



RED DEVIL MINE

Community Involvement Activities

March/April 2011

The BLM held tribal consultations and community meetings in nine villages along the middle and lower Kuskokwim River in the spring of 2010 to inform residents of the Red Devil Mine Remedial Investigation, seek comments and identify local concerns, and learn more about subsistence activities that occur near the site.

The BLM held another round of community meetings in March and April of 2011 to:

- ensure continued transparency of the Red Devil Mine investigation process;
- explain the Draft Work Plan for the Remedial Investigation and invite comments on the plan and any potential Early Action at the site;
- summarize the fish tissue and aquatic insects study the BLM is conducting to measure the levels of methylmercury in the aquatic food web of the middle Kuskokwim River; and
- invite local and/or traditional knowledge from participants about the site.

Spring 2011 meetings were held in the following communities that accepted the BLM's invitation to meet. (The same invitation was extended to all communities along the middle and lower Kuskokwim River from Bethel to Stony River.)

Date	Community
March 23, 2011	Akiak
March 24, 2011	Bethel (also included representatives from Napaimute, Georgetown and Marshall)
March 25, 2011	Kwethluk
March 30, 2011	Kalskag (joint meeting of Upper and Lower)
April 1, 2011	Akiachak
April 5, 2011	Red Devil
April 6, 2011	Anchorage (regional workshop with representatives from Aniak, Chuathbaluk, Crooked Creek, Georgetown and Lime Village)
April 28, 2011	Sleetmute

Attached are summaries from each meeting in chronological order.

RED DEVIL MINE COMMUNITY MEETING

Akiak, AK

Date/Time: March 23, 2011, 1:25 p.m.

Location: Akiak Community Center

BLM Reps: Jim Fincher, Mike McCrum, Matt Varner, Larry Beck and Teresa McPherson

Agency Reps: Matt Wilkening (EPA), Anne Marie Palmieri (ADEC) and Joe Sarcone (CDC)

Attendees: Twenty-four Akiak participants, including officers of Akiak Native Community, the City of Akiak and Kokarmuit Corporation (sign-in sheet attached)

Ivan M. Ivan, Sr., President of Akiak Native Community, called the meeting to order at 1:25 p.m. Ivan conducted role call and asked IRA Council member Moses Owen to offer a prayer. Ivan then turned the meeting over to Jim Fincher for the Red Devil Mine presentation and discussion.

Jim Fincher asked agency representatives and BLM staff to introduce themselves. He thanked the community for agreeing to meet with BLM about the Red Devil Mine investigation. Fincher explained the objectives of the meeting were to ensure transparency of the investigation process and to invite local and/or traditional knowledge from participants about the site.

Mike McCrum presented an overview of the Draft Work Plan for the Red Devil Mine Remedial Investigation and addressed questions from participants.

- Ivan asked if BLM would seek a second opinion regarding the investigation. McCrum said the Alaska Department of Environmental Conservation, the Environmental Protection Agency, and the Agency for Toxic Substances and Disease Register (Centers for Disease Control) provide regulatory oversight of the project, including review of all work plans.
- Ivan asked what form metals such as arsenic and mercury take at the site. McCrum said metals may be present in the tailings, in sand and silt, in the streambed, and in the groundwater at the site.
- Ivan said he had heard of mining tunnels under the river. McCrum said there was no documentation of such a tunnel, but BLM would welcome any local knowledge of tunnels or other site features that BLM may be unaware of.
- One participant asked if BLM had collected samples during breakup. McCrum said no, but agreed snowmelt and ice gouging might affect how metals migrate.
- A participant asked what effects on human health the study would address. McCrum said the fish studies are where human health effects are being considered.

- A participant noted high cancer rates in the region and wondered if metals contributed to this increase. McCrum said Joe Sarcone would address health effects during his portion of the presentation.
- IRA Council member Mike Williams said he had heard about the Red Devil Mine his entire life and asked why it was taking so long to clean up the site. Residents and elders have talked about contamination concerns from the mine for a long time and advised residents against eating the livers of fish. Traditional knowledge about the site is limited now that many elders with that knowledge have passed away. He asked why mining wasn't better regulated to avoid contaminating fish and watersheds. He said he was glad agencies are addressing the issues, but hoped they could speed up the process.
- A participant asked if there was any way to filter the contaminants so keep them from migrating. McCrum said one potential early action being considered was to move the tailings away from the creek to limit migration. Wilkening noted that EPA would look at what technologies are out there to address metals migration, and agencies would work together to determine the best option for the Red Devil Mine site.
- Ivan mentioned the public safety advisory BLM issued a few months prior, and encouraged agencies to get more information about health and safety out to affected communities.
- A participant asked if agencies are looking at ways to prevent future sites like Red Devil Mine. Fincher said there are regulations in place today that ensure safer practices and better regulatory oversight.
- IRA Council member Roy Williams asked if politics sometimes override sound science. He said he was concerned about eating potentially contaminated fish throughout his life, and was deeply concerned about metals migrating downriver. He requested that agencies provide as much information as possible via the Web, so residents in rural areas would have access to this information.

Joe Sarcone of the Agency for Toxic Substances and Disease Register (U.S. Centers for Disease Control) spoke briefly about the U.S. Fish and Wildlife study that recommended women and children limit their pike consumption due to the neurological effects of mercury to infants and children. He also summarized the health effects of mercury, arsenic and antimony. Sarcone explained that his agency's role would be to help interpret the data from the Red Devil Mine investigation in terms of human health and safety.

Matt Varner, BLM fisheries biologist, gave a short presentation about the fish tissue and aquatic insects study BLM is conducting on the middle Kuskokwim River.

- One participant asked if boiling lush affects the mercury content. Varner said BLM asked the lab to analyze boiled lush samples to address this question. The participant also asked if cooking lush indoors poses a risk. Varner said fish normally isn't cooked to a high enough temperature to pose this risk.
- Fincher said this was one of many questions BLM would be able to answer once the fish study results are available, and that BLM would provide more information at future meetings.

