

Community Participation in Environmental Monitoring at Mine Sites

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ENVIRONMENTAL
MINING COUNCIL
of British Columbia

Community Participation in Environmental Monitoring at Mine Sites



OVERVIEW

- The dominant model for environmental monitoring at mine sites
- Why communities are devising alternatives
- Examples of new models for community involvement in environmental monitoring

Purpose of environmental monitoring programs



- To provide early detection of environmental changes related to a company's activities

The dominant model



- Typically, a two-party arrangement between government and the company (e.g., laid out in permits)
- Company collects data and government provides oversight function

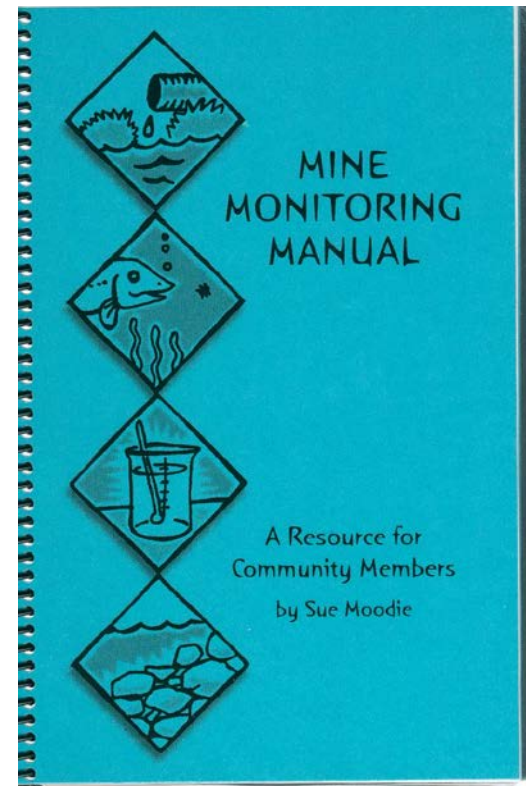


Problems with the dominant model

- Public input into the monitoring program, and access to information, e.g., results, are limited
- Requires vigilance on the part of the government (inspections, review of monitoring data)

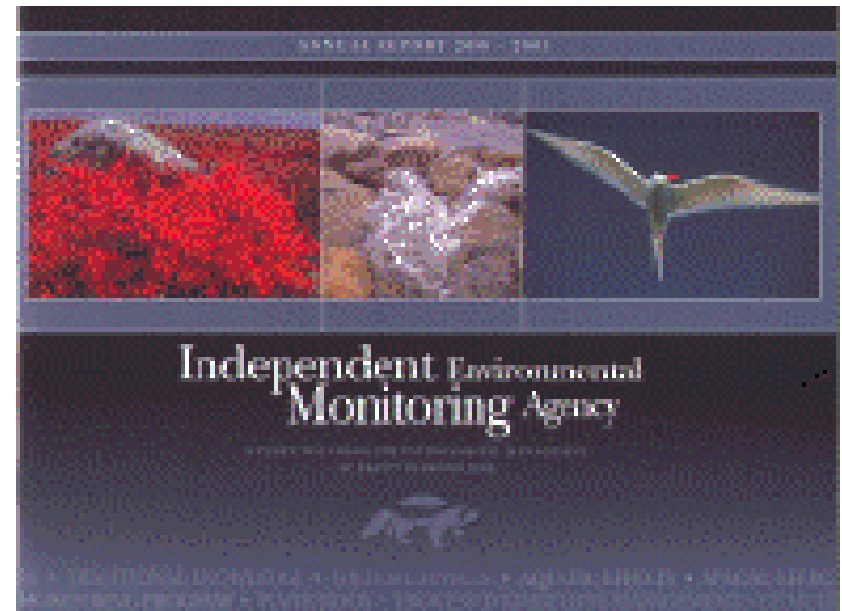
New models for increased community involvement

