

**STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD**

In the Matter of the State Water )  
Resources Control Board's Review )  
On Its Own Motion of Resolution )  
No. 90-128 of the California Regional )  
Water Quality Control Board, Central )  
Valley Region, )  
)  
COMMITTEE TO SAVE THE MOKELUMNE AND )  
CALIFORNIA SPORTFISHING PROTECTION )  
ALLIANCE, )  
)  
Real Parties in Interest. Our File )  
No. A-688. )  
\_\_\_\_\_ )

ORDER NO. WQ 91-14

BY THE BOARD:

On May 25, 1990, the State Water Resources Control Board (State Board) received a petition from the Committee to Save the Mokelumne and California Sportfishing Protection Alliance (collectively, Petitioners). The Petitioners seek review of Resolution 90-128 which was issued by the Regional Water Quality Control Board, Central Valley Region on April 27, 1990. Resolution 90-128 granted the East Bay Municipal Utility District (EBMUD) an exemption from the Toxic Pits Cleanup Act (Health and Safety Code Section 25200 et seq.) (TPCA) for the Mine Run Dam Reservoir (MRDR) and waived waste discharge requirements for MRDR.

At the workshop meeting on September 5, 1991 the State Board considered a draft order in this matter and decided to hold a hearing for the limited purpose of receiving additional technical evidence. The hearing was scheduled for October 22, 1991. This date was beyond our regulatory deadline for

completing review of the petition. (23 C.C.R., Section 2052). Therefore, the State Board adopted Water Quality Order No. WQ 91-12 on September 26, 1991 providing that the State Board would review this matter on its own motion.

The hearing took place on October 22 and 23, 1991. The record remained open for written rebuttal testimony and closing statements and legal argument until November 8, 1991. This order is based on the Regional Board record, additional documentary evidence placed in the record during the State Board's review and the testimony and legal and policy argument presented at the hearing and the State Board meetings.

#### I. BACKGROUND

Site Description and History. MRDR was constructed along with other surface impoundments and diversion structures for the purpose of mitigating the adverse impacts of acid mine drainage (AMD) from Penn Mine. Penn mine is located in Calaveras County and neighbors the Mokelumne River and Camanche Reservoir.

Mining activity at Penn Mine began with the discovery of copper in 1861 and continued sporadically until 1953. Mine and smelting operations produced about ten miles of tunnels as well as tens of acres of tailings, mill waste, and excavated ores which lay exposed throughout the property.<sup>1</sup> An unfortunate by-product of mines such as this, is the production of AMD which has caused serious water quality problems.

The Penn Mine area is drained by two intermittent creeks, Mine Run Creek and Hinkley Run Creek, which converge

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<sup>1</sup> Exhibit 1 provides a site map for Penn Mine.

shortly before discharging into the Mokelumne River. Historically, these creeks have been conduits for the transport of AMD to the Mokelumne River. Penn Mine has directly or indirectly caused a number of fish kills on the Mokelumne River. The dates and causes of fish kills are summarized in Appendix 2 of "Penn Mine Toxic Pits Cleanup Act Technical Investigation Report", Steven R. Bond, November 3, 1988. ("1988 Bond Report"). Additionally, bioassay tests performed by the Department of Fish and Game (DFG) in November 1964 showed that drainage from Penn Mine after it entered the Mokelumne River was fatal to trout within six hours. (Memo from DFG to Regional Board dated November 17, 1964).

In 1928, Pardee Reservoir was constructed by EBMUD above the confluence of the Mokelumne River and Mine Run Creek (the lowest and most substantial conduit of AMD from Penn Mine into the Mokelumne River). This dam altered the natural volume of flow, reducing the dilution of downstream AMD during and following storm events. Camanche Reservoir was constructed by EBMUD in 1963. This dam is on the Mokelumne River below the confluence of the river with Mine Run Creek. The high water point of Camanche Reservoir comes up to the confluence of the river with Mine Run Creek. Camanche Dam hinders the seasonal transport of polluted sediments from Penn Mine out of the area.

