Examining state mining laws of Colorado and Montana

Ellen Porter
The University of Montana

Follow this and additional works at: https://scholarworks.umt.edu/etd
Let us know how access to this document benefits you.

Recommended Citation
https://scholarworks.umt.edu/etd/8618

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.
Permission is granted by the author to reproduce this material in its entirety, provided that this material is used for scholarly purposes and is properly cited in published works and reports.

** Please check "Yes" or "No" and provide signature **

Yes, I grant permission  \[\checkmark\]
No, I do not grant permission  

Author's Signature  

Date  \[1.5.97\]

Any copying for commercial purposes or financial gain may be undertaken only with the author's explicit consent.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Examining State Mining Laws
of Colorado and Montana

by

Ellen Porter

B.A. The University of Montana, 1993
J.D. The University of Montana, 1996

presented in partial fulfillment of the requirements
for the degree of

Master of Science

The University of Montana

1997

Approved by:

Chairperson

Dean, Graduate School

12-4-97

Date
Colorado and Montana state mining laws and regulations emphasize reclamation, or post mining activities, rather than pre-mining investigations and preparations. As a result of this reactive approach, serious environmental damage may result. An example is the Summitville mine in Colorado. The Colorado permitting agency permitted the Summitville mine without requiring site specific baseline data, plans for environmental protection, or sufficient agency involvement. Without acquiring this information prior to commencing mining operations, the Summitville mine did not have the information needed to mine the site without causing serious environmental harm. This lack of information ultimately caused the Summitville mine to fail and resulted in unpermitted waste water discharges. The Environmental Protection Agency ultimately had to place the site on the National Priorities List.

Reviewing Colorado mining laws and regulations as they were prior to the Summitville disaster indicate that they were inadequate to prevent such an occurrence. Montana mining laws and regulations are quite similar to Colorado’s prior laws and regulations in that they do not require preplanning that is sufficient to prevent a Summitville type disaster.

Colorado’s amendments to the law and regulations now require mining companies to submit accurate, site specific baseline data; prepare an Environmental Protection Plan; and requires the agency to be involved during each phase of construction. Many of the changes Colorado made to its laws and regulations may also be beneficial in Montana. Therefore, Montana should consider the possibility of learning from Colorado’s lessons and implement some preplanning to its mining laws and regulations.
# Table of Contents

Abstract........................................................................................................................................................................ ii

Chapter

I. Introduction.............................................................................................................................................................. 1

II. Overview of Colorado's Former Mining Laws and Regulations................................................................. 3

III. History of The Summitville Mine.................................................................................................................... 7

   Reopening the Summitville Mine....................................................................................................................... 9

   Environmental Problems at the Mine.................................................................................................................. 19

   What Went Wrong?........................................................................................................................................... 23

IV. Changes Colorado Made to Strengthen Its Law.............................................................................................. 27

   Permitting......................................................................................................................................................... 27

   Bonding......................................................................................................................................................... 29

   Agency Oversight and Enforcement.................................................................................................................. 30

V. Changes in Colorado’s Regulations.................................................................................................................. 32

   Permitting......................................................................................................................................................... 32

   Bonding......................................................................................................................................................... 35

   Agency Oversight and Enforcement.................................................................................................................. 36

VI. What Does Montana’s Statute Require?........................................................................................................... 39

   Permitting......................................................................................................................................................... 40

   Bonding......................................................................................................................................................... 42
List of Tables

<table>
<thead>
<tr>
<th>Comparison of Colorado’s Requirements and Montana’s Requirements</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>
I. Introduction:

The mining industry has recently made proposals to develop new mines and expand existing mines in Montana. As a result of these proposals, people are becoming increasingly concerned about the laws and regulations governing the mining industry. In light of historic mine disasters, this concern may be well founded. A case in point involves the Summitville mine in Colorado. The Summitville mine has become the "poster child" of the mining industry, where everything that could have gone wrong did. The real tragedy associated with Summitville is that with some foresight and planning, most of the consequences could have been prevented. By examining Colorado's laws, regulations and enforcement in connection with the Summitville mine, this paper will analyze whether Montana's laws and regulations provide adequate foresight to better enable the regulatory agencies to prevent a similar occurrence here.

Using Summitville's history and developments as a base, we can analyze what happened, why it happened, and try to determine how it could have been prevented. This paper will study these issues as well as discuss the laws and regulations in effect at the time the Summitville mine obtained its permit, then discuss the changes Colorado made to its laws and regulations in an attempt to guard against a similar occurrence. Next, this paper will explain what Montana's law and regulations require, and how Montana's laws and regulations compare with Colorado's. These discussions will lead in to how vigorously these laws and regulations have been enforced at existing mines in Montana and whether a Summitville type of disaster could happen in Montana. Finally, this paper will make recommendations as to how Montana could improve its existing laws and
regulations so a Summitville type incident is less likely to occur here.
II. Overview of Colorado's Mining Laws and Regulations:

In order to better understand how Summitville occurred, it may be helpful to first understand how Colorado's regulatory system was structured prior to the 1993 statutory amendments. In Colorado, hard rock mining is regulated under the Mined Land Reclamation Act (MLRA). The legislature gave the Mined Land Reclamation Board (MLRB) the "jurisdiction and authority over all persons and property, public and private, necessary to enforce the provisions of [the] article." According to the statute, the Board has the duty to review land reclamation problems associated with mining, and promulgate standards for land reclamation.

Along with these responsibilities, the legislature gave the Board the opportunity to "delegate authority to the division as necessary to efficiently carry out and administer the provisions of [the] article." As stated, the Board may elect to delegate as much or as little authority to the agency as they feel is necessary. As we will see however, the Board chose to retain most of its authority with itself rather than delegate it to the Department of Minerals and Geology (DMG). It is also the Board's responsibility to adopt and

1 Colorado's Mined Land Reclamation Act may be found at Colo. Rev. Stat. § 34-32-101 et. seq.
promulgate rules to carry out the provisions of this statute.\textsuperscript{5}

The remainder of the statute discusses what an operator must do to commence mining operations, comply during those operations, and how to appeal decisions concerning those operations. Initially, the operator must obtain a reclamation permit.\textsuperscript{6}

This permitting process is simpler and will be expedited if an operator is only applying for a Limited Impact Permit (operations that will occur on less than two acres and will result in the extraction of less than seventy thousand tons per year of mineral or overburden).\textsuperscript{7}

However, if a larger operation is expected, the operator must submit more information to the agency including: a reclamation plan,\textsuperscript{8} site map, legal description, surface and mineral owners, the source of the applicant's right to enter and mine, a description of the proposed mining operations, and a timetable estimating the various


\textsuperscript{7} Colo. Rev. Stat. § 34-32-110(l)(a) (1976). This provision requires the operator to provide brief descriptions on the area to be mined and the proposed operations. The agency must approve or deny these applications within 15 days of receipt of the application or it is automatically approved.

\textsuperscript{8} The requirements for reclamation plans are located at Colo. Rev. Stat. § 34-32-116 (1976). These requirements include: grading that conforms with the final land use; earth dams if impounding water is necessary; acid forming or producing material should be handled in a manner to protect drainages; refuse must be disposed of to control unsightliness; protecting surrounding areas from slides during reclamation activities; stabilizing affected areas; reclamation must be completed within 5 years from the date reclamation commenced.
mining stages. Once the application is submitted and fees are paid, the Board has ninety days in which to approve or deny the application. The statute allows the Board an extra thirty days if they need more information. If however, the Board has not rendered a decision within 120 days, the application is automatically approved and issued upon the receipt of the financial warranty. The Board must approve the permit unless it is in violation of reclamation provisions which are outlined in the statute.

As the final requirement to obtain the permit, the operator must provide the Board with a financial and performance warranty. A financial warranty consists of a written promise taking responsibility for limited reclamation costs along with proof of financial responsibility. A performance warranty consists of the operator’s written

---


11 Colo. Rev. Stat. § 34-32-115(4) (1976). These reasons include: the application is not complete, fee has not been paid, or the financial warranty has not been provided; any part of the operation is in violation of state or federal laws; the operation will affect man made structures; the mining operation is located on lands that are closed to mining or on state recreational areas; or the reclamation plan does not meet statutory requirements (found at Colo. Rev. Stat. § 34-32-116) including: grading appropriate for final land use; earth dams if water impoundments are needed; acid or toxic forming material must be handled in a manner that will protect drainages; all refuse must be disposed of to prevent unsightliness; etc.


13 Id. Forms of financial responsibility include: a surety bond, a letter of credit issued by a bank, a certificate of deposit, a deed of trust for real or personal property, a certified financial statement that states the applicant’s net worth is as least ten million dollars, or fixtures and equipment with a salvage value equal to the amount of the financial warranty.
promise that the operation will comply with the provisions of the statute.\textsuperscript{14}

The statute also gives the Board authority to oversee the operation once mining activities commence. The statute allows the Board or their authorized representatives to enter onto the lands at all reasonable times to inspect the operations in order to determine compliance.\textsuperscript{15} The statute gives the Board enforcement authority.\textsuperscript{16} If the Board has reason to believe that the operation has violated an order, permit or regulation, they must notify the operator in writing. The Board can also request that corrective action be taken, issue a cease and desist order, suspend, modify or revoke the permit.\textsuperscript{17} Penalties for violating a permit are subject to a penalty of not less than one hundred dollars and not more than one thousand dollars per day.\textsuperscript{18}

This summarizes Colorado’s mining law as it existed in 1984 just prior to Summitville’s reopening. These were the substantive portions of the law which Summitville’s operator had to comply with in order to obtain a permit to mine the area.

\textsuperscript{14} Id.
III. History of the Summitville Mine:

Everyone involved with reopening the Summitville mine supported it and hoped it would be a success. No one was prepared for the disaster the mine would eventually cause. The Summitville mine is located in the San Juan Mountain range in Colorado, about 25 miles south of Del Norte, in Rio Grande County, two miles east of the continental divide. The average elevation of the mine is 11,500 feet.\textsuperscript{19} The mine is near the headwaters of the Alamosa River. On its eastern border lies Cropsy Creek, which merges with Wightman Fork at the mine's downstream boundary. The mine's permitted boundary as it exists today encompasses 1440 acres, although only 550 acres have actually been disturbed. The mine lies mostly on private (patented) land, but is surrounded by the Rio Grande National Forest.\textsuperscript{20}

The area was first mined in the 1870's, at which time the landscape consisted of wetlands, upland surfaces and South Mountain peak. Alpine tundra, coniferous forests and subalpine meadows covered the landscape. Alluvial deposits in Cropsy Creek and Wightman Fork first attracted placer miners from 1870 until 1873. Although some opencut mining took place in outcrops of gold bearing quartz veins, underground mining dominated the area from 1873 through 1940. The town of Summitville was established

\begin{flushright}

\textsuperscript{20} Ibid., 1. Included in the mine site is 21 acres of National Forest land which is used for logging and recreation.
\end{flushright}
shortly after mining activities commenced in the area, but was abandoned in the 1930's.\textsuperscript{21}

During this period, the Summitville mine yielded approximately 240,000 troy ounces of gold with a value of about $7 million at the time of production.\textsuperscript{22}

\textsuperscript{21} Ibid., 2.

\textsuperscript{22} Ibid., 4.
Reopening the Summitville Mine

In 1984, Galactic Resources Limited (GRL), a Canadian Corporation, formed Summitville Consolidated Mining Co. Inc. (SCMCI). GRL acquired the Summitville land from the Forest Service and through a lease with individual property owners. SCMCI then applied to Colorado’s Department of Minerals and Geology (DMG) for a limited test pit and leach pad. Later that same year, SCMCI applied for and was approved for a full scale mining permit.