- Communities conduct their own monitoring
- This is generally a first step, to identify problems (contamination) or justify the need for an enhanced monitoring program



New models for increased community involvement

- An independent body reviews and evaluates the company's environmental monitoring program
- E.g., Ekati Mine's Independent Environmental Monitoring Agency



New models for increased community involvement

- Community performs oversight and auditing roles
- E.g., Good Neighbor Agreement negotiated between the Stillwater Mine and community organizations

N P R C

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First-Ever Agreement Sets Precedent For Resolving Clashes Over Mining Impacts

*Stillwater Mining Company and Citizens Groups Negotiate Extensive Land,
Water and Community Protection*

MINE AND SUCCESSORS BOUND TO LONG-TERM AGREEMENT

FOR IMMEDIATE RELEASE:
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BILLINGS, MT – In a nationally precedent setting agreement announced today, local citizens groups and a major Montana mining operation have negotiated a legally binding contract that includes extensive land, water and community protections above and beyond

Model 1.

Community-led monitoring

CASE STUDY: ESPINAR

- Espinar is one of the poorest provinces in Peru, with an estimated 84% living below the poverty line. Sixty percent of the province's population is rural, and 80% are indigenous Quechua speakers



The people and their way of life



Why there is concern

- Due to suspected contamination and negative health effects (death of livestock) related to mine discharges



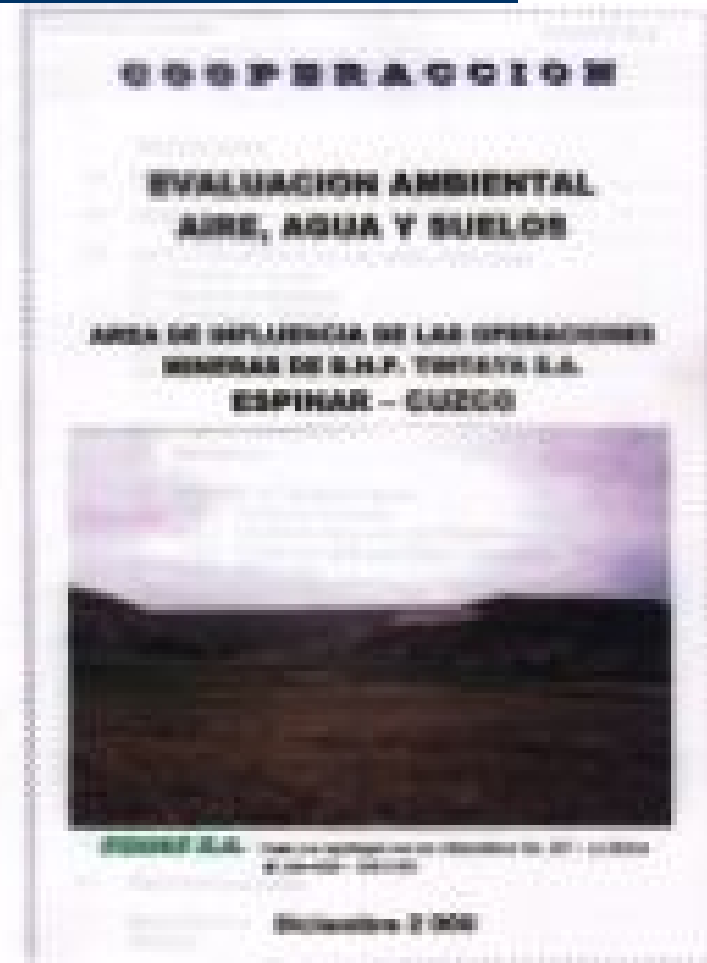
Why there is concern

- Water from the mine's processing plant and the company's camp was leaking into local water courses, which serve as drinking water for the local community and livestock, and pasture lands
- People noticed changes in growth/health of vegetation



The community response

- In November, 2000, the people of Espinar decided to conduct their own environmental sampling projects to determine the environmental quality of soil, air and water in the area influenced by the BHP Tintaya mine



VISTAS FOTOGRAFICAS QUE MUESTRAN AMBIENTES DE IMPACTO POR EL MANEJO DE RELAVES Y OPERACIONES MINERO-METALURGICAS - B.H.P. TINTAYA S.A.