Jim Fincher thanked the community for allowing BLM to visit and talk with them about the Red Devil Mine investigation. He said BLM appreciated the opportunity to work together and share ideas and concerns, and that BLM would contact community leaders to schedule a future meeting when the data becomes available.

President Ivan said he appreciated BLM's desire for transparency and willingness to come to Akiak and meet with community members. He asked that BLM provide the council with notes from the meeting when available.

The meeting concluded at 3:45 p.m.

RED DEVIL MINE COMMUNITY MEETING

Bethel, AK

Date/Time: March 24, 2011, 6:15 p.m.

Location: Orutsararmuit Native Council Multi-purpose Building

BLM Reps: Jim Fincher, Mike McCrum, Matt Varner, Larry Beck and Teresa McPherson

Agency Reps: Matt Wilkening (EPA), Anne Marie Palmieri (ADEC), Susan Erben (ADEC) and Joe Sarcone (CDC)

Attendees: Twenty-one representatives and residents of the Bethel region, including Orutsararmuit Native Council, Association of Village Council Presidents, Yukon-Kuskokwim Health Corporation, Kuskokwim River Watershed Council, the communities of Napaimute, Georgetown and Marshall, and local media (sign-in sheet attached)

Jim Fincher welcomed participants and asked agency representatives and BLM staff to introduce themselves. Fincher explained the objectives of the meeting were to ensure transparency of the investigation process and to invite local and/or traditional knowledge from participants about the site.

Mike McCrum presented an overview of the Draft Work Plan for the Red Devil Mine Remedial Investigation and addressed questions from participants.

- One participant asked why agencies didn't complete cleanup of the site earlier, why more studies? McCrum explained that until BLM finishes the investigation, agencies won't have a complete picture of what's at the site and the best way to remediate it.
- Several participants noted that people still use the site to pick berries or other activities, and wondered why the BLM didn't close the site for safety reasons. McCrum said the site has been posted closed and gated for more than a decade, but BLM is aware that people still access the site.
- One participant said he attended the UAF Western Alaska Science Forum and heard that contaminant levels at the site exceed EPA's risk screening criteria. Wilkening confirmed the values at the site are well above the risk screening criteria of the EPA, and that getting a clearer picture of what's at the site will help EPA develop site specific criteria for cleanup.
- Participants asked what agencies would do in the meantime to protect residents both upriver and downriver. McCrum explained that agencies are discussing an early action to address the immediate risk potential of the site. But he stressed it's important that agencies exercise caution to not take the wrong course of action and potentially make things worse.

- Participants asked if BLM could contain the site with a fence or other barrier as part of an early action. McCrum said this was one of the options being considered.
- A participant asked if BLM would test private property downriver of the site. McCrum said this investigation is focused on the site itself and the creek where higher concentrations of contaminants are likely to occur.
- A participant if BLM had consulted the Japanese company that formerly owned the mine, that they would possibly be the only ones to know what had occurred at the site. McCrum said not to his knowledge, but part of this process is hearing from locals who may have historic knowledge of the mine site.
- One resident questioned EPA's statement that the site is frozen much of the year. Wilkening explained that metals migration is less likely to occur during the months the river is frozen and the site is under snow.
- Discussion followed about the use of national screening values to determine risks. Wilkening explained these standards represent a baseline that you work from; baseline values are then adjusted to consider how weather may influence these values. Exposure levels at the site exceed this baseline, and the EPA is not debating whether the site should be cleaned up but rather how, what methods to employ.
- Palmieri added that ADEC has screening values for Alaska that consider methods of exposure and different scenarios for ways the site is used. These will be analyzed in the risk assessment that will help determine appropriate cleanup actions.
- Participants asked why the site wasn't cleaned up to these levels earlier, since the contamination was discovered years ago. BLM explained that many of the physical hazards at the site had been addressed in earlier actions. As more became known from investigating the site, more action was deemed necessary.
- One participant noted the Kolmakof site was also a potential risk. Larry Beck said this was an active project BLM was working on, that mercury contaminated debris had been removed and more work was planned for the current field season.
- Participants expressed frustration at the pace of cleanups of former mining sites with contamination, and concerns about the risks the contaminants may pose to Kuskokwim River communities.
- Orutsararmuit Native Council Environmental Coordinator Rose Kalistook mentioned a closed-door session on this topic with national environmental justice officials during the Alaska Forum on the Environment. She said she expressed frustration to these officials at how long it takes to clean up mine sites like Red Devil.
- Jim Fincher explained that cleaning up sites like Red Devil is complex, that in addressing known hazards, you often find other hazards or contaminants that need further investigation and treatment. Since the BLM began work at the site in the 80s, the agency has learned a great deal about the site and taken additional actions to correct many issues. BLM dealt with the most obvious hazards in earlier years, such as open mine shafts and spilled petroleum. Once these actions were completed, BLM began to address mercury contamination issues. Fincher said he had visited the mine site many times and talked

with residents. He said work at the site was far from completed and he too was frustrated at the pace of earlier actions, but he assured residents that BLM wants to hear their concerns and work together to improve environmental conditions at the site.

- One participant said he hoped agencies and miners would look at what went wrong from sites from Red Devil Mine and work together to be sure this doesn't happen again. He cited concern about the Donlin Creek mine. BLM explained that both state and federal agencies have regulations in place today to ensure better mining practices.
- Rose Kalistook said she talked with Sleetmute Traditional Council at the Alaska Forum on the Environment and learned that BLM has conducted government-to-government consultation with the council during the Red Devil Mine project.
- One participant asked if BLM would test animals for metals as part of the Red Devil Mine study. McCrum said the study would include ecological risk assessments to assess impacts to wildlife. This assessment will be based on direct sampling and on modeling.
- Several participants encouraged BLM to use local people and resources wherever possible to assist with sampling.
- Participants asked how BLM has informed residents about the dangers of accessing the site. Fincher said BLM has posted signs at the site, sent out a public health advisory, and contacted local communities to discuss the issues at the site.
- Participants from the Kuskokwim River Watershed Council requested that BLM train local people to conduct the risk assessment. Fincher explained that BLM doesn't have the resources to provide that kind of training, that BLM hires a contractor with this experience. But BLM uses local people and resources to assist with sampling or related work where possible. Fincher suggested the Watershed Council might want to follow up their comments with a letter to the BLM.
- One participant suggested that BLM use simpler language to explain the Red Devil Mine investigation, to make community meetings more useful to local residents.