Although there were several factors which contributed to Summitville’s failure, the statutory and regulatory scheme for permitting caused much of the problem. As previously explained, DMG regulates mines in the State of Colorado pursuant to the Colorado Mined Land Reclamation Act. The Colorado Mined Land Reclamation Board (MLRB) oversees the agency’s actions. This Act is similar to Montana’s in that it


Colo. Rev. Stat. §34-32-110(1)(a) (1976) allows a Limited Impact Operation permit if the operation will affect no more than two acres and will extract less than 70,000 tons of mineral or overburden per year.

Pendleton, supra note 19 at 4.


requires an operator to obtain a permit prior to commencing mining activities,\textsuperscript{28} reclaim the land to a beneficial use,\textsuperscript{29} submit a reclamation plan,\textsuperscript{30} post a bond,\textsuperscript{31} and provide notice to the public in regards to their proposed mining operation.\textsuperscript{32}

Once the operator submits a permit application, MLRB has 120 days in which to approve or deny the application.\textsuperscript{33} At the time SCMCI applied for its mining permit, Colorado's laws and regulations greatly favored approval. In addition to providing MLRB and DMG a very limited time to inspect the site and prepare reports on a proposed mine, MLRB and DMG had to show that the company was not in compliance with the Mined Land Reclamation Act in order to deny a permit.\textsuperscript{34} To further compound this

\begin{itemize}
  \item \textsuperscript{29} Colo. Rev. Stat. §34-32-102 (1976).
  \item \textsuperscript{31} Colo. Rev. Stat. §34-32-117 (1976).
  \item \textsuperscript{32} 2 Colo. Code Regs. 407-1 (Rule 2.22) (1977).
  \item \textsuperscript{33} Colo. Rev. Stat. §34-32-115 (1976). Colorado does not have a state law equivalent to the National Environmental Protection Act. As a result, there may often be less opportunity to determine potential environmental impacts and less time for public involvement.
  \item \textsuperscript{34} Colo. Rev. Stat. §34-32-115 (1976). The Department or the Board would have to show that the company did not comply by: 1) not completing the application or not providing financial warranties; 2) not paying the application fee; 3) proposing current or future use that is contrary to the laws or regulations of Colorado or the United States; 4) adversely affecting man-made structures that lie within 200 feet of the affected land; 5) locating the mine on prohibited lands; 6) planning reclamation that does not conform to statutory requirements.
\end{itemize}
situation, the 1984 Colorado legislature drastically cut DMG's funding, allowing enough funds to employ only 15 people. Not only did DMG have to follow up on Summitville's permit application under serious time and budget constraints, but it was also required to oversee 2,000 other mining operations across the state. As a result, the agency may not have had the financial or human resources to oversee the permitting process adequately.

When SCMCI applied for the full scale mining permit it was required to comply with the Hard Rock/Metal Mining Rules and Regulations and submit baseline data of the existing environmental conditions at the site. These regulations were very lax. The regulations left it up to the operator to provide DMG with the baseline data for the area. The baseline data reflected over a century of mining, and other pollution sources in the area such as nearby inactive mines or natural degradation in neighboring creeks. SCMCI represented that the mine would be a "zero discharge" facility. Therefore, it did not have to apply for an NPDES permit (or Colorado's equivalent water quality permit).

35 Mark Obmascik, "Mine Disaster Worsens to Tune of $33,000 a Day" The Denver Post, 2/21/93.
37 Danielson, supra note 23 at 348.
39 Danielson, supra note 23 at 354. It is common for mines to characterize the operations as "zero discharge." This representation allows them to obtain an operating permit without having to apply for a NPDES permit (or a similar state permit). The "zero
Some of SCMCI's other data was erroneous. The baseline data on water quality at the Summitville mine site was actually water quality data for tributaries below the mine site and was conducted by a previous mining company. The water quality data that SCMCI submitted was not representative of the Summitville mine site and was probably of lower quality since it was downstream and was affected by other sites. The climatological data SCMCI submitted was not determined at the Summitville site. Rather, the data was taken from neighboring Wolf Creek site where annual precipitation is generally lower than Summitville. The company submitted figures that showed evaporation would exceed the precipitation in the heap leach pad. As everyone later learned, this was not the case. The Mine Plan regulations which existed at the time required very little information from the operator. These regulations required the operator to identify the affected land and the adjacent land, provide a general timetable for the operations, and describe the ore body to be mined. The Reclamation Plan required the operator to include specific information on water, wildlife, soil and vegetation.

Within 56 days after SCMCI submitted this data, MLRB approved the permit

---

40 Ibid., 349.
41 Ibid., 349.
application, which was prior to the expiration of the 20 day public comment period. MLRB included in the permit a conditioned requirement that SCMCI promptly notify DMG of any cyanide spills, modifications in constructing the leach pad, and its promise to submit a detoxification leachate model study. Almost immediately after receiving the notice that MLRB had approved the mine, SCMCI began construction at the site as it was under substantial pressure from the finance company to get the operation up and running. Later that same year, during the 1986 legislative session, DMG's budget was cut even further from $561,000 to $250,000. As a result, DMG's personnel was cut from 15 to six.

The winters at the Summitville mine site are long and harsh. The area receives an

43 Danielson, supra note 23 at 350. Although the statute provided MLRB with 120 days to approve or deny an application for a permit, SCMCI submitted their application on August 31, 1984 and MLRB gave its final approval on October 25, 1984, only 56 days later.

44 Ibid., 350. Colorado's Administrative Procedure Act requires that the public be given 20 days to comment after the last legal notice is published. The MLRA requires that a copy of the application be placed at county clerk and recorder's office in the proposed mine's locality for public inspection. (Colo. Rev. Stat. § 34-32-112(10) (1976)). In addition, the MLRA requires the applicant to publish notice of the application's filing in a newspaper within the proposed mine's locality. Id. MLRB's violation of this requirement probably did not make a difference in the outcome, however, since no groups or individuals expressed any concern either before or after the approval. Unlike Montana, Colorado does not have a NEPA equivalent. This results in a shorter public participation period. If Colorado had a NEPA type law, an Environmental Assessment would have been conducted and it is likely that an Environmental Impact Statement would have also been conducted.

45 Ibid., 351.

46 Obmascik, supra note 35.
average of 55 inches of moisture a year. Much of this moisture comes in the form of snow.47 The winter of 1985 proved to be no different than usual. SCMCI chose not to delay construction of the leach pad liner, and began construction in the fall. During this construction, the liner was hit by several snowslides which resulted in rips, tears, and inadequately sealed seams.48 SCMCI explicitly went against its own consultant's advice by going ahead with the winter construction of the leach pad liner.49 In addition to making poor choices about winter construction, SCMCI proceeded to make modifications to the construction plan without first notifying DMG or MLRB, although they had agreed to do so in the issuance of their permit.50

During the spring of 1986, DMG employees made several inspections of the site.51 Although in their reports they expressed concern over many aspects of the leach pad and liner, DMG officials never took action on these concerns.52 On June 5, 1986, SCMCI

---

47 Pendleton, supra note 19 at 1. It is not uncommon for the area to receive 400 inches of snow throughout the winter months.

48 Danielson, supra note 23 at 351.

49 Ibid., 351. The initial consultant who disagreed with SCMCI's decision to construct the leach pad liner during the winter months has since brought suit against SCMCI.

50 Ibid., 351. One of these modifications involved the decision to construct one big heap leach pad where the permit called for three smaller heap leach pads.

51 2 Colo. Code Regs. 407-1 (Rule 8.1 (1) (1977) states: "The Board, Board, the Division of Mines . . . may enter upon the lands of the operator at all times for the purpose of inspection . . . ."

52 Danielson, supra note 23 at 352.
began its mining and leaching operations. The leach pad liner was not fully constructed at this time, but the company saw fit to use only the portion of the liner that was completed and continue construction on the unfinished portion. Six days after commencing operations, SCMCI reported to DMG that it had detected cyanide solution in the leak detection system (located between the upper and lower liners) in an amount just under one half gallon per minute.53

When DMG questioned SCMCI about this cyanide, SCMCI argued that the cyanide was the result of overspray to the leach pad. SCMCI promised DMG officials that it would spray the solution more carefully in the future.54 Neither DMG or MLRB exercised any authority at this time other than to request that SCMCI use better spraying practices. In late June, 1986, a DMG official inspected the site. At the time of this inspection, the pad was fully loaded with ore. She discovered that the cyanide detected below the liner was actually the result of leaks in the liner pad, not careless overspray as SCMCI had alleged.55 As a result of this inspection, SCMCI requested and MLRB approved a sump pump system which would capture the fluid below the pad and pump it back into the heap.56 In making this request, SCMCI relied on the erroneous climatological data submitted with its permit application. As SCMCI would later learn,

53 Danielson, supra note 23 at 353.
54 Ibid., 353.
55 Ibid., 354.
56 Ibid., 354.
the rate of evaporation did not exceed the precipitation rate.\textsuperscript{57}

Since this pump operated continuously, it was failing within a year of its installation. Nine cyanide spills were reported during the summer of 1987 which resulted in a release of 85,000 gallons of contaminated fluids into the neighboring Cropsy Creek.\textsuperscript{58} This unpermitted discharge began SCMCI's involvement with the Colorado Water Quality Control Division (CWQCD).

Since the mine was obviously not a "zero discharge" facility as SCMCI had originally represented, SCMCI was forced to apply for a discharge permit. As a result of SCMCI's numerous environmental problems, CWQCD granted a permit allowing regular discharges, but required SCMCI to implement Best Available technology (BAT) standards and meet water quality standards as though it was discharging into pristine waters.\textsuperscript{59} SCMCI installed a wastewater treatment system in an effort to comply with the BAT requirements. However, this system was technologically insufficient to treat the wastewater to the extent the permit required. As a result, the waste fluids were not discharged and the fluid level in the leach pad continued to rise.\textsuperscript{60}

\textsuperscript{57} Ibid., 354. SCMCI had erroneously relied on climatological data from the neighboring Wolf Creek mine site. It was later determined that the Summitville mine site receives an annual average of 35 feet more snow than does the Wolf Creek site. The erroneous data represented that the fluid levels in the heap leach pad would drop an estimated 127 feet per year. However, the fluid levels actually rose approximately 10 feet every year.

\textsuperscript{58} Ibid., 354.

\textsuperscript{59} Ibid., 354.

\textsuperscript{60} Ibid., 354.
After SCMCI realized it was not able to comply with the permit requirements, it opted for the possibility of applying the heap's cyanide solution to nearby land. It decided to spray the waste fluid as a fine mist over a flat piece of ground in the hopes that the moisture would evaporate at a faster rate than that of the leach pad. Originally, the land application area was to consist of 17 acres. Without requiring substantive studies, MLRB approved this proposed disposal method. After MLRB approved the method, SCMCI failed to obtain one property owner's permission. This resulted in a land application area of a mere 5 or 6 acres. Additionally, since SCMCI did not conduct adequate subsurface testing, no one realized that a layer of clay existed just below the surface. After SCMCI began spraying, the waste fluids began running off the land and drained into Wightman Fork. As a result, CWQCD issued a notice of violation for an unpermitted discharge. In 1990, the Colorado Division of Wildlife stocked the Terrace Reservoir (17 miles downstream from Summitville), with 15,000 fingerling trout. Less than one month later, biologists found no trout remaining alive.

In 1991, MLRB and CWQCD issued notices of violation to SCMCI for its continuing environmental problems including discharges into Wightman Fork, acid drainage from the waste rock plie, the pump system and the leaking leach pad liner.