TINT. 1

Dique lateral derecho de la cancha de relaves.

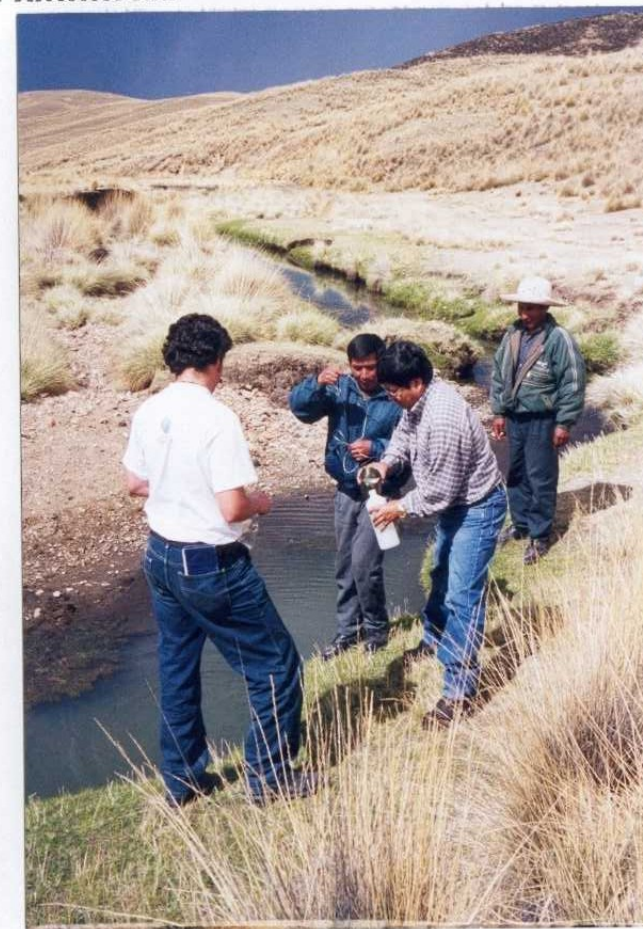
Tunel, canal a través del cual se evacua las filtraciones de la cancha de relaves.

Área de Almacenamiento de Cal expuesto a la acción eólica, dispersión de material.

Acumulación de desmonte expuesto a la erosión eólica y lixiviación.



TINT.1A.- La fotografía muestra el bofedal Pacca Pacco y áreas adyacentes a la cancha de relaves que experimentan impactos



Quebrada Winumayo con sedimentos de relaves

TINT.1B.- Quebrada Winumayo, cuerpo receptor de la descarga indirecta o directa de los relaves. Técnicos muestreando.

Results of the study

- Four water courses were sampled; all four were found to be unsuitable for domestic consumption (WHO and Peru WQ standards)
- Parameters of concern included As, Pb, Fe, hardness, coliform, chloride
- The levels of As, Pb and Fe also limited the utility of those waters for agricultural and animal husbandry purposes

Company response



- BHP hired the own consultants, Montgomery-Watson, to review the community's study. According to BHP, their consultants' review indicated that the community's study did not prove that the contamination came from the mine.