Joe Sarcone of the Agency for Toxic Substances and Disease Register (U.S. Centers for Disease Control) spoke briefly about the U.S. Fish and Wildlife study that recommended women and children limit their pike consumption due to the neurological effects of mercury to infants and children. He also summarized the health effects of mercury, arsenic and antimony. Sarcone explained that his agency's role would be to help interpret the data from the Red Devil Mine investigation in terms of human health and safety.

Participants expressed concerns that most residents' consumption of pike greatly exceeds the recommendations.

Matt Varner, BLM fisheries biologist, gave a short presentation about the fish tissue and aquatic insects study BLM is conducting on the middle Kuskokwim River.

- One participant asked if BLM used local people to help collect samples. Varner said Sleetmute in particular was helpful in collecting the size, species and desired quantities of pike and burbot.
- One participant told BLM that locally burbot are referred to as lush, and suggested BLM use that term when communicating with local residents.

- Another participant asked if BLM would sample any lakes as part of this study. Varner said this study was focused on the river and tributaries rather than lakes.

ONC President John Guinn thanked BLM for meeting with council members and residents. He said the tailings are the biggest concern for most people, and he hoped BLM would address that soon. Fincher said addressing the tailings is one of the potential early actions being considered.

Jim Fincher thanked participants for attending and said BLM would report the results of the fish tissue study as soon as it is available, and would keep communities informed as the Remedial Investigation progressed.

The meeting concluded at 3:45 p.m.

RED DEVIL MINE COMMUNITY MEETING

Kwethluk, AK

Date/Time: March 25, 2011, 1 p.m.

Location: Kwethluk City Office

BLM Reps: Jim Fincher, Mike McCrum, Matt Varner, Larry Beck and Teresa McPherson

Agency Reps: Anne Marie Palmieri (ADEC) and Joe Sarcone (CDC)

Attendees: Fourteen representatives and residents of Kwethluk, including the Organized Village of Kwethluk, City of Kwethluk, Kwethluk, Inc., and Yukon-Kuskokwim Health Corporation (sign-in sheet attached)

Mayor Max Angellan called the meeting of the Kwethluk Joint Group to order at 1:10 p.m. Angellan conducted roll call, reviewed the agenda, and called for the invocation. After reading and approval of previous meeting minutes, Angellan announced that the first order of new business was the BLM's request for a community meeting regarding the Red Devil Mine investigation. Angellan turned the meeting over to Jim Fincher.

Jim Fincher welcomed participants and asked agency representatives, BLM staff, and Kwethluk participants to introduce themselves. Fincher explained the objectives of the meeting were to ensure transparency of the investigation process and to invite local and/or traditional knowledge from participants about the site.

Mike McCrum presented an overview of the Draft Work Plan for the Red Devil Mine Remedial Investigation and addressed questions from participants.

- One participant asked if there are other sites like Red Devil Mine in the Lower 48 states. McCrum responded yes, but explained that each site is unique in terms of site characteristics and remediation methods.
- A participant asked if BLM would test salmon. McCrum explained that since salmon don't spend as much time in rivers as pike and burbot, they don't absorb metals from the site in the same concentrations.
- A participant asked what can be done about the sediment that contains metals. McCrum explained one option for an early action may be to move the tailings farther away from the creek to keep contaminated sediment from entering the creek and then the river. Asked how long this early action might take, McCrum said possibly this field season or next.
- Participants asked far downriver would water and sediment be sampled. McCrum said the study would focus on sampling the immediate area.

Joe Sarcone of the Agency for Toxic Substances and Disease Register (U.S. Centers for Disease Control) spoke briefly about the U.S. Fish and Wildlife study that recommended women and children limit their pike consumption due to the neurological effects of mercury to infants and children. He also summarized the health effects of mercury, arsenic and antimony. Sarcone explained that his agency's role would be to help interpret the data from the Red Devil Mine investigation in terms of human health and safety.

Matt Varner, BLM fisheries biologist, gave a short presentation about the fish tissue and aquatic insects study BLM is conducting on the middle Kuskokwim River.

- One participant asked what is the safest way to cook lush that may contain metals. Varner said BLM has asked the lab to analyze boiled lush to learn whether this affects the contaminant levels.
- A participant said some fish have a mushy texture and strange odor, and wondered if this was related to contaminants. Varner said methylmercury doesn't cause the fish to look or smell contaminated, but there are other diseases that can cause this.
- A participant asked if BLM would sample land animals. Varner said mercury requires water to migrate, so this study doesn't include other animal species.
- A participant said she was very, very alarmed at the high rates of cancer among rural residents, and felt mining contaminants contribute to this increase.

Jim Fincher thanked participants for allowing BLM to talk with them about the Red Devil Mine investigation. He said BLM appreciated the opportunity to work together and share ideas and concerns, and that BLM would contact community leaders to schedule a future meeting when the data becomes available.

The meeting concluded at 3:30 p.m.

RED DEVIL MINE COMMUNITY MEETING

Kalskag/Lower Kalskag, AK

Date/Time: March 30, 2011, 4 p.m.
Location: George Morgan, Sr. High School
BLM Reps: Jim Fincher, Mike McCrum, Matt Varner, Larry Beck and Teresa McPherson
Agency Reps: Susan Erben (ADEC) and Joe Sarcone (CDC)
Attendees: Ten residents of Kalskag and Lower Kalskag (sign-in sheet attached)

Jim Fincher welcomed participants and asked agency representatives, BLM staff and residents to introduce themselves. Fincher thanked the communities of Kalskag and Lower Kalskag for agreeing to meet jointly with the BLM about the Red Devil Mine investigation.