61 Ibid., 355.
62 Ibid., 355.
63 Obmascik, supra note 35.
64 Danielson, supra note 23 at 356.
Later that same year, SCMCI and the agencies reached an agreement whereby fines were assessed totaling $100,000. In July, 1992, the parties agreed to increase SCMCI's bond by $5 million.\(^{65}\)

SCMCI seemed to be cooperative about this arrangement and it appeared as though the parties were going to work together to resolve the issues. However, on December 1, 1992, SCMCI notified the State of Colorado of its intent to file bankruptcy and abandon the mine effective December 16, 1992.\(^{66}\) On December 4, 1992, the State of Colorado realized it was not prepared to handle the situation and called in the Environmental Protection Agency which placed the site on the National Priorities List.\(^{67}\) The EPA inherited a contaminated site that required around the clock attention. To further compound the situation, the winter of 1992-93 proved to be one of the most severe winters in recent history.

---

\(^{65}\) Ibid., 356.

\(^{66}\) Pendleton, supra note 19 at 1.

\(^{67}\) Ibid. In addition to being ill-equipped to handle the escalating problems at the mine, Colorado does not have a law equivalent to CERCLA. Without such a law it is unlikely that Colorado had the funds or the staff to handle the situation.
Environmental Problems at the Mine

In addition to the open pit mine, the EPA inherited the following environmental problems:

1. The heap leach pad. As of December 16, 1992, the fluid levels in the leach pad were only 5 feet below the emergency spillway. Without constant attention, the heap leach pad would have overflowed in Spring, 1993. As part of the leaching process, SCMCI would place intermediate liners on top of the previous lined layers when the processing solution would become too diluted by the excess water which was not evaporating from the heap leach pad. As a result of this process the heap reached a height of 127 feet with numerous intermediate liners.

2. The Cropsy Waste Rock dump. GRL’s consultants initially predicted that the ore came from an “oxide” zone and therefore did not have acid generating potential. These projections were later found to be incorrect. The pit geologist directed that waste rock (including that with acid generating potential) be placed in specific piles. One of

---

68 Ibid.

69 As a result of SCMCI's reliance on the erroneous climatological data, the fluids in the heap leach pad rose approximately 10 feet per year. To compensate for this additional moisture, SCMCI would use more cyanide to achieve the desired chemical reaction. When the fluids in the pad would become too diluted, SCMCI would place another intermediate liner on top of the last and start the process over again.

70 Danielson, supra note 23 at 352. In its permit application, SCMCI represented that it would cover the pad in the winter to guard against excess moisture. SCMCI further represented that it would grade the pad to allow for drainage off the pad. Neither of these representations were ever implemented.
these piles, the Cropsy Waste Rock pile, consists of 6 million tons of sulfide rich waste rock and is located in a spring fed bog. Mixed with water, this pile generated an enormous amount of acid drainage and released metallic contaminants.\(^{71}\)

3. The Reynolds Adit. The Reynolds Adit was a tunnel constructed in the mine which served to lower the water table to avoid the high costs of pumping. The Adit made mining in the lower levels less difficult. Before the EPA plugged this adit, it flowed continuously. Flows varied from a low of 100 gallons per minute in the winter to a spring flow of 400 gallons per minute. (Flows of up to 1,600 gallons per minute have been reported during spring snowmelt). The open pit mine floor is located approximately 300 feet above the adit. As a result, fluids from the pit also flowed through the adit. This flow increased the oxidation of the ore and resulted in acid mine drainage which flowed into neighboring surface waters. Copper was also a concern. Prior to 1988, copper concentrations in the adit flow averaged 20-30 mg/l. By 1992, copper concentrations reached 130 mg/l, or as high as 9,000 pounds per day.\(^{72}\)

4. The Chandler Adit. The Chandler Adit began to flow in 1994, although the EPA had plugged it previously. Peak flow through this adit was calculated at 661 gallons per minute. This flow, combined with the copper enriched ore resulted in copper

---

\(^{71}\) Pendleton, supra note 19 at 6.

concentrations of 268 mg/l.\textsuperscript{73} Between July 1993, and June 1994, approximately 198,221 pounds of copper were transported through this adit into nearby surface waters.\textsuperscript{74}

The EPA's clean-up action consisted of three phases. Phase I, which was completed during the 1993 construction season, involved lining the mine pit with pH neutralizing material and moving 1 million cubic yards of waste into the pit. Phase II, which was completed during the 1994 construction season, involved moving another 3.5 million cubic yards of waste into the mine pit and contouring the pits so they are free draining. Phase III, completed during the 1995 construction season, involved placing a vegetative cap on the mine pits and revegetation of the former Cropsy Waste Pile, Beaver Mud Dump, and Cleveland Cliffs Tailings Pond.\textsuperscript{75} The cleanup costs for the mine will far outweigh the income produced from the mine and the total bond for the mine.\textsuperscript{76} The total clean up costs are expected to exceed $120 million,\textsuperscript{77} but from 1984 until the time of bankruptcy the mine yielded approximately 249,000 troy ounces of gold with a market

\begin{footnotesize}
\textsuperscript{73} Numerical Water Quality Standards for the Alamosa River Basin for copper are 30 ug/l. 2 Colo. Code Regs. (Rule 3.3.6.) (1977).
\textsuperscript{74} Kirkham, supra note 38 at 121.
\textsuperscript{75} Ibid.
\textsuperscript{76} For a discussion of the steps the EPA has taken since the clean up see section entitled "Enforcement Options" in Appendix A.
\end{footnotesize}
value of only about $81 million. SCMCI's bond for the mine stood at $4,718,310 at the time the company filed bankruptcy.

78 Pendleton, supra note 19 at 4. Market value is based on an average price of $325 per ounce.

79 Danielson, supra note 23 at 357.
What went Wrong?

Summitville is one of modern mining’s worst environmental disasters. As outlined above, anything that could have gone wrong at the Summitville mine did. Not only did the operator’s negligence in relying on erroneous or nonexistent data contribute to the situation, but the regulatory process also failed. Initially, Colorado’s Mined Land Reclamation Act does not grant MLRB or DMG sufficient time to fully consider an application prior to granting approval. This same provision creates an unrealistically high standard as grounds for denying a permit.

Neither the statute nor the regulations contained specific provisions requiring the operator to submit complete or accurate data about existing environmental surroundings. The statute and the regulations left it up to the operator’s discretion to submit data beyond general descriptions of the environmental conditions existing at the site at the time of the application. There were no provisions requiring agency personnel to determine the

---

80 Colo. Rev. Stat. 34-32-115(3) states: If action upon the application is not completed within the one-hundred-twenty-day period specified in subsection (2) of this section, the permit shall be considered approved and shall be promptly issued.

81 Colo. Rev. Stat. §34-32-115(4) forbids the Board from denying any permit unless the application is incomplete, the application fee has not been paid, the operation is contrary to state or federal laws, the operation will adversely affect man-made structures, the operation is on state or federal parkland, or the reclamation plan does not conform to the statutory requirements.

82 Colo. Rev. Stat. §34-32-112(2) requires the application to include a legal description, the owner of the surface and substance to be mined, the source of the legal right to enter and mine, the applicant’s phone number and address, a description of the proposed operation, the size of the area to be worked, and the timetable for the various stages of the mining operation.
accuracy of the information submitted by the applicant. This created little incentive for SCMCI to submit accurate baseline data. This lack of baseline data resulted in little or no existing water quality data and erroneous climatological data. Most cyanide mining processes are intended to operate as a closed loop system, therefore accurate climatological data is especially important.\textsuperscript{83}

The permit process was also faulty. Neither the regulations nor the permit prohibited winter construction of the heap leach pad and liner.\textsuperscript{84} The regulations did not set forth any guidelines for liner construction. If the pad had not been hastily constructed during winter months, it might not have failed since it was the winter construction that caused the tears in the liner. Although the statute, regulations and permit all required

\begin{verbatim}
2 Colo. Code Regs. 407-1 (Rule 2.1.2 (8)-(12) (1977)) requires more specific information including: a legal description, a regional map, general information on surface owners, buildings, topography, vegetation, a general description of the mining method to be used, a plan for reclamation which should be specific for final grading, seeding, fertilizing, revegetation and topsoiling, a statement of whether the operator expects to affect surface or ground water, a description on the types of wildlife and vegetation in the vicinity, a description of the climate and the operator’s expected reclamation costs.
\end{verbatim}

Barilla, James J."Montana’s Cyanide Leach Experiment: Learning From Bitter Experience" at 5, M.S. Thesis, University of Montana, 1995. Heap leach processes involve removing the ore from the earth, crushing, and spraying it with a barren cyanide solution which leaches the gold from the ore. The gold enriched cyanide solution is then pumped into a “pregnant” pond to remove particles of gold. Once the gold is removed, the cyanide solution is pumped back into the pond containing barren solution for reuse. Theoretically, evaporation accounts for the only loss of solution. The rate of evaporation determines the quantity of water which must be fed into the system. The rate of precipitation must also be determined in order to plan for adequate storage of excess water entering the system.

approval before SCMCI made any changes to the permitted conditions, SCMCI did not provide the information, nor did the agency enforce these provisions.\textsuperscript{85}

Regulations existing at the time did not require adequate inspections, quality assurance, or guidance on how to deal with conditions involving noncompliance.\textsuperscript{86} Nor did the regulations require consultants to report any noncomplying installation or emergency situations. In the case of noncompliance, only MLRB had the authority to issue a cease and desist order, and then it was permitted only if the Board determines that a violation has occurred.\textsuperscript{87} Further, what authority the MLRB did have, it failed to exercise. Not only did MLRB fail to issue an administrative order to SCMCI when it learned of the noncomplying situations, but DMG failed to recommend the order.\textsuperscript{88} In the midst of this snowballing situation, the Colorado legislature cut the Department’s funding

\textsuperscript{85} 2 Colo. Code Regs. 407-1 (Rule 1.9) (1977) states: “Technical revisions are acceptable” and is defined as “a change in the permit which does not have, in the judgment of the Board, more than a minor effect on reclamation.” However, prior to implementation of any proposed revision, technical revisions must be submitted in writing to the Division. The Board will then meet and has the discretion to determine whether an amendment must be filed. According to the statute, if a revision or amendment does not violate specific terms, it must be granted. Colo. Rev. Stat. §34-32-115(4) (1976).

\textsuperscript{86} 2 Colo. Code Regs, 407-1 (Rule 8.1 (8)) states: mining operations will be inspected a sufficient number of times each year to insure compliance with the permit, law, and these rules. 2 Colo. Code Regs. 407-1 (Rule 8.22) (1977) gives authority to the Board to determine if a violation has occurred. Specifically, the rule states: “Following a determination of reason to believe a violation exists, the Board shall hold a hearing on whether or not there is a violation.”


\textsuperscript{88} McNamara, supra note 84 at 10394.
by 50%, further complicating the circumstance by reducing the Department's financial
and human resources. 

Finally, the bonding was severely inadequate for this type of operation. The
amount of bonding required was based on the operator's estimated cost of reclamation.
SCMCI clearly could not meet this requirement. SCMCI's original bond included
$1,304,509 in addition to the salvage credit bond of $913,801. This inadequate bonding
created little incentive for SCMCI to bring the mine into compliance which further
weakened the regulator's bargaining position. The inadequate bonding further
contributed to the continuing operations of a site that should have been brought into
compliance before it was ever allowed to begin operations.

However, there is hope for future Colorado mining sites after the Summitville
disaster. Colorado has radically amended their laws governing mining in the effort to
avoid a repeat of such a problem.

---

89  Ibid., 10395.
91  McNamara, supra note 84 at 10397. The salvage bond credit was allowed by statute
(Colo. Rev. Stat. § 34-32-117 (1976)) whereby the bond was secured by on-site mining
equipment. This equipment was subject to county tax liens and was needed for clean up
actions on site. As a result, it was nearly valueless.
IV. Changes Colorado Made To Strengthen Its Law:

Subsequent to the Summitville mine disaster, Colorado made changes to its Mined Land Reclamation Act in an effort to avoid a similar occurrence. Many of these changes were made to provisions concerning permitting, bonding, and agency involvement and oversight.