The Regional Board became involved with the water quality issues associated with Penn Mine in the early 1950's. Since that time, the Regional Board, the Attorney General and the Calaveras County district attorney have initiated numerous

administrative and court actions to compel the owners of the mine, New Penn Mine, Inc. to abate the environmental problems caused by the mine. None of these actions were successful. Finally, the Attorney General's office advised the Regional Board that New Penn Mine, Inc. had no assets and that further actions against the corporation would be fruitless.

In 1978, the Regional Board, EBMUD and DFG took action to partially mitigate surface water pollution caused by Penn Mine. The pollution control strategy involved diversion of clean surface water away from pollution sources (primarily massive waste piles of waste rock and tailings) and retention for evaporation and controlled release of surface water that had contacted pollution sources. At the conclusion of this cooperative effort, seven surface impoundments were located within the old creek beds to contain AMD; three impoundments within the Hinkley Run Creek drainage, three impoundments within Mine Run Creek drainage and a large impoundment, MRDR, at the confluence of the two creeks. Some of these impoundments, including MRDR were created by this cooperative effort and several had already been installed by Penn Mine operators. Additional structures include a diversion conduit, several diversion ditches, access roads and a pumping station with associated hydraulic network. Mine Run Dam and MRDR were designed and constructed by EBMUD and are located primarily on

EBMUD property.<sup>2</sup> MRDR has a spillway elevation of 255 feet and top-of-the-dam elevation of 261 feet. The dam was built with a hand crank control discharge valve located at its north end. MRDR appears to be constructed of non-reactive earth materials, and the plans for this dam indicate that it was constructed with a clay core. The capacity of MRDR to contain storm events is a function of the successful diversion of unpolluted waters, upstream of the waste piles. The surface area of MRDR is approximately 3 acres. A pumping station is situated on EBMUD property, adjacent to Mine Run Dam and is used to pump the MRDR contents from the reservoir to the impoundments in the Mine Run Creek drainage for the intended purpose of enhanced evaporation.

The six smaller surface impoundments are located on land owned by New Penn Mine, Inc. The impoundments were excavated in materials present at the site, including tailings,

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<sup>2</sup> The Regional Board, EBMUD and DFG signed a memorandum of understanding (MOU) in 1979 regarding these facilities. The MOU stated that the work had been done knowing that it would not be a comprehensive or complete solution to the water quality problems at Penn Mine. The MOU acknowledged that periodic releases of toxic solutions from the abatement facilities would occur. There was still hope at that time that New Penn Mine, Inc. would take responsibility for the mine pollution and the Regional Board agreed in the MOU to continue actions to establish the liability of New Penn Mine, Inc.

waste materials, and soils, without detailed plans.

Diversion channels were constructed on both watersheds to route unpolluted runoff away from waste piles and the impoundments. The adequacy of the design of the diversion channels is unknown; however, the diversion channels have not been adequately maintained and releases of unpolluted water into the surface impoundment occur.

AMD polluted water flows into MRDR from tailings, ore and waste rock on the Penn Mine property. Flow from at least one mine adit has also been reported. (1988 Bond Report, p. 15, Appendix 1, p. 1).

Current Activities. It should be noted that a renewed cooperative effort to address the Penn Mine water pollution problem is underway. A draft remedial strategy has been prepared among participants in the Penn Mine Oversight Committee (PMOC). Members of the PMOC include the State Board, the Regional Board, EBMUD, DFG, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency (EPA), and one of the Petitioners, Committee to Save the Mokelumne (the Committee to Save the Mokelumne participated but did not concur with the draft remedial strategy). Additionally, the Regional Board and EBMUD have agreed to undertake some short term remedial measures at Penn Mine. These include maintenance and improvements of the diversion structures, which have already been completed, to decrease flows into MRDR. The Regional Board and EBMUD are also studying management practices to reduce uncontrolled discharges.

The Regional Board has issued a Request for Qualifications and a Request for Proposals and has selected a contractor to perform a comprehensive study and design a remedial project for Penn Mine. The State Board has contributed \$300,000 for this project and EBMUD has conditionally contributed another \$100,000. The United States Geological Survey (USGS) has also begun a comprehensive hydrogeological study of Penn Mine. This work is being done under an interagency agreement between USGS and the Regional Board and is funded with an EPA grant and USGS matching funds. These two studies will provide enough information to substantially comply with the requirements for a HAR under Health and Safety Code Section 25208.8. They will also provide information which is not required in a HAR. These studies will assure that there is scientific understanding of the conditions at the site and an understanding of various remediation alternatives before additional long-term remedial actions are undertaken.