Fincher explained the objectives of the meeting were to ensure transparency of the investigation process and to invite local and/or traditional knowledge from participants about the site.

Mike McCrum presented an overview of the Draft Work Plan for the Red Devil Mine Remedial Investigation and addressed questions from participants.

- One participant asked McCrum to define “tailings.” McCrum explained this was the material that is left behind after cinnabar is extracted from ore. Groundwater flowing through the tailings and into the Kusokwim River carries contaminants, as evidenced by sampling from the previous field season.
- Another resident asked if the tunnels are still in place. McCrum said the tunnels had long since flooded when the mine’s pumps were turned off and mining ceased.
- A participant asked why the government had waited so long to address contamination issues at the site. Beck explained that the site had been the subject of a number of cleanup actions since the 80’s.
- Fincher explained that addressing a site like Red Devil Mine is like peeling back layers one at a time. First, BLM removed physical hazards and spilled fuel. Now BLM was moving forward with addressing the larger issues of contamination. He said he too was frustrated at the pace of earlier actions, but BLM is moving forward in partnership with other agencies to address issues at the site.
- One participant said she heard the site is “grossly contaminated.” McCrum said metals concentrations at the site are high. While some metals are naturally occurring at the site, the concentrations at the tailings are of particular concern. BLM and the regulating agencies are working together to consider an early action to address this issue.
- A participant asked how many mines is BLM working on. McCrum said two mining sites on the Kuskokwim River and several others in various parts of the state. Beck noted there are 20-30 cinnabar mine sites on the Kuskokwim alone.

- A resident asked for a definition of cinnabar. McCrum said cinnabar is the metal, or mineral, that mercury is made from.
- A participant asked if mercury makes people sick and whether it's safe to eat fish exposed to mercury. McCrum said Sarcone would address health effects of mercury in his portion of the meeting. The resident said she had received a text phone message warning residents to not eat lush due to health concerns, and this was alarming to residents whose diets consists heavily of lush.
- One participant asked if BLM would hire locals during the investigation. McCrum said opportunities for local hire would occur more so during the actual cleanup action rather than the investigation portion of the process.

Joe Sarcone of the Agency for Toxic Substances and Disease Register (U.S. Centers for Disease Control) spoke briefly about the U.S. Fish and Wildlife study that recommended women and children limit their pike consumption due to the neurological effects of mercury to infants and children. He also summarized the health effects of mercury, arsenic and antimony. Sarcone explained that his agency's role would be to help interpret the data from the Red Devil Mine investigation in terms of human health and safety.

Matt Varner, BLM fisheries biologist, gave a short presentation about the fish tissue and aquatic insects study BLM is conducting on the middle Kuskokwim River.

- A resident asked why BLM wasn't sampling downriver communities as well. Varner explained BLM and Fish and Game would sample more than 100 miles of river as part of this study. He said agencies have data on the lower Kuskokwim and the new data for the middle Kuskokwim will provide a complete picture of the river system. The telemetry study will provide data about fish movement in the river.
- One resident asked if BLM would test other mine sites as well. Varner said no, although he noted other studies are being conducted of the Donlin Creek area. But this is the only study that looks at bugs on up through the food chain to understand the extent of bioaccumulation in larger species such as pike.
- A participant asked if birds would be tested. Varner explained that fish would provide the best information regarding the effects of methymercury since water is the pathway of exposure of metals from the site. However, the study will consider others species of animals in terms of modeling the pathways and this will be used to assess the risk.
- One participant asked whether salmon are safer in terms of mercury. Varner said anadromous fish like salmon spend less time in rivers and are therefore exposed to methymercury for shorter periods, compared to resident fish like pike and lush.
- Another resident asked about mercury levels in sheefish. Varner said the concentrations in sheefish are not as high as pike.

Jim Fincher thanked participants for allowing BLM to talk with them about the Red Devil Mine investigation. He said BLM would contact community leaders to schedule a future meeting when the data becomes available.

The meeting concluded at 6:30 p.m.

RED DEVIL MINE COMMUNITY MEETING

Akiachak, AK

Date/Time: April 1, 2011, 2 p.m.
Location: Akiachak Native Community
BLM Reps: Jim Fincher, Mike McCrum, Matt Varner, Larry Beck and Teresa McPherson
Agency Reps: Susan Erben (ADEC) and Joe Sarcone (CDC)
Attendees: Eight residents of Akiachak, including Aliachak Native Community/IRA Council and Akiachak, Limited (sign-in sheet attached)

Jim Fincher welcomed participants and asked agency representatives, BLM staff and Akiachak participants to introduce themselves. Fincher explained the objectives of the meeting were to ensure transparency of the investigation process and to invite local and/or traditional knowledge from participants about the site.

One resident said he and others from the area have been to the site during caribou hunts. Fincher thanked the resident and said this information gives BLM a sense of how the site is used, which is important in determining the appropriate cleanup methods.

Mike McCrum presented an overview of the Draft Work Plan for the Red Devil Mine Remedial Investigation and addressed questions from participants.

- One participant asked how one can identify animals that have been exposed to mercury. McCrum said the fish studies are primarily where we see bioaccumulation in animals.
- A participant asked if BLM could do something to keep the tailings from entering the river. McCrum said this is a potential early action being considered.
- A resident asked about arsenic at the site. McCrum explained arsenic was a naturally occurring metal, but processing the ore at the site results in higher concentrations.
- One resident said he had heard from upriver sources that a first tunnel under the river failed. He said a second tunnel was created. Fincher said BLM would like to have any records or documentation residents may have of the mine workings. The resident responded that BLM would need to request this information from upriver communities.
- A participant noted diseased spruce tree stands along the river.
- Participants suggested BLM might consider moving the tailings or creating a dam or other barrier to prevent migration and/or filter the sediment.