Permitting:

One amendment which was obviously a reaction to the Summitville situation relaxed the time frame in which a permit must be approved or denied. This provision still requires that an application for a permit be granted or denied within 120 days or it will be deemed approved. However, that time constraint may now be extended if the board needs additional time for public hearings, unforseen circumstances, or if significant snowfall prevents a necessary on-site inspection. This provision would have allowed DMG to postpone approval of SCMCI’s permit until spring, giving them the chance to inspect during construction of the liner.

The Colorado Legislature also provided that the Board or the Agency may condition the permit on inspections or certifications during its construction. This provision allows a prohibition on subsequent phases of construction or operation until required inspections have been performed by a qualified professional and the requisite certification has been obtained. Had this provision been in place at the time SCMCI

---

applied for its permit, the MLRB or DMG could have required documentation concerning
the climate and other factors at the site from a qualified professional,94 rather than merely
accepting SCMCI’s statements as correct. DMG could have also inspected the liner
during its construction and may have noticed the tears. Other changes now give the
Board the authority to impose new regulations on existing permit holders if a failure to do
so would pose a reasonable potential for danger to persons or property or the
environment.95

The new provisions also take the burden off the Board and places it on the
applicant to show that they are in compliance with all permit requirements.96
Specifically, rather than requiring the Board to look for noncompliance, the Board may
require the applicant to prove that they are in compliance and may deny a permit if all the
statutory and regulatory requirements are not met. The now reads that the Board may not
deny a permit on certain conditions (set forth in the statute) if the operator demonstrates
compliance with those conditions.97

94 Colo. Rev. Stat. § 34-32-112(4)(a) (1993) states that these documents be prepared by a
"professional land surveyor, professional engineer, or other qualified person. The
corresponding regulations are not more specific. Although these “qualified
professionals” will likely be hired by mining companies, they will usually want to protect
their reputation and submit accurate data. For example, SCMCI’s consultants did not
agree with SCMCI’s winter construction of the liner. It is not likely that these consultants
would put their reputation on the line and certify something they do not believe is correct.
97 Colo. Rev. Stat. § 34-32-115(4) (1993) states that the board or the division shall not
The amendments now require an applicant to plan for environmental protection by requiring all designated mining operations to submit an environmental protection plan which is enforceable by the Board or the Agency. However, the agency must take into account the economic reasonableness, technological feasibility, and the level of environmental concerns. This environmental protection plan is developed further in the regulations. Having an environmental protection plan may have mitigated the emergency by planning for it in advance. At the very least, it may have assisted the EPA when they took over the site. This provision also requires the applicant to consult with the Division of Wildlife before a permit will be granted.

**Bonding:**

The legislature also strengthened the bonding requirements. The Board may still accept title to real or personal property as a financial warranty to the extent of a specified

---

deny a permit if the operator demonstrates compliance . . . . The former provision stated that the "board shall grant a permit to an operator if the application complies with the requirements . . . ." The amended version places the burden of proof on the operator to demonstrate compliance. The former version placed the burden with the agency to prove that the operation was not in compliance. This change should reduce the agency’s work load by requiring the operator to do the legwork to demonstrate compliance. The proof required by this provision will be determined by the agency and the situation. Unless the agency has first hand knowledge of every aspect of the proposed mining operation, it will be difficult to know whether an applicant has falsified the documentation. It may be safe to assume that this law, like most laws, must trust (to a certain extent) the applicant to submit honest information.


99 Neither the statute Colo. Rev. Stat.§34-32-116.5 (1993) nor the regulations 2 Colo. Code Regs (Rule 6.4.20(1)(d) (1995)) defines the terms "economic reasonableness, "technological feasibility, or "the level of environmental concerns." This provision will likely be interpreted by the agency.
percentage of the property. However, the Board may refuse to accept any form of financial warranty for various reasons. This provision would have allowed the Board to refuse to accept as financial warranty the heavy machinery used at the mine and subsequently used during clean up operations.

**Agency Oversight and Enforcement:**

Any person who is engaged in a mining operation must now notify the Agency of any failure or imminent failure of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons, property, or the environment. This provision would have required SCMCI to have made more frequent notifications to DMG. As a result, DMG may have inspected the site more frequently, or at the very least, would have been informed sooner about the shortcomings of the mine's operations. Had this requirement been in effect during Summitville's operation, DMG would have not only been notified after the first cyanide solution was detected under the liner during the summer of 1986; and either before or after the nine cyanide spills that were caused as a result of the pump failure during the summer of 1987. Although this may not have made a difference at Summitville, it appears that the intent behind this requirement may be to help prevent or mitigate a failure that seems imminent by involving the agency sooner.

If a notice of violation is warranted, the Board as well as the agency now has

---

authority to issue the notice to the operator. However it is still the ultimate decision of
the Board to determine if a cease and desist order is warranted.\textsuperscript{102} In case of emergency,
the Board or agency is allowed to take such emergency action if needed.\textsuperscript{103}

\begin{flushright}
\textsuperscript{102}
\end{flushright}

\begin{flushright}
\textsuperscript{103}
agency may: establish an Emergency Response Team; enter properties to take necessary
emergency, safeguarding and corrective measures; issue a cease and desist order; apply
for a temporary restraining order or a temporary or permanent injunction; use the
operation's bond money to take the emergency action. 2 Colo. Code Regs. 407-1 (Rule
\end{flushright}
V. Changes in Colorado’s Regulations:

MLRB and DMG made extensive changes to the regulations as a result of the Mined Land Reclamation Act’s amendments. Many of these changes were made in the areas of permitting, bonding, and agency oversight and enforcement.

**Permitting:**

Initially, the rules now forbid an operator from converting a limited impact permit to a regular permit unless the operator has held the permit for at least two years.\(^{104}\) SCMCI began with a limited impact permit and converted to a regular permit within a matter of months. This two year period would have given SCMCI the time to get to know the area and test some of their assumptions which ultimately led to the disaster. For example, recall that SCMCI converted its limited impact permit (limited test pit and leach pad permit) into a full scale mining permit within a few months. Had SCMCI been required to wait for two years, they would have learned that their climatological data was not correct and would have been required to plan for the correct conditions in the area.

The new rules also require all tests, analyses, surveys and maps be prepared by qualified persons, and that all information must be certified by the applicant to be accurate and complete.\(^{105}\) This requirement may or may not have provided SCMCI and DMG with better baseline data for the site. Since the documents must be prepared by qualified persons and certified by the applicant, SCMCI may have had more incentive to

---


heed the consultant's advice throughout their construction and operations.

The new rules require the applicant to provide detailed exhibits which must describe the area, neighboring owners, the characteristics and landmarks of the surrounding area, the total area to be included in the operation; vegetation, water and soils information; and the mining method to be utilized. The operator must include specifics such as the nature, depth, and thickness of the ore to be removed, and the nature of the stratum immediately beneath the material. The operator must also submit a reclamation plan that specifically describes all planned reclamation activities, and provide specific information on all the characteristics currently existing at the site including specific climatological data. This information must be certified by a qualified professional.

The requirement to submit specific climatological data would have forced SCMCI to determine the water balance at the Summitville site rather than allowing them to assume that the precipitation and evaporation rates were the same as the Wolf Creek site. This would have reduced the excessive water loading in the heap leach pad caused by the erroneous climatological data.

The new rules also set forth specific application requirements for reclamation, inspection and monitoring. These new rules include specific requirements for backfilling, specific and detailed performance standards and other requirements for surface and

---


107 2 Colo. Code Regs. 401-1 (Rule 6) (1995). Although the qualified professional may be a consultant hired by the mining company, these professionals will usually protect their own reputation as discussed in note 94, supra.
ground water protection. The operator must also provide information sufficient to calculate the costs of reclamation, which must also be approved by the Board. This latter requirement may have resulted in more adequate bonding of SCMCI.

The new rules explain what is required in the Environmental Protection Plan which must be submitted with the application. This plan is intended to ensure that the operator will comply with all provisions of the Act and to protect all areas that have the potential to be contaminated. In determining whether a plan is sufficient, the Board considers the operator’s leaching facilities, tailings, impoundments, waste rock piles, stock piles, and land application sites. In creating this plan, all permits must be accounted for, all chemicals inventoried, evaluated, and handling and disposal methods identified.

The applicant must show that they have evaluated all natural and man-made conditions, climatic and geochemical data, construction schedule, geotechnical stability, surface and ground water resources and provide monitoring plans. These evaluations must all be certified by professionals in each respective field. A corresponding rule disallows an operator from ceasing operations without first complying with the Reclamation and Environmental Protection Plan.

111 See note 94, supra.
In Summitville’s case, this pro-active approach would have required the operator to consider the climatological data in connection with the leach pad. The operator would have also had to consider the possible consequences that would result from constructing the pit directly over the adits, and placing the ore on top of spring fed bogs.

**Bonding:**

The new rules also provide for more realistic bonding requirements. They now require that all financial warranties be set and maintained at an amount which reflects the actual and current costs of reclamation plus 5% for administrative costs in overseeing the reclamation.\(^{113}\) These new bonding requirements also allow the Board to accept interests in real or personal property only to the extent of 85% of the estimated value.\(^ {114}\)

Recall that SCMCI’s bond was less than 5 million dollars at the time operations ceased. Much of the mine’s bond was in the form of an equipment salvage bond which was overestimated after taking into account that most of the equipment was subject to a state tax lien and was needed for reclamation purposes. Recall also that the reclamation costs for the site are in the neighborhood of 120 million dollars. Had this rule been in effect at the time Summitville was permitted, the Board would have been required to obtain a much larger sum of money to satisfy the bonding requirement rather than relying on the salvage credit from the mining equipment. Even though the bond would have been


\(^{114}\) 2 Colo. Code Regs. 401-1 (Rule 4.9) (1995). This rule requires that the financial warranty be submitted as to show clear title to the property and the current appraised value in a form approved by the Board. An appraisal must be prepared by a qualified independent appraiser.
greater under this requirement, it would probably not have resulted in a bond requirement of 120 million dollars since no one foresaw the disasters that eventually occurred.

Agency Oversight and Enforcement:

The rules have been amended to give the agency more control over liner construction. One rule requires that liners may not be installed except in areas where climatic conditions are within the design and manufacturer recommendations, and they must first be accepted by the agency. This would have required SCMCI to use better installation procedures which would not likely have allowed for winter installation.

Liners must also be sufficient to handle heavy 24 hour storms, and they may not be used until an engineer verifies the liner’s integrity and the Board or agency gives its approval. This requirement would have prohibited SCMCI from using the leach pad prior to completing installation of the liner and a subsequent inspection. Hopefully someone within that process would have noticed the tears prior to approval.

Another rule specifically lists numerous conditions that must be inspected by the agency during a mine’s construction. Many of these conditions involve foundation and liner construction. This would have increased the agency’s involvement with the mine during its construction which should have alerted the agency to the compromised integrity of the leach pad liner.

---

115 2 Colo. Code Regs. 401-1 (Rule 7.3) (1995). This rule does not specify whether the engineer must be an engineer employed by the agency, or whether it may be an engineer employed by the mine. Without such specification, an engineer from either may make that verification.

The new rules also list conditions and times at which an operator must notify the agency that an emergency situation exists.\textsuperscript{117} These new rules require the operator to have an emergency response plan,\textsuperscript{118} authorize the agency to establish an emergency response team,\textsuperscript{119} and sets forth the conditions for which they can take emergency action and recover emergency response costs. Had this requirement been in effect during Summitville's operation, SCMCI would have been required to draft the emergency response plan that may have better prepared SCMCI, the state, or the EPA to respond to the situation.