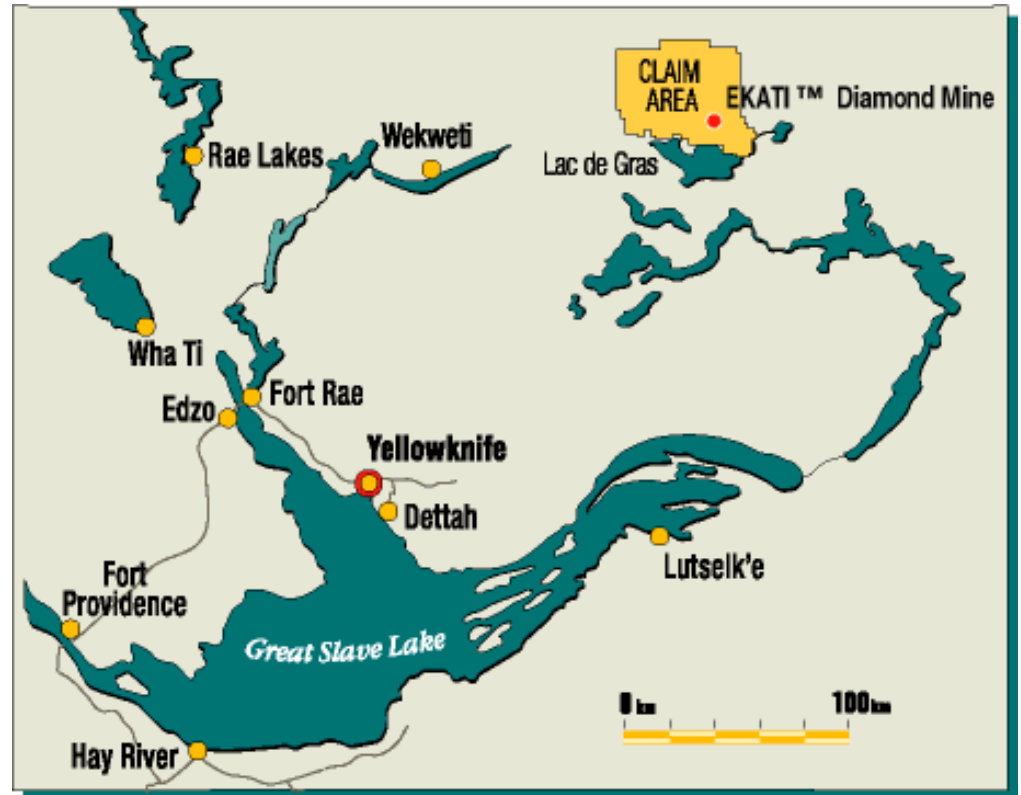
Pros and cons of community-based monitoring

PROS	CONS
Community may be able to confirm the presence of contaminants (support their suspicions)	If not done well, results may not be reliable, and may lead to inappropriate conclusions or interpretations
Community knowledge of issues related to environmental quality may be enhanced through their participation	Community time and money spent, but may produce few concrete results, which may lead to frustration
	Studies may lead to battle of the experts, and may end in stalemate or conflicts

Model 2.

Independent review of company's monitoring

- BHP's Ekati Diamond Mine, Northwest Territories
- Entire region under treaty negotiations
- Traditional territory of five indigenous groups
- 400,000 caribou, as well as grizzly and wolves





Why the independent monitoring body was created

- Project went through an Environmental Review Panel. The recommendations were general in nature and regarded as weak by indigenous and environmental groups
- The federal government also understood that many environmental issues would not be covered adequately by the existing regulatory regime in the north. So they required the negotiation of an Environmental Agreement between the company and government(s)
- Indigenous organizations were involved in the negotiations, but were not parties to the agreement

The Independent Environmental Monitoring Agency (IEMA)

- One of the requirements of the Environmental Agreement was the creation of an Independent Environmental Monitoring Agency (IEMA)
- The IEMA is an independent body tasked with overseeing the company's environmental management at the mine, and the government's regulatory function at the mine site
- It is composed of 7 directors: 4 appointed by indigenous organizations, 3 appointed jointly by BHP and the federal and territorial governments

Activities of the IEMA



- Reviews and analyses company's environmental quality data
- Reports and/or make recommendations concerning environmental effects monitoring, cumulative impacts, monitoring, regulatory and related management programs and activities of the territorial and federal government.
- Provides an accessible public repository of environmental data, studies and reports; and disseminates information to the indigenous peoples and general public about environmental management issues of the project

Funding and staffing of the IEMA



- BHP has to pay for the operation of the Agency (approximately \$500,000 per year).
- Agency has two full-time staff (manager and environmental analyst) who run the public registry, the day-to-day operations, and conduct some technical work.