Joe Sarcone of the Agency for Toxic Substances and Disease Register (U.S. Centers for Disease Control) spoke briefly about the U.S. Fish and Wildlife study that recommended women and children limit their pike consumption due to the neurological effects of mercury to infants and children. He also summarized the health effects of mercury, arsenic and antimony. Sarcone

explained that his agency's role would be to help interpret the data from the Red Devil Mine investigation in terms of human health and safety.

- One participant asked if agencies would look at health effects from NYAK. He noted that there had been intense mining at Tuluksak and was concerned about health impacts. He noted salmon have decreased in that area over the last few years.
- One participant asked if mercury had been found in fish. Sarcone responded that mercury is found in fish worldwide, and that Matt Varner would talk about this in his portion of the presentation.
- A participant noted that when locals process fish, if they see that something is wrong with the fish, they don't process it.

Matt Varner, BLM fisheries biologist, gave a short presentation about the fish tissue and aquatic insects study BLM is conducting on the middle Kuskokwim River.

- A resident noted that large pike are often found at Stick River.
- Residents asked if BLM used locals when collecting fish samples. Varner said BLM and Fish and Game biologist did use locals to collect fish and that locals were important in determining where samples were collected.
- One resident asked if BLM sampled Crooked Creek. Varner said Crooked Creek sampling wasn't part of this study. He said Donlin Creek hired a firm to sample Crooked Creek, and that data would be compared to this data to analyze contaminant levels.
- A participant said he was concerned about the open pit proposed at Donlin Creek, and hoped agencies would require thorough reclamation. Varner reminded participants that today's mining regulations are vastly different from the past, including the way waste rock is addressed during reclamation.
- A participant who said he had worked at Donlin Creek noted this was evident in the way sites are treated and the processes they follow at the mine.
- A resident noted there is a good influx of salmon in early May and that would be a good time to collect samples. He said the fish have good fat content at that time.
- Participants asked about use of local hires. Fincher said BLM uses local people and local equipment to help with sampling as much as possible. He assured participants that BLM wants to maximize use of local resources throughout the project to help bring economic opportunities to local communities.

Jim Fincher thanked participants for attending and said BLM appreciates and would use the input they provided during the project. He encouraged council members to read the draft work plan and offer any comments or suggestions they may have.

The meeting concluded at 3:30 p.m.

RED DEVIL MINE COMMUNITY MEETING

Red Devil, AK

Date/Time: April 5, 2011, 3 p.m.

Location: Alaska DOT Maintenance Building, Red Devil Airstrip

BLM Reps: Jim Fincher, Mike McCrum, Matt Varner, Larry Beck and Teresa McPherson

Agency Reps: Anne Marie Palmieri (ADEC) and Joe Sarcone (CDC)

Attendees: Eight residents of Red Devil, including Red Devil People and Community, Inc. (sign-in sheet attached)

Jim Fincher welcomed participants and asked agency representatives, BLM staff and residents to introduce themselves. Fincher said it was good to be back in the community of Red Devil to visit with residents about the Red Devil Mine investigation.

Fincher explained that BLM and agency partners had held community meetings in a number of villages along the Kuskokwim River during the previous weeks to update residents on the progress of the Red Devil Mine investigation and invite local knowledge about the site. He cited the example of a powder house near the site that BLM learned about from local residents the previous summer and explained that local knowledge was critical to BLM's understanding of the site.

Fincher explained the objectives of the meeting were to ensure transparency of the investigation process and to continue to invite local and/or traditional knowledge from participants about the site.

Mike McCrum presented an overview of the Draft Work Plan for the Red Devil Mine Remedial Investigation and addressed questions from participants.

- John Zeller of Red Devil People and Community, Inc. asked about the depth of soil borings taken at the site. McCrum said the borings are 30-40 feet. Zeller asked about the type of equipment needed for this work. McCrum said the contractor brings in specialized equipment for taking borings of various sizes.
- Zeller asked if Red Devil or Barometer Mine was mined first. Beck said Barometer Mine was first.

Joe Sarcone of the Agency for Toxic Substances and Disease Register (U.S. Centers for Disease Control) spoke briefly about the U.S. Fish and Wildlife study that recommended women and children limit their pike consumption due to the neurological effects of mercury to infants and children. He also summarized the health effects of mercury, arsenic and antimony. Sarcone explained that his agency's role would be to help interpret the data from the Red Devil Mine investigation in terms of human health and safety.

- Zeller asked if arsenic is used for floridation. Sarcone said no and explained that arsenic in its organic form is naturally occurring. But studies show arsenic is a known

carcinogen and is more harmful than previously thought. Zeller asked if arsenic accumulates in the body like mercury. Beck said arsenic concentrates in the body. Sarcone noted that arsenic in lower levels is more harmful than previously thought.

- Fincher noted that last year's sampling indicated high concentrations of arsenic and that prompted BLM to issue a public safety advisory in Jan. 2011 advising residents to avoid the site until more is known about the risks at the site.

Matt Varner, BLM fisheries biologist, gave a short presentation about the fish tissue and aquatic insects study BLM is conducting on the middle Kuskokwim River.

- Residents asked if lush and sheefish migrate. Varner explained that sheefish migrate to ocean water, so they're not exposed to contaminants as much as lush and pike that stay in the river year round.
- One participant mentioned a stream where cinnabar had been mined that was downriver of the lowest tributary where BLM has sampled. Varner said this was good to know since BLM was developing the sampling plan for this field season and this might be a good site to sample.
- Zeller noted that the liver is their favorite part of lush, and asked if you can see or taste mercury. Varner explained that you cannot, but he noted that mercury poses a risk primarily to infants and children, and therefore to women of childbearing age. Those are the groups that should limit their consumption; the fish consumption advisory doesn't apply to other individuals. In general, Varner said, it's probably best to eat smaller fish and avoid eating too much of the older fish with higher mercury levels.