If a violation occurs, the new rule requires the agency to issue a notice of violation.\textsuperscript{120} This new rule contrasts with the older version where only the Board had the authority to issue a notice of violation. This provision would have allowed the agency to issue a notice of violation from the outset when SCMCI did not comply with the terms of their permit requiring them to notify any changes during construction of the leach pad liner. DMG could have also issued notices of violation for every cyanide spill during operations.

Although Colorado made extensive amendments to its statute and regulations, it can still only go so far. Colorado's permitting process still lacks strong public

\begin{thebibliography}{120}
\bibitem{118} 2 Colo. Code Regs. 401-1 (Rule 8.3) (1995).
\bibitem{120} 2 Colo. Code Regs. 401-1 (Rule 3.2) (1995).
\end{thebibliography}
participation. According to Colorado law and regulations, an applicant must still publish notice of the permit application in a local newspaper. This notice will usually be in sparsely populated areas since most mines locate outside of town. As a result, this notice may be inadequate to provide the public adequate opportunity to become informed about proposed mining operations.

Additionally, the legislature did not provide more funding for the agency. The agency will continue to be hard pressed to oversee mining permitting processes and existing mining operations without proper funding. Nevertheless, Colorado has begun to improve their mining laws and regulations, which now may be some of the strongest in the region.
VI. What Does Montana's StatuteRequire?

Montana's statute, the Metal Mine Reclamation Act (MMRA),\textsuperscript{121} is similar to Colorado's Mined Land Reclamation Act in many ways. Montana's as well as Colorado's earlier statute emphasize post mining reclamation rather than requiring preventative measures prior to granting a permit. This reactive approach is one of the key factors why Colorado's laws were not sufficient to effectively prevent the Summitville disaster. Although Montana's statute requires ongoing reclamation efforts during the mining process, its emphasis still appears to remain with reclamation rather than taking a more pro-active approach.\textsuperscript{122} Both states create "Boards" that oversee the mine permitting process.\textsuperscript{123} The Montana statute gives administrative authority to the Department of

\begin{itemize}
\item \textsuperscript{121} Mont. Code Ann. §82-4-301 et. seq.
\item \textsuperscript{122} Mont. Code Ann. 82-4-302(2) (1971) states:
\begin{quote}
Although both the need for and practicability of reclamation will control the type and degree of reclamation in any specific instance, the basic objective will be to establish, on a continuing basis, the vegetative cover, soil stability, water condition, and safety condition appropriate to any subsequent use of the area.
\end{quote}
\item \textsuperscript{123} Colo. Rev. Stat. §34-32-105-108 (1976) creates a Mined Land Reclamation Board specifically for this purpose. It consists of seven members, all of which are appointed by the governor. Colorado's statute lists the Board's specific duties and powers, and allows the Board to adopt rules and regulations.
\begin{quote}
Mont. Code Ann. §82-4-303(3) (1995) defines the "Board" as that created for the purposes of overseeing the entire Department of Environmental Quality pursuant to §2-5-3502. This Board is also appointed by the governor and consists of seven members. However, the Board’s specific powers and duties are not set forth in as much detail as Colorado's.
\end{quote}
\end{itemize}
Environmental Quality.\textsuperscript{124}

Permitting:

Before a mine can begin operations, it must apply for and obtain an operating permit.\textsuperscript{125} If the Department feels that a more thorough investigation is required pursuant to the Montana Environmental Protection Act found at Title 75, chapter 1, they may require a larger application fee.

The permit application must include information such as:

1) The name and address of the operator;
2) The minerals expected to be mined;
3) A proposed reclamation plan;
4) The date operations are expected to begin;
5) A detailed map showing the specific area and its boundaries;
6) The name and addresses of all record surface and/or mineral owners;
7) Types of roads to be constructed or used and plans to reclaim them;
8) A completion plan;
9) Ground and surface water data gathered from a sufficient number of sources and for an appropriate amount of time;
10) Plans detailing the design, operation and monitoring of impounding structures;


\textsuperscript{125} Mont. Code Ann. §82-4-335 (1995).
11) Plans to monitor for the accidental discharge and plans to remediate
discharges to surface and ground water; and

12) Life expectancies of impoundments and potential for expansion.

Large scale mining operation activities may not commence until a impact study
has been conducted pursuant to §90-6-307.126 The statute prohibits the Department from
issuing a permit to any person who has failed to comply with the rules, failed to post a
reclamation bond or is in violation of any state or federal law relating to air quality, water
quality, or mined land reclamation.

In addition to the above requirements, the operator must also submit a
reclamation plan.127 This plan must set forth specific details on how the operator plans to
control erosion, avoid stagnant water and must include other plans for reclamation. The
operator cannot depart from this plan unless there is an emergency which requires
deviation. This provision sets forth specific long term reclamation requirements that
must be included in the plan for most aspects of mining activities.

Montana's statute also provides the permit will be issued automatically unless the
Department notifies the applicant of deficiencies within 60 days after the application is
received.128 If they fail to make such notification, the permit will issue upon receipt of the

126 Mont. Code Ann. §90-6-307 (1975) provides that an impact study to assess the impacts
to local residents and local governments be conducted before a large scale mine may
begin operations. This study is not an environmental study.


128 Mont. Code Ann. §82-4-337(1)(b) (1995). Unless the Department determines and
bond regardless of the adequacy of the operation or reclamation plan. If the Department does make the required notification, a permit may not be issued until the bond is received, and the site is inspected. If additional time is needed, the Department and the operator are instructed to negotiate for additional time. The Department may deny a permit if the application does not comply with Title 75 chapters 2, 5, and 6 which recognizes the need to ensure that mining operations comply with water, air and public water supply statutes. Additionally, a permit can be denied if the reclamation plan is not acceptable. Amendments to the operating permit will not be granted until reclamation has been conducted on the area for which the amendment has been requested.

Bonding:

If a permit is granted, the statute requires the operator to post a performance bond. The amount of this bond is largely left to the Department's discretion, but can not be less than $200 or more than $2,500 an acre or fraction of an acre of the area disturbed. The Department must also inspect the mine site at least once a year to determine whether the

__notifies the operator of any deficiencies in the application, the reclamation plan, or operating plan within 60 days of receipt of the application, they must issue the permit upon receipt of the bond. The Department may extend this time by not more than 365 days if it is determined that an Environmental Impact Statement is necessary.__

129 Mont. Code Ann. §82-4-351 (1993). This provision requires that the operator comply with Montana's Clean Air Act, Clean Water Act, Public Water Supply Act and reclamation requirements.


operator is in compliance.132 If the operator is not in compliance and does not bring the site into compliance after notification, their bond will be subject to forfeiture. The Department may take any actions necessary to reclaim the land (the costs of which the operator will be liable for), and the operator's permit may be canceled, with the possibility that no permit will thereafter be issued.

Agency Oversight and Enforcement:

One of the most important provisions in Montana's statute gives the Department enforcement authority in case the operator violates the statute, a rule or their permit.133 This provision in Montana’s statute differs from Colorado’s in that it gives the Department a fair amount of authority and direction to deal with a noncomplying operation. The Department also has the authority to enter a site and take any action necessary in the case of an environmental emergency.134 This provision allows the imposition of a civil penalty of up to $1,000 a day, and also allows the imposition of an injunction. If the violation involves imminent danger, the penalty may be as high as $5,000 a day for each violation.

The 1997 Legislature enacted a new provision which further strengthens the Department’s enforcement authority. This new provision allows the Department to bring an action in district court to obtain a restraining order, temporary or permanent injunction

against the operator for violating or threatening to violate an order.\textsuperscript{135} The statute also provides that if the operator harms a landowner's water supply, the landowner will have a cause of action against the operator.\textsuperscript{136}

\textsuperscript{135} Mont. Code Ann. § 82-4-361 (3) (1995).

\textsuperscript{136} Mont. Code Ann. §82-4-335 (1995).
VII. Montana’s Mining Regulations:

Following the Statute’s lead, Montana’s regulations emphasize mined land reclamation rather than pre-mining qualifications. Montana’s regulations also expand on the statute’s requirements of permitting, bonding and agency oversight and enforcement.

Permitting:

The rules set forth the requirements for the permit application. The regulations restate the application requirements found in the statute at Mont. Code Ann. § 82-4-335. The application requires operators to submit annual reports which detail each activity conducted during the previous year including: the amount of land affected, specific information pertaining to soils and vegetation affected, water balance information, excess water storage capacity, all monitoring information, and any acid rock drainage developments.

If an operator wishes to make a change in operations, they must apply and obtain approval in the same manner as if it were a new permit application. The rules allow the department to review a permit at any time during the life of the operation, and require modifications of the reclamation plan.

Montana law lists 10 considerations which must be included in the reclamation

plan (but only to the extent practical at the time of the application). The reclamation regulations that accompany this part of the statute further clarify what the reclamation plan must include.

**Bonding:**

The rules also explain the bonding requirements. The amount of bonding required is calculated by the department based on the estimated costs to the department if it had to perform the reclamation, contingency procedures and associated monitoring activities. The bond amount may be reviewed and revised if the operation or reclamation standards change. At any rate, the bond amount must be reviewed every 5 years. The Bond may be in the form of a surety bond or a collateral bond, a Certificate of deposit of not less than $100,000, or an irrevocable letter of credit from a banking institution.

---

141 Mont. Code Ann. § 82-4-336 (1995). These requirements include plans for reclamation during mining operations, controlling erosion, emergency situations, final grading, open pit reclamation, vegetative cover, utility and stability of reclaimed lands, permanent landscaping, and department approval.

142 Mont. Admin. R. 26.4.106 (1994). This provision restates what is required by statute and describes in detail the types of activities that are considered complying.


Agency Oversight and Enforcement:

The rules appear to encourage agency personnel to become fairly involved with ongoing operations. The department is required to inspect all permitted operations at least once per year. However, operations that use cyanide, have the potential for acid rock drainage, or are larger than 1000 acres must be inspected at least once per quarter.\textsuperscript{148}

The rules also explain the department's enforcement authority. The department is allowed to issue a notice of noncompliance to any facility that is in violation and initiate suit to collect the penalty. However, this provision requires that the department give the operator 10 days to correct any violation.\textsuperscript{149} If the violation has not been abated, the department must issue an order of abatement and a permit suspension order, then give the operator 30 days to comply.\textsuperscript{150}

The department also has the authority to assess fines on the operator based on certain criteria including: history of recent noncomplying instances, the seriousness of the violation, negligence, and good faith.\textsuperscript{151} This provision also allows the department to modify or waive the penalty under certain circumstances such as if the department finds that the penalty is demonstrably unjust or inadequate as a deterrent.

The rules allow the commissioner to immediately suspend a license or permit

\textsuperscript{149} Mont. Admin. R. 26.4.107M (1994).
\textsuperscript{151} Mont. Admin. R. 26.4.107O (1994)
under certain circumstances. These circumstances include: 1) those which pose imminent
danger or health to persons outside the permit area; 2) after a hearing, suspend a permit if
the operation is reasonably expected to harm persons outside the permitted area or harm
the environment; or 3) if a violation is still not abated.\textsuperscript{152}

VIII. Comparison of Montana’s and Colorado’s Statutes and Regulations:

MLRA vs. MMRA:

Although Montana’s Metal Mine Reclamation Act requires more in terms of environmental protection than did Colorado’s prior Mined Land Reclamation Act, Colorado’s recent amendments appear in some instances to provide greater environmental protection than Montana’s. These differences may be found primarily in the areas of permitting and enforcement.

Permitting:

Colorado’s latest version requires more specific information from the operator prior to permitting. As mentioned above, Colorado now requires specific exhibits, detailed climatological data, soil, vegetation, water, and area characteristics, as well as planned reclamation activities and associated costs. As part of Colorado’s application process, the applicant must also submit a detailed Environmental Protection Plan (discussed above).