Is the IEMA effective?

- Both aquatic and wildlife effects management and monitoring greatly improved as a result of Agency involvement
- Caused increased attention to potential (unpredicted) AMD problems related to waste rock at the mine site
- Detected environmental change on several occasions that had not been detected by the company or regulators.
 - Alerted company to apparent increase in [] of some metals on vegetation and in water at the site
 - Alerted company and government regulators to declining oxygen content in fish-bearing lake under winter ice cover



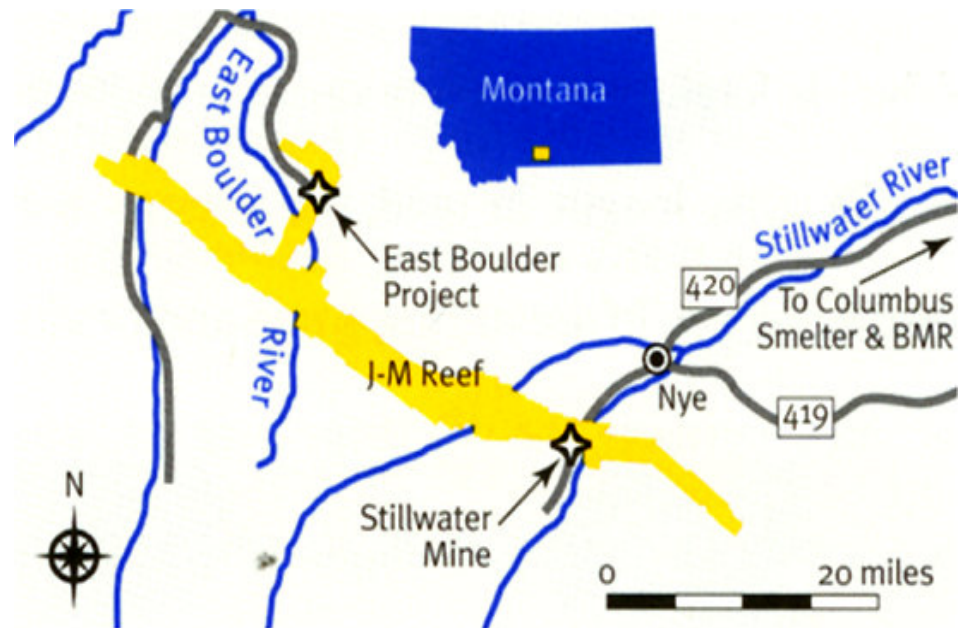
Pros and cons of the IEMA



PROS	CONS
Has greatly increased transparency, and access to information	Agency only makes recommendations on courses of action, therefore, political will is still required
To date, response to identified problems has been good, thus, the level of comfort concerning environmental management at the mine has increased	
It is part of a legally binding contract	
Funded by the company	

Model 3. “Good Neighbor” Agreements

- Two mines, Stillwater and East Boulder
- Both platinum-group mines
- At the time, operations were rapidly expanding
- Area is located north of Yellowstone Park.
- Both mine sites are next to high quality trout streams, and high-use recreational areas that border agricultural lands



Why the concern



- Communities concerned that the expansion would create many issues (environmental, social), and that government alone would not be able to solve the problems that might arise
- Community groups in the region had long called for state and federal regulatory agencies to require more stringent controls on mines wastes, and exercise greater oversight

What did the community do?