Jim Fincher thanked participants for allowing BLM to talk with them about the Red Devil Mine investigation. He said BLM would contact community leaders to schedule a future meeting when the fish data becomes available.

The meeting concluded at 5 p.m.

RED DEVIL MINE WORKSHOP

Anchorage, AK

Date/Time: April 6, 2011, 1 p.m.
Location: BLM Anchorage Field Office

Community Representatives:	• Bruce Morgan and Leonard Morgan, Aniak Traditional Council • Jerry L. Peterson, Native Village of Chuathbaluk • Evelyn and Dennis Thomas, Crooked Creek Traditional Council • Will Hartman and Helen Traylor, Native Village of Georgetown • Farron Bobby, Lime Village Traditional Council
BLM Representatives:	• Jim Fincher • Mike McCrum • Matt Varner • Larry Beck • Teresa McPherson
Agency Representatives:	• Anne Marie Palmieri, Alaska Department of Environmental Conservation • Jennifer Roberts, Alaska Department of Environmental Conservation • Marty Brewer, Alaska Department of Environmental Conservation • Nim Ha, Alaska Division of Public Health • Cassandra Kirk, Alaska Division of Public Health • Joe Sarcone, U.S. Centers for Disease Control • Adrienne Fleek, U.S. Environmental Protection Agency • Cindi Godsey, U.S. Environmental Protection Agency • Sylvia Kawabata, U.S. Environmental Protection Agency • Mahri Lowinger, U.S. Environmental Protection Agency
Other:	• June McAtee, Calista Corporation • Vernon Chimegalrea, Donlin Creek LLC

Welcome and Introductions

BLM Anchorage Field Manager Jim Fincher welcomed participants and asked agency representatives, BLM staff and community representatives to introduce themselves. Fincher explained the workshop was the culmination of a recent series of community meetings in villages along the lower and middle Kuskokwim River. He reminded community representatives of BLM's request that they share information from the workshop with others when they return to their communities.

After housekeeping announcements, Fincher explained the objectives of the workshop were to ensure transparency of the Red Devil Mine investigation process and to continue to invite local and/or traditional knowledge from participants about the site. He explained BLM wants the workshop to be a two-way dialog and invites participants' questions and comments at any time throughout the workshop.

Red Devil Mine Remedial Investigation

BLM Red Devil Mine project manager Mike McCrum presented an overview of the Draft Work Plan for the Red Devil Mine Remedial Investigation.

McCrumb summarized the 2010 field work completed at the site and explained how BLM had incorporated input and suggestions from local communities into the work performed.

He explained the Red Devil Mine site isn't a Superfund site, but the BLM is using the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process to address issues at the site. McCrum explained the Remedial Investigation process and timeline, and said community input is an important part of the CERCLA process. He also explained the role of BLM and regulatory agencies.

McCrumb explained the provision in CERCLA for conducting an early action and said this is something BLM and regulatory agencies are considering. He said BLM would like to hear from local communities about appropriate early actions for the site.

- Dennis Thomas of Crooked Creek asked if moving contaminated materials around could cause more problems than leaving the contaminants in place. McCrum explained this was one of the options to be addressed, since the purpose of an early action is to improve public safety, not to make things worse.
- Thomas asked how antimony affects humans. McCrum said Joe Sarcone would address this question during his portion of the presentation.

Jim Fincher said BLM would appreciate hearing any additional comments from communities within 30 days so BLM could incorporate those concerns as the work plan is finalized and work begins this field season. Fincher then asked Sarcone to address the potential health effects of contaminants at the Red Devil Mine site.

Health effects of Red Devil Mine

Joe Sarcone of the Agency for Toxic Substances and Disease Register (U.S. Centers for Disease Control) spoke briefly about the U.S. Fish and Wildlife study that recommended women and children limit their pike consumption due to the neurological effects of mercury to infants and children. From 2003 through 2010, samples of human hair from 800 volunteers across the state were analyzed for mercury. Sarcone asked Nim Ha of the Division of Public Health to discuss this study.

Ha explained that while the study included only a handful of samples from Red Devil, those samples did not contain elevated levels of mercury and were, in fact, lower than samples from some parts of the state. She explained this was an ongoing study and the Division of Public Health would test hair samples from eligible women and children who wish to participate. She

further explained that most arsenic is in an organic form, which is not as harmful as inorganic arsenic. Anyone who eats fish will ingest organic arsenic.

Sarcone then summarized the health effects of mercury, arsenic and antimony, and noted that mercury and arsenic are the primary contaminants of concern at the Red Devil Mine site.

Sarcone explained that the role of public health agencies would be to help interpret the data from the Red Devil Mine investigation in terms of human health and safety to understand exposure pathways, length of exposure, and evaluate what the health effects may be.

Evelyn Thomas of Crooked Creek said when she first heard about the studies at Red Devil Mine, she was alarmed. But she said elders in the village noted that residents of Crooked Creek have been eating fish, drinking water, and picking berries for many, many years. Yet Crooked Creek residents are healthy, from elders to the very young, and they have been surrounded by mining activity for decades.

She said elders suggested that if agencies try to “fix” Red Devil Mine, they could inadvertently end up making it worse. Thomas urged BLM to think first and use caution in fixing something that didn’t appear to be broken. She noted that Crooked Creek residents use the George River for hunting, fishing and berry picking. She expressed concern for downriver communities who could be harmed if cleanup actions at Red Devil Mine resulted in increased migration of contaminants. She suggested that BLM might consider a monitoring program first and said her village has people trained in handling hazardous materials who could help with the monitoring.

Sarcone assured Thomas that a great amount of attention and detail was being given to this investigation. He said he had traveled to several villages with BLM and found BLM’s approach to be cautious.