## II. CONTENTIONS AND FINDINGS

Contention: Petitioner contends that MRDR is not entitled to an exemption from TPCA pursuant to Health and Safety Code Section 25208.20.<sup>3</sup>

Finding: MRDR contains hazardous waste and the Regional Board has determined that it is subject to TPCA, unless it is found to be exempt. EBMUD applied to the Regional Board

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<sup>3</sup> All other contentions raised in the petition which are not discussed in this order are dismissed. (See 23 Code of California Regulations Section 2052, People v. Barry (1987) 194 Cal.App.3d 158).

for an exemption from TPCA pursuant to Health and Safety Code Section 25208.20 (the application process is discussed below). On April 27, 1990, the Regional Board adopted Resolution No. 90-128 granting the TPCA exemption.

Before discussing the application of the TPCA exemption under Section 25208.20 it is necessary to review the requirements of TPCA which apply to MRDR if it is not exempt from TPCA. TPCA imposes three basic requirements which would apply to MRDR if it is not exempt from TPCA. The first is that EBMUD must submit a hydrogeological assessment report (HAR). (Health and Safety Code Section 25208.8). The second is that EBMUD must cease discharging liquid hazardous waste or hazardous waste containing free liquids to MRDR. Third, EBMUD must close the impoundment. (Health and Safety Code Sections 25208.2 and 25208.4).

In order to comply with the "cease discharge" requirement of TPCA, EBMUD must cease using MRDR to "place, dispose of, or store liquid hazardous wastes or hazardous wastes containing free liquids...." (Health and Safety Code Section 25208.1 (f)). This second requirement is difficult to implement because of the nature of the Penn Mine site. MRDR is built within a natural drainage way at the confluence of two creeks, Hinkley and Mine Run Creeks. These creeks continue to transport AMD from Penn Mine into the drainage and but for MRDR, directly into Camanche Reservoir. EBMUD does not have control of the upstream pollution source which is flowing onto EBMUD's property via a natural drainage way.



The third requirement is that the surface impoundment must be closed in accordance with State and federal law. (Health and Safety code Section 25208.1 (d)). In this case the provisions of Title 23, Chapter 15 (Chapter 15) govern closure of MRDR. The basic requirements are that all hazardous wastes must be removed from the impoundment or the impoundment must be closed as a landfill. (Chapter 15, Section 2574(k)). In this case MRDR must comply with landfill closure requirements only to the extent feasible. (Chapter 15, Section 2511(d)). There are prescriptive requirements for closure, but the Regional Board has discretion to permit EBMUD to implement an engineered alternative to these prescriptive requirements if certain conditions are met. (Chapter 15, Section 2510).

A time schedule for phasing out the use of MRDR is a possibility. However, ultimately, if TPCA is applied, MRDR must be permanently closed and therefore will not be available for storage as part of a long term remedy for the Penn Mine site as a whole.<sup>4</sup>

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*4 Petitioners have suggested that a tank be constructed to contain polluted flows for treatment and that MRDR could be used as an emergency containment dike to temporarily hold overflows. While petitioners' suggestion would be a legally permissible alternative, the feasibility of building a tank large enough to contain these flows is questionable. Constructing a small tank, incapable of containing flows would merely be a sham because MRDR would have to be used for storage frequently not just in emergencies.*

*Neither TPCA nor Chapter 15 authorize the Regional or State Boards to mandate construction of such a facility. TPCA and the Chapter 15 requirements, which apply to surface impoundments, address the water quality problems associated with use of surface impoundments as waste management units. They create no mandates requiring the owner or operator of a surface impoundment to provide alternative means for managing waste which is not located within the waste management unit after the impoundment is closed. Authority to require EBMUD to manage waste which was not previously stored in MRDR, such as pollutants flowing from the Penn Mine property onto EBMUD property within natural creek drainage, must come from another legal source.*

Health and Safety Code Section 25208.20 provides that a Regional Board may exempt a surface impoundment from TPCA if certain conditions are met.