In contrast, Montana’s statute has three permitting requirements: 1) baseline data for the surrounding area; 2) an operating plan; and 3) a reclamation plan. Montana may benefit from requiring the operator to submit site specific data as Colorado has done. As it would have helped Colorado, this may also help Montana in ensuring accurate data such as the area’s water balance, unoxidized ore and soil conditions.

Montana does not require, but may benefit from a requirement for the applicant to submit an Environmental Protection Plan similar to that required by Colorado. This EPP would include an Emergency Response Plan and would require protection from any
chemicals or contamination associated with the operation. Just as it would have helped SCMCI prepare for emergency situations, it would also help mines in Montana mitigate or prepare for similar occurrences. Although both states appear to require similar information prior to issuing a permit, Colorado’s statute has shown a good deal of foresight with the requirement that the applicant provide precautions in case of an emergency with the Environmental Protection Plan.\footnote{153}

After the applications have been submitted and deemed complete, the state agencies’ procedures differ. Colorado requires the agency to make a final decision within 120 days unless unforeseen circumstance exist such as heavy snow cover, or if the application is complex.\footnote{154} If the applicant shows that all requirements have been met, the Board must issue the permit. Although this added flexibility will help to ensure that the agency and the Board has more time to review the application and proposed area, it remains to be seen if it allows enough time for adequate review.

Montana potentially has a shorter time frame in which to approve or deny a permit application. After the application has been submitted, the agency has 60 days in which to determine whether it is complete.\footnote{155} The agency does not begin the review until the application is deemed administratively complete. After the agency makes this

determination, the permit is subject to review under MEPA.\textsuperscript{156} When MEPA review is complete, the agency has 30 days to render their final decision. As a result, if an EIS is not conducted on the permit application, the agency will have only thirty days to review the permit after it is deemed administratively complete. If the agency fails to render this final decision, the permit is issued by default when the applicant tenders the required performance bond.

Although both states require that the site be inspected prior to and after commencing operations, the states have different approaches. Colorado law requires that the site be inspected during its initial construction.\textsuperscript{157} The agency can prohibit subsequent phases of construction until an agent inspects the previous phase. This allows the agency to be involved with and approve of all phases of construction, which may help to identify inadequacies. Once construction is complete and the mine is in operation, Colorado requires that the site be inspected a sufficient number of times each year to insure compliance. The frequency of inspections are determined by the operation’s extent and the operator’s compliance history.

Montana does not have a similar provision but could benefit from allowing the

\textsuperscript{156} One could argue that Montana’s Mined Land Reclamation Act need not be as specific as Colorado’s as a result of its Montana Environmental Protection Act (MEPA) found at Mont. Code Ann. 75-1-201. According to MEPA, before the state may issue a permit for a mining operation, it must conduct an environmental assessment and determine if the operation would significantly affect the quality of the human environment. If so, an environmental impact statement would have to be drafted which would study and make public the possible effects. However, more specific language in the MMRA would be favorable since there is no guarantee that an EIS would be conducted.

agency to prohibit subsequent construction phases if prior phases have not been inspected. By encouraging, if not requiring the agency to become involved during construction of the mine, the agency may see inadequacies before they become serious problems as we saw with Summitville's faulty liner. However, Montana requires that each operating mine be inspected at least once per year, and quarterly for those mines using cyanide. Montana's law seems in this instance to be better in that it ensures a minimum number of inspections per year. The agency can then choose to inspect more frequently if conditions warrant.

**Enforcement:**

Colorado and Montana also have differing enforcement philosophies. According to Colorado law, the agency can issue a notice of violation, but only the Board has any effective authority. If the operator wishes to challenge a notice of violation they are entitled to a hearing by the Board who then makes a determination of whether a violation has occurred. Only the Board can issue a cease and desist order, suspend, modify or revoke a permit. Colorado has also given the agency the authority to take emergency action if needed and seek reimbursement from the operator for associated emergency costs.

Montana, on the other hand, has given more authority to the agency than has

Colorado. DEQ is authorized to issue a notice of noncompliance, and after giving the operator sufficient due process and time to correct any deficiencies, DEQ can suspend the permit.\textsuperscript{161} This method is probably more efficient and may avoid environmental harms because those directly involved can take the necessary action, rather than having to go to the Board. DEQ also has the authority to enter a site in case of emergency for abatement. DEQ must apply to the governor for public funds to cover the costs of such abatement.\textsuperscript{162} Colorado’s method of seeking reimbursement from the operator may provide for better protection in this case. Requiring the agency to apply to the governor may be an incentive to not take action if the agency perceives that the governor may not approve funding.

\textsuperscript{161} Mont. Code Ann. § 82-4-361 (1995).

\textsuperscript{162} Mont. Code Ann. § 82-4-357 (1991).
Colorado. DEQ is authorized to issue a notice of noncompliance, and after giving the operator sufficient due process and time to correct any deficiencies, DEQ can suspend the permit.161 This method is probably more efficient and may avoid environmental harms because those directly involved can take the necessary action, rather than having to go to the Board. DEQ also has the authority to enter a site in case of emergency for abatement. DEQ must apply to the governor for public funds to cover the costs of such abatement.162 Colorado’s method of seeking reimbursement from the operator may provide for better protection in this case. Requiring the agency to apply to the governor may be an incentive to not take action if the agency perceives that the governor may not approve funding.

Regulations:

The states' regulations differ somewhat in the amount of detailed guidance they provide to the agency. These differences are found primarily in the areas of the agency's involvement during construction, the Environmental Protection Plan, and inspections.

Construction:

Colorado's Board has promulgated new rules that direct the agency to be involved during each phase of construction. This rule states that construction work must be carried out in phases. Operators are not allowed to begin work on any subsequent phase of the facility without first obtaining acceptance.

In addition, the regulations require a double walled liner over any surface which may potentially come into contact with a cyanide solution. All liners must be approved by the agency and must be compatible with surface and climatic conditions. Leak detection systems are also required for all liners. As soon as operations commence, liners must be monitored on a daily basis until it is apparent that there are no problems with the liner. After this initial daily monitoring period, monitoring may be reduced to a weekly schedule.

Montana's rules have no provisions directing the agency to oversee construction

---

or requiring adequate or even approval of liners. This lack of direction may potentially allow an applicant to commence construction of a facility with little to no agency oversight. As seen with Summitville’s lack of agency involvement during construction, this involvement may be critical in order to identify serious problems which otherwise may go unnoticed.

**Environmental Protection Plan:**

Colorado has taken an extra step to be more pro-active in their approach to safe mining operations by requiring the Environmental Protection Plan. The Environmental Protection Plan requires an operator to describe how the operation will comply with the Act and rules in order to protect all areas that may be affected by certain chemicals, toxic or acid forming materials or acid mine drainage. This plan will include descriptions of how the operator will manage leach facilities, tailings storage or disposal areas, impoundments, waste rock piles, stock piles, and land application sites. Under this plan, the operator must list all designated chemicals (including acid mine drainage) and describe their effect on humans and the environment, determine their environmental fate, describe the use, handling and disposal practices, and how the operator intends to prevent adverse off-site impacts of those chemicals and acid drainage. This is a very detailed analysis which accounts for potential impacts on all media.

In addition to determining the effects of chemicals and acid drainage, the operator must also prepare an Emergency Response Plan as per the Environmental Protection Plan.

---

Plan. The Emergency Response Plan describes the procedures the operator will take in the event of an emergency situation involving the chemicals (including acid drainage) listed in the Environmental Protection Plan.

Montana has no rule that is similar to Colorado’s Environmental Protection Plan. One might argue that an Environmental Assessment or Environmental Impact Statement under the Montana Environmental Protection Act would address many of these concerns. Although, if an Environmental Impact Statement were prepared, many of these concerns might be addressed, it would be advantageous to have a plan in place in case an emergency situation arose. Also, there is no guarantee that an Environmental Impact Statement would be required. Therefore, Montana would benefit from a similar provision.

Agency Inspections:

The number of times the agencies’ are directed to inspect an operation also differs between the states. Colorado directs the agency to inspect an operation as often as conditions require. This regulation states that “the frequency of inspections shall be determined by the extent of the operation, rate of mining degree of actual or potential environmental impact, and the Operator’s past record of compliance.” This leaves a lot of room for agency discretion. It has the potential to allow a noncomplying condition to

\[\text{\footnotesize 169} \quad 2 \text{ Colo. Code Regs. 407-1 (Rule 3.2.8) (1995).}\]

\[\text{\footnotesize 170} \quad 2 \text{ Colo. Code Regs. 407-1 (Rule 3.2.8) (1995).}\]
go unnoticed for an indefinite period of time. Although Colorado gave clear direction for inspections during construction, they appeared to have not given that same direction for operating facilities.

Montana on the other hand has given clear direction to the agency to oversee operating facilities. The regulations state that “the department must conduct inspections at least once per year for each permitted operation; and at least once per quarter for each active operation that (i) uses cyanide; (ii) has a permit requirement to monitor for potential acid rock drainage; or (iii) exceeds 1000 acres in permit area.” In this instance, Montana has given the agency much clearer direction to ensure that a potential noncomplying condition does not go unnoticed.

<table>
<thead>
<tr>
<th><strong>Colorado</strong></th>
<th><strong>Montana</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Permitting:</strong></td>
<td><strong>Permitting:</strong></td>
</tr>
<tr>
<td>1. Specific, detailed information.</td>
<td>1. General info. on surrounding area.</td>
</tr>
<tr>
<td>2. Planned reclamation &amp; costs.</td>
<td>2. Reclamation Plan, up to $2,500/acre.</td>
</tr>
<tr>
<td>3. Environmental Protection Plan.</td>
<td>3. No comparable provision.</td>
</tr>
<tr>
<td>4. 120 days to approve/deny, flexible if conditions warrant.</td>
<td>4. 60 days to approve/deny if no EIS.</td>
</tr>
<tr>
<td>5. Specific liner requirements.</td>
<td>5. No specific liner requirements.</td>
</tr>
<tr>
<td><strong>Inspections:</strong></td>
<td><strong>Inspections:</strong></td>
</tr>
<tr>
<td>1. Phased construction inspections.</td>
<td>1. No construction inspections.</td>
</tr>
<tr>
<td>2. Compliance inspections when needed.</td>
<td>2. Quarterly inspections for mines using cyanide.</td>
</tr>
<tr>
<td><strong>Enforcement:</strong></td>
<td><strong>Enforcement:</strong></td>
</tr>
<tr>
<td>1. Agency can issue an NOV.</td>
<td>1. Agency can issue an NOV.</td>
</tr>
<tr>
<td>2. Board has authority to suspend, modify or revoke permit.</td>
<td>2. Agency can suspend permit.</td>
</tr>
</tbody>
</table>
IX. Montana’s Regulatory Enforcement History:

Even in a state with fairly stringent laws and regulations governing the mining industry, if the responsible agency does not enforce those laws, a Summitville type disaster can result. Enforcement in Montana has historically been somewhat lax, and environmental degradation has been the result.

An example of the State of Montana’s regulation over mining involves the Zortman-Landusky mines, the biggest Mining complex in Montana. They are located in the Little Rocky Mountains in North Central Montana.

Tribal members on the Fort Belknap Reservation contend that much of the land on which the mine sits was originally part of the land granted to them under a treaty from the U.S. government. They allege that when gold was discovered on the land in 1893, the government coerced them out of that portion of the land. The result has been what they see as the destruction of the areas they consider sacred, including "Spirit Mountain" which is now where the Zortman-Landusky "Gold Bug" pit is located.