Sarcone added that the long-term effects of contaminants are difficult to measure. He said it’s the policy of public health agencies to err on the side of caution. He assured participants that the cooperating agencies would look closely at the fish data and study exposure pathways carefully before deciding on a course of action.

Dennis Thomas noted that the U.S. Geological Survey has done monitoring along the Kuskokwim River for years and would know if contaminants were migrating to other areas.

Nim Ha added that it was the role of public health agencies to look at the data and evaluate the potential for human health effects from contaminants. She noted that acute exposure from high levels isn’t as much of a concern as low level exposure over a long period, since potential health effects may not be seen for many years. She said they would look at the data, at the exposure pathways and concentration levels, and compare that data to the databanks of other health agencies to determine recommendations.

Anne Marie Palmieri of the Alaska Department of Environmental Conservation noted that the sampling last field season found three metals of concern at the site. She said some of the contamination levels were more than 1,000 times the state’s screening levels. She noted that metals concentrations in Red Devil Creek were much higher than what the state considers safe, and this water moves from the creek into the Kuskokwim and downriver.

Evelyn Thomas noted that her experience has shown that agencies are going to do what they’re going to do. But she said her village asked her to urge BLM and other agencies to use extreme caution that “in trying to save us, you don’t do us harm.”

Palmieri assured workshop participants that the Remedial Investigation is a very logical, thoughtful step-by-step process, and that no action is one of the alternatives to be considered. She explained that BLM and regulatory agencies would consult with communities again before starting a course of action.

Evelyn Thomas said residents wondered how they could know in advance if the actions agencies take will make things worse instead of better. Dennis Thomas noted that materials from the tailings were used at the runway and other sites in Red Devil, and suggested BLM test other sites at Red Devil in addition to the mine site itself. Sarcone noted this was the kind of feedback and input BLM was seeking.

Sarcone explained that agencies don't have answers to every question at this stage of the process, but he noted that agencies are paying attention to the concerns of residents.

Jennifer Roberts of ADEC noted that the state has worked on many cleanup issues with EPA using the CERCLA Superfund process. The process includes a set of criteria that agencies use at decision points. She said short-term impacts are one of the things they look at and discuss with local communities in evaluating treatment options. She added that involving local communities in decisions for the Red Devil Mine site is one of the state's goals in this process.

Dennis Thomas asked if agencies could look at other mercury mine sites to better understand what may or may not be happening at this mine. Sarcone said each mine has specific conditions that contribute to risk. Ninety percent of the mercury mined in Alaska came from this site. Will Hartman of Georgetown noted that the Red Devil Mine was the top mercury producer in the nation at one time.

Evelyn Thomas asked what message she should take back to the people of Crooked Creek. Fincher said agencies understand the message of caution. He said as BLM finishes this study, BLM will come back to communities and present a range of actions. He assured participants that this will be a very thoughtful, very scientific process and communities will have information about the risks before any actions are taken.

Will Hartman said his concerns differed from Crooked Creek's in that he was concerned that leaving the material in place could cause more harm over time. He said he was more concerned about the long-term effects on younger generations who may have been exposed to contaminants during infancy and youth.

Jennifer Roberts said ADEC has looked at other mercury mine sites in Alaska, including Red Top where cleanup work was performed. She said what is significant about Red Devil Mine is that ore from other mines was brought to this site for processing. Palmieri added that ADEC and BLM are looking at Kolmakof, Red Top and Cinnabar Creek, but the fact that mercury was processed at Red Devil is cause for greater concern at the site.

June McAtee of Calista Corporation said she had not heard that ore was brought to Red Devil from other mines for processing. Larry Beck said records indicate there was a relationship between the owners of Kolmakof and Red Devil Mine, and that ore from Kolmakof was sent elsewhere for processing, but there was no documentation regarding where. He said ore was often moved from one area to another for processing and some documentation was lost after former mine sites were abandoned.

BREAK

Fish tissue and aquatic insects study

Matt Varner, BLM fisheries biologist, gave a short presentation about the fish tissue and aquatic insects study BLM is conducting on the middle Kuskokwim River.

Varner explained that BLM and Fish and Game used locals to help collect fish samples last field season. Muscle tissue and livers were being tested to give BLM a picture of both long and short-term exposure levels. He said in response to suggestions last year from Sleetmute Traditional Council, BLM requested that the lab test boiled livers and eggs, in addition to the standard analysis of the muscle and liver tissue.

Varner said BLM had asked Angela Matz of the U.S. Fish and Wildlife Service to analyze the data and BLM hopes to have a draft out in late May and a final report by August. He said Matz would be working with Nim Ha of the Division of Public Health to analyze risks and communicate risks to local communities as appropriate.

Future plans include collection of additional samples to augment last year's data and a telemetry study to track fish movement in the Kuskokwim for two years to look at seasonal movement. He said Fish and Game will use local hires again this year, that local people are critical to know where to collect species.

Jim Fincher thanked community participants and reminded them of BLM's request that they share information from the workshop with members of their communities. He restated BLM's commitment to continuing to engage local communities throughout the Red Devil Mine process. He said BLM would like to meet with them again, but would do so at their request and at a date and time that works for them.

Fincher assured participants that BLM heard their concerns about moving with caution. He said an interagency approach and good community involvement were critical to the outcome at Red Devil Mine.

The meeting concluded at 3:35 p.m.

RED DEVIL MINE COMMUNITY MEETING

Sleetmute, AK

Date/Time: April 28, 2011, 1 p.m.
Location: Sleetmute Traditional Council
BLM Reps: Matt Varner, Mike McCrum, Larry Beck and Teresa McPherson
Agency Reps: Anne Marie Palmieri (ADEC) and Mahri Lowinger (EPA)
Attendees: Ten residents of Sleetmute, including Traditional Council President Sophie Gregory, Vice President Rebecca Levi, Tribal Administrator Marion Parrish, and Elder Andrew Fredericks (sign-in sheet attached)

Matt Varner welcomed participants and asked agency representatives, BLM staff and residents to introduce themselves. He explained BLM and agency partners had held community meetings in a number of villages along the Kuskokwim River in March and April to update residents on the progress of the Red Devil Mine investigation and invite local knowledge about the site. He cited the example of a powder house near the site that BLM learned about from local residents the previous summer and explained that local knowledge was critical to BLM's understanding of the site.