Section 25208.20 was enacted through Assembly Bill 2942 (Chapter 885, Statutes of 1988). This bill was sponsored by the State Board. Section 25208.20 was drafted specifically for the purpose of creating an exemption from TPCA for MRDR and several other surface impoundments which were constructed to mitigate surface water pollution caused by abandoned mines.

The legislative bill proposal and the enrolled bill report for A.B. 2942 submitted by the State Board and the Environmental Affairs Agency to Governor Deukmejian state:

"The concentrations of some metals and other pollutants in these ponds make them hazardous waste under California law. Because of the mining operations which have occurred at these facilities in the past, the leachate from the mines cannot be eliminated. Clearly, allowing direct discharge of drainage from these mines into surface water would cause serious surface water quality impacts. These ponds were specifically constructed to prevent negative impact on surrounding streams from the continual toxic seepage from these mines. To close the containment ponds and return these hazardous waste sites to their original state would circumvent all previous efforts to keep these wastes onsite.

"TPCA requires that surface impoundments which contain liquid hazardous wastes or hazardous waste containing free liquids must close if the impoundments cannot satisfy the rigorous containment requirements necessary for exemption. These mining ponds cannot satisfy the requirements, and given the large volume of drainage, most treatment processes would require use of ponds to contain hazardous wastes either before or during treatment. TPCA has no provision for considering surface impoundments that were installed to prevent or minimize a serious water quality

problem by preventing the discharge of hazardous drainage into surface waters."<sup>5</sup>

Section 25208.20 imposes the following requirements be complied with before a Regional Board can grant an exemption from TPCA:

1. The surface impoundment was used or constructed at the direction of the State Board or a Regional Board to cleanup or abate a condition of pollution or nuisance resulting from discharges of mining waste to surface waters from a mine which ceased operations prior to January 1, 1988.

2. The environmental benefit of discharging to the surface impoundment as a remedial measure outweighs any threat to water quality posed by the surface impoundment.

3. The Regional Board has issued waste discharge requirements for operation of the surface impoundment, or waived the issuance of waste discharge requirements. If waste discharge requirements are waived, the Regional Board must adopt findings in support of its action.

4. The owner of the impoundment must submit an application for exemption and a technical report by July 1, 1989 which shall contain sufficient information for the Regional Board to determine if the surface impoundment is polluting or threatening to pollute waters of the state, and if hazardous waste constituents are migrating from the surface impoundment.

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*5 This language is quoted from the legislative bill proposal. The enrolled bill report contains nearly identical language.*

The technical report must include the following:

- a. Characterization of waste constituents;
- b. An analysis of the effectiveness of the containment structure;
- c. Operation plans to prevent the migration of hazardous waster to groundwater; and
- d. Groundwater monitoring data.

The Regional Board must notify the applicant within 60 days if either the application or report do not comply with Section 25208.20. The applicant must provide additional information to the Regional Board within 90 days after receiving notice of noncompliance from the Regional Board. If the applicant fails to provide the additional information required within the 90-day period, the Regional Board shall not consider the exemption.

Clearly, MRDR complies with the first requirement of Section 25208.20. MRDR was constructed as part of a cooperative agreement among the Regional Board, EBMUD and the DFG. The goal of this agreement was to provide partial mitigation of the effects of AMD from Penn Mine which had ceased operations in the 1950's.

The second general criterion of Section 25208.20 requires the Regional Board to determine that the environmental benefit of discharging to the surface impoundment as a remedial measure outweighs any threat to water quality posed by the surface impoundment. This balancing test recognizes that some environmental threat could be caused by the impoundment but that

discharges to the impoundment should be permitted to continue if the benefit of doing so outweighs the detriment. The following considerations apply to this balancing process:

1. Historic Discharges. The record is replete with reports documenting discharges of AMD to the Mokelumne River and Camanche Reservoir before MRDR and the other Penn Mine surface impoundments were constructed. These reports show that AMD, prior to the construction of MRDR, was low pH, contained high levels of heavy metals and was acutely toxic to fish (1988 Bond Report, Appendix 2; memo from DFG to Regional Board, November 3, 1952; memo from DFG to Regional Board, December 12, 1952; memo from DFG to Regional Board, March 21, 1955; internal memo Regional Board, December 19, 1956; internal memo Regional Board, March 6, 1957; internal memo Regional Board, February 11, 1958; internal memo Regional Board, March 10, 1958, internal memo Regional Board, April 3, 1959; memo from DFG to Regional Board, June 30, 1961; internal memos Regional Board, March 3 and 6, 1964; internal memo Regional Board, November 13, 1964; memo from DFG to Regional Board November 17, 1964; internal memo Regional Board, November 28, 1972, internal memo Regional Board, March 19, 1973). Closure of MRDR and the other surface impoundments will do nothing to address the underlying problems caused by Penn Mine.

2. Conventional Mitigation Approach. Construction of the surface impoundments and diversion structures was and is a conventional approach to mitigating the environmental impacts of AMD. The goal of the project was to divert as much surface flow

as possible away from the reactive materials in the mine waste piles. The purpose of the ponds was to capture undiverted water flow for evaporation and controlled release. This strategy reduces flow volume and allows controlled timing of discharges (this would limit the rate of discharge and permit discharge when receiving water flows would provide the best dilution).<sup>6</sup> This general approach is described with approval in the 1988 California Mining Waste Study (CMW Study) in Chapters 4.2, 4.3 and 5.3<sup>7</sup> This is also the basic strategy proposed by Cornforth Consultants in its proposal submitted in the Regional Board's recent RFP process for a study and remediation design for Penn Mine (Cornforth Proposal). The Cornforth Proposal states "Control strategies may include diversion structures, transmission canals or pipelines, temporary or permanent storage ponds or some combination.... In the case of the central mine site, the objective will be to retain all of the undiverted runoff for either evaporation and/or treatment, depending on the method chosen." The proposal submitted by Davy Environmental in the same RFP process also proposes a combination of diversion and storage in MRDR. While both proposals include improvements to

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<sup>6</sup> *The diversion part of the system should not be separated from MRDR when evaluating the benefits of MRDR. The diversion works capture unpolluted water, reducing total demand for storage. But all pollution sources are downstream from the diversion works so that all polluted flows must be stored and controlled by MRDR.*

<sup>7</sup> *The CMW Study was commissioned by the California State Legislature and jointly funded by the State Board, the Department of Health Services, and the California Department of Conservation. A team of mining experts from the University of California, California State University and Lawrence Berkeley Laboratory completed the study. Two members of the study team were Dr. Fiona Doyle and Dr. Steven J. Onysko who were witnesses for Petitioners.*

the existing facilities and studies for additional site remediation, the fundamental approach was the same.<sup>8</sup>

It should also be noted that EPA has approved the same basic strategy for Iron Mountain Mine, which is a federal superfund site. This plan was approved after years of studies. EPA plans to construct diversion facilities which will reduce flows of uncontaminated water into Spring Creek. "This will allow the storage of contaminated water in the Spring Creek Reservoir, thereby giving greater flexibility in timing releases of water from Shasta Lake to reduce heavy metal contamination in the Sacramento River." (CMW Study p. 198). At the same time EPA plans a study to develop innovative mitigation techniques. The CMW Study praises EPA's decision as a,

"conservative step-by-step approach. Its primary aim is to prevent the formation of AMD by controlling the amount of water that comes into contact with the ore. Its secondary aim is to hold the diminished amount of AMD so that discharges can be controlled to ensure adequate dilution. Water diversion is a known technology. The new technology, concrete injection, is to be tested on a laboratory and field scale before proceeding."

Although any accidental spills from Spring Creek Reservoir would be more deleterious than at present because of the high concentration of AMD, the proposed projects are very unlikely to exacerbate the existing problem and are likely to lead to an overall improvement." (CMW Study p. 200).

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<sup>8</sup> The Cornforth Proposal is significant because it was drafted by a team of mining experts which included Dr. Fiona Doyle, a witness for Petitioners. The Proposal was selected by the Regional Board but Cornforth withdrew before a contract was complete. The Davy Proposal was also drafted by mining experts and was selected by the Regional Board after Cornforth withdrew.