Zortman Mining Inc., has operated two gold mines at this site since 1979 (since its initial permit, the mine has expanded ten times and no EIS was completed until 1995). However, the area has been mined extensively since 1889. Under its current permit

172 Patrie, William C. “Zortman-Landusky: A Cyanide Heap Leach Mining Travesty” at 8. The Dry Times (Spring 1995).

173 Patrie, supra note 172 at 8.

174 Patrie, supra note 172 at 8. An EIS was initiated for ZMI’s original permit in 1979, but was never completed. No EIS’s were ever conducted for the subsequent expansions.
which expires in 2005, the Zortman mine consists of 961 acres of which 401 acres are disturbed. The Landusky mine consists of 1,287 acres, of which 814 are disturbed.

ZMI has recently applied for an expansion permit. In its proposed expansion, ZMI has requested adding another 955 acres to the mine area, of which 597 belong to the Bureau of Land Management. As part of this expansion, ZMI has requested permission to widen the edge of the pits about 600 feet and deepen existing mine pits approximately 500 feet. This is of special concern to the tribal people on the Fort Belknap Reservation because as the mine goes deeper, more acidic ore may be disturbed. This acidic ore increases the risk of acid mine drainage which could contaminate the tribes’ water supply.

The mine has had past environmental problems. One source has determined that the mine disturbs 100 tons of ore to produce 1.6 ounces of gold.¹⁷⁵ The mine has also had a problem with acid mine drainage, and their heap leach procedure has failed, contaminating water supplies. A history of past, unenforced violations include the following:

1) In the early 1980s a small water supply was contaminated with cyanide, which the company had to replace and pay a $15,000.00 fine.¹⁷⁶

2) In 1990, the state directed the operator to place unoxidized material in lined heaps along with the ore. This was an attempt by the state to reduce the threat of acid drainage by containing the effluent the material would produce. The

¹⁷⁵ Lange, Ted “Big Problems at Montana’s Biggest Mine” The Plains Truth (Fall 1993) at 3.

¹⁷⁶ Patrie, supra note 172 at 8.
company chose to place the material in unlined, uncovered heaps of other sulfide bearing material. The Department of State Lands allowed them to continue this practice until sulfuric gas began emitting from the piles.\textsuperscript{177} 

3) Investigations began in 1991 by state and federal agencies to analyze the potential pollution problems at the mine sites. They found four pollution discharges at the Landusky site, and three at the Zortman site. The Landusky site, as it is closer to larger populations, is considered the worst of the two. AMD is the primary problem, and cyanide has been detected in the groundwater in one area.\textsuperscript{178} 

4) In 1992, the state discovered substantial acid rock drainage at the site. This problem occurred as a result of the permitting process. The company failed to identify the potential for exposing unoxidized ore. As a result, the operator used this unoxidized material to construct heap leach pad berms and other unlined structures.\textsuperscript{179} Once the operator had determined what had occurred, they chose to

\textsuperscript{177} Barilla, supra note 83 at 16. Although at this point the state was attempting to minimize the potential acid rock drainage problem, no reclamation provisions for unoxidized waste ore were included in the initial Zortman-Landusky permit. 

\textsuperscript{178} Lange, supra note 175 at 2. 

\textsuperscript{179} Barilla, supra note 83 at 14. The state has utilized the "acid-base accounting" procedure to determine acid generating potential. This procedure involves taking numerous core samples and determining the amount of acid producing rock versus the amount of rock that buffer acids. This procedure has been less than accurate for various sites including the Zortman-Landusky mine.
remove some of these facilities and install a pump-back system to catch the acid
drainage rather than to replace or cap the material.\textsuperscript{180}

5) In 1993, inspectors watched as two dump trucks filled with unoxidized ore
dumped their loads into unlined waste rock piles.\textsuperscript{181}

6) In July, 1993, citizens sent notice of their intention to file a citizen's suit,
followed by The EPA's notice of violation of the Clean Water Act. It appears
contamination from the mine has been detected in every drainage at the mine. In
August, 1993, DHES filed suit against ZMI for 25 violations of the State's Water
Quality Act.\textsuperscript{182}

7) In September, 1993, a pond at the mine began leaking. Although reported, the
leak continued for nearly three weeks before the cause was determined to be faulty
seams in the liner. State officials estimate that approximately 10,000 gallons of
cyanide solution escaped as a result of the leak.\textsuperscript{183}

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{180} Barilla, supra note 83 at 24.
\item \textsuperscript{181} Barilla, supra note 83 at 16. The state had specifically required that waste materials be
seggregated, and that no sulfide bearing waste be placed in the dump. In many instances
mixing of these materials occurs as a result of misidentification.
\item \textsuperscript{182} Lange, supra note 175 at 2.
\item \textsuperscript{183} Barilla, supra note 83 at 13.
\end{enumerate}
\end{footnotesize}
8) In 1992, an intern with the Mineral Policy Center investigated the Department of State Land’s files and discovered 31 violations of ZMI’s permit. None of these violations have resulted in any enforcement.\footnote{Patric, supra note 172 at 9.}

9) In June, 1995, the EPA filed suit in U.S. District Court to stop ZMI from discharging wastewater containing cyanide and heavy metals into drainages of the Milk River. Much of this discharge has occurred as the result of failed containment systems. Although containment systems were set up, one investigation revealed that discharge from the seeps were overwhelming the system at a rate of 2-500 gallons per minute.\footnote{Consolidated Consent Decree, Civil Action No. 95-95-BLG-JDS and 95-96-BLG-JDS. Claimants include the United State of America on behalf of the Administrator of the United States Environmental Protection Agency, the State of Montana, the State of Montana Department of Health and Environmental Sciences (now DEQ), the Gros Venture Tribe, Assinibone Tribe, Fort Belknap Community Council, and Island Mountain Protectors.}

As the result of Zortman Mining’s continuing violations, various parties filed suit on the grounds of numerous violations of the Federal Clean Water Act and Montana’s Water Quality Act.\footnote{Ehli, Nick “EPA Sues Zortman Mining” The Billings Gazette (6/7/95).} After over two years of negotiating, the parties reached an agreement which was integrated into a Consent Decree that will bind all parties. According to the Consent Decree the mining company will pay substantial penalties and undertake numerous projects to improve the community and to improve their operation.
Required projects include: devising a storm water management plan; a groundwater study plan and work plan which must bring them into compliance with primary drinking water standards; a community health evaluation which studies the potential impacts of environmental contaminants on residents of the reservation; an aquatic study which will evaluate the general health of aquatic resources on the reservation; a water system improvement project that will improve local water supply systems; and the mine must submit updated NPDES applications for all discharges at the mine.

The mining company must also pay substantial penalties and costs. These include: $2,000,000 civil penalty to the United States and the State of Montana; DEQ's costs and expenses in the amount of $90,000; the community health evaluation project in the amount of $325,000; the aquatic study in the amount of $250,000; the water system improvement project in the amount of $915,000; payment to the tribes of $1,000,000 in partial satisfaction of their aboriginal water rights claim; and increase their current bond by $32,300,000.

As a result of these lawsuits, the Zortman Mining Company has been saddled with some significant costs for non-compliance. It will be a matter of time before we know if the court ordered amount of money will adequately address the problems associated with the mine. In any case, the outcome of these cases will help to ensure that the environment and the people of Montana will be better protected than those in Colorado.
X. How Likely is a Summitville type Disaster in Montana?

After reviewing Montana’s statute, regulations, and enforcement history, it appears that a mine could slip through the cracks as Summitville did in Colorado. It appears that Montana law’s shortcomings fall primarily under permitting and enforcement. Initially, Montana does not require the operator to provide many specifics to the agency. Similar to the Summitville permitting process, the large mines in Montana were not required to submit complete baseline data in the past.  

As discussed above, the applicant must provide the agency with general information about the proposed mining operation and submit a reclamation plan. This is what was required of the Zortman-Landusky Mine. As we have seen, the data submitted with the application was probably insufficient as they were allegedly unaware of the unoxidized ore they later encountered. Montana would likely benefit from implementing on-site baseline requirements similar to Colorado’s. Specific on-site baseline data would help mining companies to learn the exact conditions they will be working with. Accordingly, the mining company and the state will be better informed and prepared for the mining operation.

Rather than taking a pro-active approach, Montana continues to place the emphasis on reclamation. Without encouraging or requiring agency oversight during the initial phases of construction, a mining operation might be allowed to commence mining

---

Barilla, supra note 83 at 19. Barilla studied the Zortman-Landusky mine, the Golden Sunlight mine the Kendall mine, and Beal Mountain. His investigation revealed that these mines were not required to submit complete baseline data. Rather, the mine operators contend that detection of pollutants are the result of historic mining.
activities with incompatible or damaged systems. Requiring phased construction
inspections as they do in Colorado may have helped avoid many of Zortman-Landusky's
failing containment systems and leaks in the leach pad liner. Accordingly, Montana
should consider implementing phased construction inspections.

Additionally, with the emphasis being placed on reclamation rather than ensuring
safe operations, a mining operation may not be prepared for an emergency situation. The
current statute does not provide any requirement or recommendation for the operation to
plan for such a situation. This lack of foresight contributed to the Summitville situation,,
and could lead to a similar occurrence here. As we saw with Zortman-Landusky, every
drainage has been contaminated with cyanide or acid mine drainage. An Environmental
Protection Plan may help to alleviate such situations in the future by requiring the
operator to plan ahead for such emergencies. Zortman-Landusky is also a good example
of a mine that had not been subject to review under MEPA. As stated earlier, no
Environmental Impact Statement had been prepared for the Zortman-Landusky Mine until
1995, when the mine applied for an expansion permit. An Environmental Protection Plan
would have addressed many of the concerns that would have been included in an
Environmental Impact Statement. As a result, many of the environmental problems (acid
mine drainage and cyanide in water supplies) at the mine may have been avoided.
Therefore, Montana should implement a requirement similar to Colorado's
Environmental Protection Plan.

Although the statute provides a very brief time frame to approve or deny a permit,
this may not be a critical factor since the application would be subject to MEPA review.
If the application is subject to an Environmental Impact Statement the time frame will be extended by 365 days. MEPA review would include investigations of various alternatives and what environmental impact each alternative would have. These investigations are very detailed and specific. They also include the opportunity for public review.

In addition to shortcomings in Montana's statutory requirements, the regulatory system may also contribute to a Summitville type situation. As previously discussed, Montana's regulatory agencies have not utilized their enforcement options with mining operations within the state. Recall that the statute gives DEQ enforcement authority to issue notices of violation and assess fines to noncomplying operations. The review of the problems at the Zortman-Landusky mine show that DEQ has not exercised that authority. Rather, the state has allowed questionable practices to continue at the site. These practices were listed in the previous section but include misplacing unoxidized material near drainages, contaminated waterways and faulty liner systems. These discrepancies sound similar to some of those found at the Summitville mine.

One factor that is very different from that found with Summitville is the level of public participation. During the reopening of the Summitville mine, there was no public involvement. This may have made a substantial difference in the outcome of the operation. Montana's MEPA statute has encouraged public participation since its inception. As a result, many members of the public review and comment on almost everything that undergoes MEPA review. The Summitville application would have undoubtedly had numerous public comments during its application process had it taken place in Montana rather than Colorado.
The Zortman-Landusky mine may have been headed toward a Summitville type of disaster had it not been for citizen involvement. Public involvement appeared to be the main factor in initiating the enforcement action against the Zortman-Landusky Mine. After years of getting little or no response from the agency, a citizens group filed notice of their intention to sue. It was after that notice that the EPA issued its notice of violation under the Clean Water Act. Public participation is a powerful tool as shown by the Zortman-Landusky story. As a result, even though Montana’s statute and regulations may allow a Summitville type of disaster to occur, active public involvement would probably prevent a Summitville type disaster in Montana.
XI. Recommendations/Conclusion:

Montana may benefit from taking a pro-active approach to permitting mines rather than by placing the emphasis with reclamation. Some of the key changes Montana might consider making would be in the areas of permitting, agency oversight and enforcement.