- Negotiated with the company's top management
- The community had a diverse 11-member team, which included local ranchers, professionals, retirees, public interest group representatives and others
- Forged a comprehensive agreement addressing every aspect of the mines' impacts

The Good Neighbor Agreement (GNA)



- An agreement that provides for citizen oversight of mining operations
- Is a legally binding contract between the Northern Plains Resource Council, the Stillwater Protective Association, and the Stillwater Mining Company
- The contract will also apply to any future owners or mine managers for the life of the mining operations



GNA Environmental Monitoring

- To enable the participation of the community groups, the company agreed to reimburse the groups for water sampling, consultants and some administrative costs (up to US\$135,000 per year)

Citizen involvement in the development of water-related monitoring programs

- Community members have the opportunity to participate in the design, implementation and oversight of the Water Program (which includes a comprehensive surface water program, groundwater program and an aquatic resources program)
- All of the design, implementation and maintenance of this program are paid for by the company
 - E.g., a third-party will conduct a baseline fisheries study and design a long-term monitoring program (approved by a committee that consists of the company and community representatives) for the Boulder River Watershed. Company will provide funds of \$150,000 over 5 years.

Citizen oversight of the company's monitoring



- Community representatives may observe and participate in all of the company's scheduled sampling and monitoring events
- At these times, members can have duplicate samples collected and up to 10% of them may be sent out for independent analysis (at the company's expense). If there are discrepancies between the independent lab and the company's results, a third party will be selected to review the sampling results and make recommendations.

Citizen inspections



- Representatives have the right to inspect mine facilities (with independent technical and scientific consultants), conduct sampling, take photographs, and meet with company employees during inspections.
 - Limitations: no more than two inspections per mine site per year
 - Obligations: community groups shall provide the company with no less than 72 hours notice; include a list of participants, and a list of company employees with whom they would like to meet during the inspection

Citizen Sampling



- Representatives may independently sample for any physical, chemical or biological parameter
 - Limitations: must give 72-hours notice; must be accompanied by a company employee or company consultant
 - Obligations: must give the company a receipt describing the samples taken and a portion of each sample

The agreement sets out remedial response plans depending on the significance of the infraction

Tier	If sampling results indicate:	Response:
1	a 15% increase above baseline conditions	<ul style="list-style-type: none">● duplicate samples taken at next sampling event● Sampling frequency increases● an internal remedial investigation occurs
2	Are between tier 1 and tier 3	<ul style="list-style-type: none">● Third-party audit● practicable corrective measures● fines of \$500,000 per year per contaminant
3	Non-compliance with permit or Montana regulatory standards	<ul style="list-style-type: none">● State regulatory exceedence may lead to up to \$25,000 per day per occurrence

Other requirements in the agreement

- Independent environmental performance audit every five years, which the company will fund (up to \$60,000 per audit). The company has agreed to abide by audit recommendations. All parties will be involved in choosing the auditor.
- Includes specific technological requirements, e.g., company must invest in developing and implementing new water treatment and waste reduction technologies to achieve zero discharge of waste water, and minimize size of waste rock dumps

Pros and Cons of the GNA

PROS	CONS
Access to all environmental compliance information, and requires company to maintain an electronic database of environmental monitoring data	The first agreement of its kind, so the outcomes are unknown – success will come through hard work and good will of all parties
Establishes clear and enforceable water quality standards that are more stringent than state regulatory requirements	If the mine is sold, a new company may be less cooperative, creating conflicts
Allows for citizen oversight and participation in monitoring programs	
Contains dispute resolution mechanisms	
Provides funding for citizen involvement	

Concluding remarks



- Why would companies want increased public/community participation in monitoring
 - More oversight may identify problems earlier (e.g., IEMA)
 - Increased participation leads to increased accountability
 - Increased oversight leads to increased transparency
 - Build good will rather than conflicts (which cause delays, bad publicity, lawyers fees, etc.)

Why increased community participation?

How best can the mining and minerals industry contribute to the transition to sustainable development?

GMI
Global Mining Initiative

By truly respecting the desires of communities for increased industry transparency and accountability, and by respecting communities' rights to determine their own "sustainable" futures.