Varner explained the objectives of the meeting were to ensure transparency of the investigation process and to continue to invite local and/or traditional knowledge from participants about the site.

Mike McCrum presented an overview of fieldwork from the previous year and the Draft Work Plan, including fieldwork planned for this field season. He then addressed questions from participants.

- Marion Parrish asked if groundwater at the site passed through soil or rock. McCrum said both, and added that BLM would conduct more below ground sampling this season.
- Andrew Fredericks asked if the samples from Red Devil Creek showed contamination. McCrum responded yes. Fredericks asked why it had taken 50-60 years for BLM to do something about it, and why BLM was taking so long to clean it up. McCrum explained BLM assumed ownership of the abandoned mine in the 80's and removed hazardous structures that posed immediate risks. Then BLM began to assess contamination issues. He acknowledged this is a lengthy process due to many factors, and that others have voiced similar concerns.
- Fredericks said he was concerned about the Donlin Creek Mine, that it can take a long time to know if something goes wrong. McCrum explained that Donlin isn't on BLM lands, but noted that companies operate under more stringent regulations today than in the past.

- Fredericks asked which agencies would have oversight authority of the Donlin Creek mine. Mahri Lowinger of EPA explained that EPA would have a role but it isn't clear at this time what that role will be. She said the Army Corps of Engineers would likely be the lead agency.
- Anne Marie Palmieri added that the State would be involved as well, that ADEC's water quality section and DNR's large mine permitting team would require permits.
- Fredericks asked if the creek is suitable for drinking water. McCrum said no. Fredericks noted that the creek drains into the river. McCrum said that was BLM's concern. Fredericks wondered if contaminants contributed to the spots they find inside some of the fish they catch. Varner asked residents to keep and freeze fish they find with spots and BLM would have the fish examined.
- One participant asked what CERCLA is. McCrum explained CERCLA is a process developed by the federal government in the 80s to address Superfund sites. He said Red Devil Mine isn't a Superfund site, but BLM is using this process to address contamination issues at the site.

McCrumb explained that BLM is considering some form of early action, given the results of last year's sampling results. The objectives of an early action would be to prevent sediment migration to the river and to limit exposure of people and wildlife to the tailings. He said this is something BLM would like to hear from communities about, and invited participants to give it some thought and offer any comments they might have.

Matt Varner, BLM fisheries biologist, spoke briefly about U.S. Fish and Wildlife fish consumption guidance that recommended women and children limit pike consumption due to the neurological effects of mercury to infants and children.

He also discussed the hair sampling program by the Alaska Division of Public Health that tests hair samples from volunteers to determine mercury levels. From 2003 through 2010, samples from 800 volunteers across the state were analyzed for mercury. Only a handful of samples contained elevated levels of mercury and those individuals were not from the Kuskokwim area.

Next Varner gave a short presentation about the fish tissue and aquatic insects study BLM is conducting on the middle Kuskokwim River.

Varner explained that BLM has asked Dr. Angela Matz of the U.S. Fish and Wildlife Service to look at the data collected last field season. He said it's likely the State will issue new consumption guidance shortly after Dr. Matz completes her analysis.

Varner said the State's fish consumption guidance would spell out recommendations based on fish size and age. He reminded participants that for those who are not in high risk categories (expectant mothers and young children), eating a diet high in fish is the healthiest choice.

Varner summarized a fish telemetry study BLM and Fish and Game would conduct to track fish movement in the Kuskokwim to look at seasonal movement. He said they would like to hire locals to help with the study.

- One resident asked if methylmercury bioaccumulates in the body, how does one determine how much is acceptable? Varner said public health guidance for

methymercury concentrations is based on studies and research that err on the side of human health. The state uses a framework to determine when public safety guidance is warranted.

- One resident commented that Donlin Creek Mine had met with the community and acknowledged that even using state-of-the-art methods, some mercury would be released into the air.
- A participant asked how fish sampled on the Kuskokwim near Red Devil compared to sampling on the Holitna River. Varner noted that samples from the Holitna had higher concentrations of methymercury.
- Anne Marie Palmieri noted that sampling conducted at Red Devil Creek last summer showed high concentrations of arsenic and methylmercury, and that it was not advisable to eat fish from the creek. Varner concurred that it was best to not eat fish from Red Devil Creek.
- Marion Parrish asked how the council could offer feedback on the early action proposal. McCrum said they could comment via e-mail to the address in the handout. Parrish noted that Sleetmute Traditional Council would be doing water and soil sampling and wondered if they could coordinate efforts with BLM to provide samples. McCrum said the contractor would collect samples from mid-July to mid-August.
- Elder Andrew Fredericks said he thought Red Devil Creek would never be clean again. He said he worked at the mine in 1947 and 1948. He said Pete Mellick's dad used to say once a creek is contaminated like that, it cannot be cleaned up. He noted, "That creek worries me."
- Anne Marie Palmieri said the creek worries her too, that BLM and ADEC talk a lot about that creek.
- Fredericks said he was 81 years old and had eaten fish all his life. He said people are starting to get sick and are scared. He repeated, "I think about that creek a lot. That creek worries me."
- STC President Sophie Gregory asked if it was safe to drink the water from the Holitna. Varner said he didn't have sediment or water data on the Holitna. Gregory noted that people drink from the river when they hunt, and said she was concerned. Varner noted that fish are not a good indicator of human risk. He encouraged residents who have concerns to have hair samples tested by the Division of Public Health to find out their mercury levels. The State will follow up with anyone who has elevated levels.

The meeting concluded at 3 p.m.