Permitting:

1. More site specific information should be provided with the permit rather than relying on MEPA review. This will help to educate both the applicant and the agency about the site conditions.

2. Engineer certification of baseline information should be required. This will be a greater incentive for the applicant to provide accurate information.

3. The agency should be more involved during phases of construction. This will result in a greater likelihood that inadequacies will be noticed.

4. A preplanning with a document similar to Colorado’s Environmental Protection Plan should be required. With this plan, applicants and the agency will be better prepared to handle emergency situations.

5. The agency should be allowed more time for application review if an EIS will not be conducted. This will help the agency to be better informed about the site conditions.

6. More specific site information and its compatibility with liners should be required. This will reduce the possibility of liner failure.
Agency Oversight and Enforcement:

1. The agency should oversee construction activities. This would help the agencies learn the site conditions and note potential inadequacies.

2. The agency should be allowed to take any necessary emergency action and seek reimbursement from the operator. This will take the burden off the agency of requesting funds from the governor.

Montana would likely benefit from including requirements such as these to its mining laws and regulations. As we have seen from Colorado's lesson with Summitville, the lack of foresight and preplanning may have devastating effects. Integrating these requirements may not eliminate all environmental risks involved in mining operations, however, they would help to protect the environment from many of the consequences seen at Summitville.
XII. Limitations of this Paper:

The intention and limit of this paper was to examine mining laws and regulations in the states of Colorado and Montana. The Summitville mine was used as an example of the worst case scenario to determine how strong the laws and regulations might be.

There are many aspects associated with mining that were not fully analyzed or discussed. Aspects not discussed include but are not limited to:

3) The 1872 Mining Law and the impacts it has on modern day mining;
4) The technical and scientific aspects of mining;
5) The requirements which either the National or Montana Environmental Protection Acts would place on mines or proposed mining operations;
6) The full requirements the federal Clean Water Act or the Montana Water Quality Act would place on mines in Montana;
7) The climatic conditions of mines in Montana and how that would affect mining operations and ultimately environmental outcomes; and
8) Differences in geology and topography and the different affects they would have on mining operations.

As a result, although Montana's mining laws and regulations may leave the door open to a Summitville type of disaster, it is important to realize there are many other factors which may preclude such an occurrence in Montana or in other areas.
Enforcement Options. What the EPA has done Since Clean-up:

I. CERCLA

As a result of the inadequacies of Colorado's regulations and enforcement, the federal government took control of the site, and now may seek to impose liability through federal laws. The federal government has at least two potential avenues with which to impose liability. The first involves initiating an action under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), the second falls under the Clean Water Act. The Summitville mine is the first mining operation to be commenced, abandoned and cleaned up while CERCLA has been in effect. As of this date, no claims for reimbursement have been filed. Although people are not volunteering information, there are probably numerous Potentially Responsible Parties associated with the site, who may be responsible for some or all clean up costs. However, until the federal government initiates an action to recover its response costs which it incurred in cleaning up this site, the financial burden will remain with the American taxpayer.

II. The Clean Water Act

The second alternative involves an action under the Clean Water Act. The federal government chose to pursue this option. The United States Attorney General's office has filed criminal charges against Samye Buckner, the mine's top manager, and Tom

---

188 42 U.S.C. 9601 et. seq.
189 Williams, supra note 77 at 367.
Chisolm, the mine's environmental manager. As a result of the contamination generated at the Summitville mine, a federal grand jury indicted Buckner on 15 counts and Chisolm on 35 counts. The charges consist of 12 Clean Water Act violations, and 3 Felony violations of lying to regulators and concealing evidence. Each count carries a potential penalty of three to five years in prison or a fine of up to $250,000, or both.

Although the State of Colorado has the authority to grant or deny discharge permits, the EPA retains the right to bring an enforcement action. The Clean Water

190 Frazier, Deborah "Summitville Mining Executive Indicted" Rocky Mountain News, 11-3-95.
191 Ibid.
192 Indictments filed in Criminal Case Nos. 95-CR-216, 95-CR-397-S, 96-CR-9-S. Clean Water Act violations include: Several Knowing Violations of Clean Water Permit (including not reporting the land application activities that resulted in discharges to Wightman Fork, and discharges from the heap leach pad's sump pump system); and numerous Knowing Unauthorized Discharge counts.
193 Id. These counts include: Conspiracy (to discharge pollutants, not reporting pollutant discharges, making false and fraudulent statements, engaging in tricks and schemes to conceal facts, information and to conceal offenses, and using fire hydrants to discharge polluted wastewater into Cropsy Creek and Wightman Fork); Overt Acts (signed monthly reports stating there were no discharges for the month when in fact there were, representing to a DMG inspector that the mine used processed wastewater as a process water in the recovery process when it was actually discharged, covering up monitoring reports)
195 33 U.S.C. 1342(b) allows states to assume the authority to issue permits, however, the
Act is straightforward, and liability is strict, therefore, violations under the Act may be easier to enforce than under many environmental statutes. Many enforcement actions under the Clean Water Act are initiated as a result of unpermitted discharges which are punishable under the Act. Also, the Act requires permit holders to monitor their own compliance or noncompliance, and the failure to submit accurate reports provides grounds for enforcement. In cases such as these, the EPA may be required to bring an action in the case of a violation.

An overview of the Clean Water Act reveals why it is the logical choice with which to pursue responsible persons for the Summitville mess. Initially, the Act requires that any person who discharges pollutants into a water must first obtain a permit.

EPA retains the authority to veto the permit and/or issue one of its own.

33 U.S.C. 1319(a) provides that the EPA may bring an enforcement action after giving the violator and the state notice of its intent to bring the action and allowing the state 30 days in which to initiate its own action against the violator.

33 U.S.C. 1311(a) states: "Except as in compliance with this section . . . the discharge of any pollutant by any person shall be unlawful."

40 C.F.R. 122.41.

33 U.S.C. 1319(a) states:
Whenever, on the basis of any information available to him, the Administrator finds that any person is in violation of any condition or limitation . . . in a permit . . . he shall proceed under his authority . . .

33 U.S.C. 1311. Also recall that SCMCI initially did not obtain a permit to discharge because it represented that Summitville mine would be a zero discharge facility. It was not until fluids began to escape and the leach pad threatened to overflow that SCMCI sought a permit to discharge.
Under the Clean Water Act, SCMCI should have had to provide extensive data prior to obtaining a permit. Additionally, the application must be signed by a responsible corporate officer who can be held accountable for violations. If the agency grants a permit, it must contain monitoring requirements that yield data representative of the permitted activities. As a part of the permitting process, the applicant will be subject to technological standards, or water quality standards as a basis for determining the effluent limits of the discharge. Since Colorado’s Water Quality Division was so

---

201 Before a Clean Water Act discharge permit can be issued, the applicant is required to provide extensive information concerning the facility and potential discharges pursuant to 40 C.F.R. 122.21. The applicant is also required to provide production data of which none is considered confidential. 40 C.F.R. 122.7.

202 40 C.F.R. 122.22(a). It is likely that since the Attorney General has filed charges against Samye Buckner (the mine’s top manager) and Tom Chisolm (the mine’s environmental manager), they had the authority to and did sign the permit application.

203 40 C.F.R. 122.48.

204 33 U.S.C. 1316 and 1317. These sections require the EPA to make a determination of appropriate technology options. The option Colorado’s Water Quality Division chose to include in SCMCI’s permit to discharge was the Best Available Technology (BAT) standard. BAT requirements are the maximum pollution reduction requirements under the Act. Section 1317 requires that the standard be “economically achievable.” The EPA considers BAT economically achievable if it does not force large portions of the plants using the technology to close. See 52 Fed. Reg. 42522, 42538-45. See also Gallagher, Lynn Et Al. The Clean Water Handbook (1996).

205 33 U.S.C. 1313. This provision is used in the permitting process when technology requirements are not sufficient to ensure that state water quality standards are not violated.
skeptical of Summitville's ability to comply with either technological controls or water quality based standards, it imposed both limitations on the mine's permit.\textsuperscript{206}

In addition to effluent limitations, a permit to discharge usually contains conditions such as reporting requirements,\textsuperscript{207} general requirements,\textsuperscript{208} and Best Management Practices (BMPs).\textsuperscript{209} SCMCI should have had to submit monitoring results to the state on a regular basis.\textsuperscript{210} For a permitted discharger such as SCMCI, these provisions provide mechanisms with which the EPA can initiate enforcement proceedings. Additionally, tampering with monitoring equipment, or submitting false data are considered criminal violations under the Act.\textsuperscript{211}

\textsuperscript{206} McNamara, supra note 84 at 10395.

\textsuperscript{207} 40 C.F.R. 122.41(l) requires the permittee to notify the Director of certain events such as planned changes, anticipated noncompliance, monitoring reports, and the permittee must also notify the Director of any noncompliance which may endanger health or the environment within 24 hours of that noncompliance.

\textsuperscript{208} 40 C.F.R. 122.41 sets forth general permit requirements such as the permittee's duty to comply with the permit conditions, duty to mitigate discharges, duty to properly operate and maintain all facilities, duty to provide information and to allow access to facilities, etc.

\textsuperscript{209} 40 C.F.R. 125.104. Pursuant to 33 U.S.C. 1314(e), the EPA set forth BMP requirements for certain industries that have potential to discharge toxic or hazardous pollutants and to control site plant runoff, spillage, leaks, sludge or waste disposal. Mining is generally included within this category.

\textsuperscript{210} 40 C.F.R. 122.44(I)(2). A review of the Indictments reveal that SCMCI was required to submit reports on a monthly basis. These Indictments also allege that SCMCI failed to comply with this requirement.

\textsuperscript{211} 33 U.S.C. 1319(c) provides criminal penalties for any person who either negligently or
When a violation has occurred, as in the case against SCMCI, the federal government is usually more active than the states in enforcement since they are better equipped to finance an action. In pursuing criminal charges against SCMCI, the U.S. Attorney General has chosen to indict its top manager and its environmental manager. The U.S. Attorney General has not, at this time, chosen to file charges against Freidland, SCMCI's sole shareholder.\(^{212}\) Since SCMCI filed bankruptcy and walked away, Freidland has commenced new mining operations in other areas. One of Freidland's more profitable mines is located in eastern Canada. Another, located in Nevada, became the new home for Summitville's former general manager Samye Buckner in 1990.\(^{213}\)

The criminal charges filed against SCMCI's managers will likely be the first in a series of lawsuits filed as a result of the Summitville disaster. Surely we will soon see allegations of liability under CERCLA, since no one party will want to assume full responsibility for clean up costs. The Summitville mine, although supported by many and opposed by few if any, has left its mark not only atop what was once a scenic mountain range, but also on the mining industry. However, there is the potential that we have learned from this disaster. Colorado has recently amended its laws and regulations to avoid a similar situation.

\(^{212}\) Freidland is the sole shareholder of Galactic Resources, Inc. and SCMCI.

\(^{213}\) Frazier, supra note 190.
Bibliography


40 C.F.R. 122.

2 Colo. Code Regs.


Colorado Springs Gazette “Former Mine Manager Indicted in Summitville Pollution Case” (6/17/95).


Ehli, Nick “EPA Sues Zortman Mining” The Billings Gazette (6/7/95).


Lange, Ted “Big Problems at Montana’s Biggest Mine” The Plains Truth (Fall 1993).


Mont. Code Ann. §82-4-301 et. seq.


Obmascik, Mark "Mine Disaster Worsens to Tune of $33,000 a Day" The Denver Post, (2/21/93).


33 U.S.C. 1300 et.seq.