sheefish, burbot, Dolly Varden, and arctic grayling in the lower stretches of the George and Holitna rivers, in addition to 73 miles of the Kuskokwim River from Stony River to Crooked Creek.

BLM fisheries staff also collected aquatic insects and juvenile fish, including Dolly Varden, arctic grayling, long-nosed sucker, and slimy sculpin, from the eight small streams that flow into the Kuskokwim River. The farthest downstream tributary sampled as part of this study was an unnamed stream just below the George River. The most upstream tributary sampled was Vreeland Creek, which enters the Kuskokwim River just below Sleetmute.



Workers collect aquatic insect samples at Red Devil Creek in 2010.

U.S. Geological Survey workers helped the BLM with the study by collecting water and sediment samples from each tributary. They also collected water and sediment samples from the Kuskokwim River at Liskey's Crossing (upstream of Sleetmute where the Kuskokwim joins the Holitna River) and at Crooked Creek. The BLM will evaluate these samples in conjunction with the analysis of the fish tissue and aquatic insects to get a clearer understanding of concentrations of metals in the entire area and if they are affecting the fish.

Results of the study will be available in summer 2011. The report is expected to be an important topic of discussion during future tribal consultations and community meetings.

Fish and Game has proposed, in coordination with local communities, to collect additional burbot samples from the Kuskokwim River after freeze-up to increase the sample size for this species. The BLM supports this additional sampling and is working to secure funding. In 2011, pending funding availability, the BLM is proposing a fish tracking project with Fish and Game focusing on Northern pike and burbot and their seasonal movements in the lower Kuskokwim River. The BLM intends to continue collecting fish and insect samples in the lower Kuskokwim River and into the Holitna basin.

The BLM is interested in using local people, especially youth interested in fisheries careers, to help with future fish sampling.

American Recovery and Reinvestment Act (ARRA) Projects

In 2010, the BLM used ARRA funds to treat petroleum-contaminated soil and investigate residual petroleum at one of the former fuel tank sites at the Red Devil Mine.

Remediation of petroleum-contaminated soil: In 2005 and 2006, the BLM removed petroleum-contaminated soil near the former above-ground fuel tanks. Workers placed the contaminated soil in containment cells to await remediation. In 2010 another BLM contractor, Marsh Creek LLC, treated the petroleum-contaminated soil at the site by setting up a 1.5-acre landspread remediation cell. This cell allows natural biological action to remove petroleum hydrocarbons from the soil. The contractor used methods suggested by the Sleetmute Traditional Council to reduce the risk of wind erosion of the contaminated soil, such as hydroseeding with mulch and grass seed. Sampling results so far show the

petroleum levels in the soil at the landspread are decreasing. Monitoring of the landspread will continue until the petroleum concentrations in the soil reach the ADEC-approved cleanup levels.

Marsh Creek workers also investigated the site of a former fuel tank where residual petroleum contamination remained after the 2006 removal action. They drilled numerous soil borings and took groundwater samples to find out the extent of the remaining fuel contamination. These samples are undergoing analysis and results should be available in January 2011.



Temporary bridge and access road: The Marsh Creek workers built a temporary bridge over Red Devil Creek and roughly a quarter mile of unimproved access road during the 2010 field season. The workers needed the bridge and road to allow heavy equipment to cross the creek without disturbing the creek bed. The bridge will remain until all the cleanup actions are complete and will either be dismantled at that time or left in place at the request of the future landowner.



Powder house: A mining explosives storage magazine (powder house) was discovered during fieldwork at the site in July. Contracted ordnance

technicians investigated the partially collapsed structure for explosives and residues. The powder house did not contain explosives, so it was dismantled and burned.

RIGHT: The BLM consults with the Village of Red Devil and community members on April 30, 2010.

Tribal Consultation and Community Involvement

Early in 2010, the BLM met with tribes, city governments, village corporations, and interested residents in the middle and upper Kuskokwim River areas to discuss the projects at Red Devil Mine. From April through June, the BLM held tribal consultations and community meetings in Stony River, Red Devil, Akiak, Akiachak, Sleetmute, Lime Village, Lower Kalskag, and Kwethluk. A consultation with the Native Village of Georgetown was held in Anchorage. Two other consultations (in Crooked Creek and Tuluksak) were canceled due to weather and subsistence activities. With the permission of the tribes, most consultations were joint meetings with federally recognized tribes, city governments, village corporations, and interested community members.

The BLM also met with The Kuskokwim Corporation and Calista Corporation in April.

The input we received during tribal consultations and community meetings was valuable in helping the BLM understand the concerns of residents in the area. Common themes expressed by participants include:

- Concern about the potential effects of methyl mercury on subsistence resources (fish, caribou, moose, and berries).
- General concerns for human health and the effects of methyl mercury.
- Interest in local hire opportunities during the projects.

While the level of interest and concern about the projects varied from village to village, all participants expressed a strong desire to protect Kuskokwim River fisheries as a critical subsistence resource in their communities.