A similar strategy is also being employed at Leviathan Mine. The Leviathan Mine project was developed after a costly study by Brown and Caldwell in 1983. (CMW Study Chapter 5.6).

The only difference between MRDR and the impoundments at Iron Mountain Mine and Leviathan Mine is that MRDR is located in an area containing reactive materials and is unlined. However, the basic approach of diversion and containment is identical. As was done at Iron Mountain Mine and Leviathan Mine, the Regional Board is proceeding with a comprehensive study of the Penn Mine site and developing additional remediation work, which may include lining MRDR and improving the diversion works as well as innovative techniques.

3. Controlled Timing of the Discharge. Prior to construction of MRDR discharges of AMD to Mokelumne River occurred every time there was a storm event which created flows in Mine Run Creek or Hinkley Creek. One intended purpose of MRDR was to capture these flows so that the timing of the surface discharges would permit optimum dilution because discharge would occur only during major storm events and when receiving waters were at their highest levels. As noted above, this is the same basic approach employed by EPA at Iron Mountain Mine. This plan has been effective. There have been no surface water discharges from MRDR for over five years. Even though these were drought years, there were storm events during these years which would have caused surface water discharges absent MRDR (for example the March 1991 rains).



The degree of discharge control can be augmented by improvements to MRDR and the diversion structures. This control will be lost if MRDR is eliminated through application of TPCA.

4. Controlled Rate of Discharge. A major concern expressed by petitioners and their witnesses is that MRDR has changed discharges from "continuous releases to episodic catastrophic releases." (State Board hearing, written testimony of Dr. Anne Maest submitted October 11, 1991, hereafter all citations to written testimony refer to testimony in the State Board hearing).<sup>9</sup> Review of the record indicates the opposite has occurred. Sudden large releases of AMD to the Mokelumne River occurred prior to the construction of MRDR. Releases after construction of MRDR have been at a lower rate, spread out over a longer period of time.<sup>10</sup>

A 1964 report prepared by Bechtel Corporation discusses the infrequent, high flow from Mine Run Creek into the Mokelumne River. This report is entitled "Evaluation of Penn Mine Waste as a Source of Degradation of the Mokelumne River and Camanche Reservoir." (Bechtel Report). The Bechtel Report states:

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<sup>9</sup> Dr. Maest testified that she used the term "catastrophic" in the geological sense meaning a sudden large release versus a gradual one. While Dr. Maest raised the issue of a "catastrophic" release, she acknowledged that a complete scouring of the contents of MRDR probably would not occur. (State Board hearing transcript, Vol. I, p.p. 224 and 232).

<sup>10</sup> The only risk of a sudden massive discharge from MRDR would occur if Mine Run Dam would collapse. This risk is remote as the dam was engineered by EBMUD and approved by the Division of Dam Safety. (written testimony of Thomas Pinkos, p.3). A 1988 Regional Board inspection indicated that Mine Run Dam appeared to be in good condition. (1988 Bond Report, Appendix 1, Attachment 1).

"The Penn Mine drainage area, which consists of about 450 acres, is drained by Mine Run Creek. Runoff based on a two-thirds runoff factor and an average annual rainfall of about 18 inches, would be about 450 acre-feet per year. Mine Run Creek, however, generally flows only during the rainy season, for about 30 days. To carry 450 acre-feet in 30 days, Mine Run Creek would have to flow an average of about 8 second feet (3,400 gallons per minute). Degradation of the Mokelumne River will normally occur only during these periods of flow." (Bechtel Report p. 11).

Bechtel's calculations appear to be extrapolated from various data sources and not on direct observation. However, the fact that "catastrophic" surface discharges occurred from Penn Mine prior to construction of MRDR is evidenced by observation of the results as described in a 1961 Department of Fish and Game memo:

"The mine is inactive at this time, but mining waste and tailings are exposed on the surface of a large area. Winter rains leach sufficient copper, zinc, aluminum, iron and manganese sulfates from the area which drain to the Mokelumne and cause conditions which are highly toxic to fish and aquatic life for several miles downstream. These conditions have been found to occur several times during each winter season.

"Pollution from the Penn Mine has seriously damaged the fishery of the Mokelumne River and is a major factor in the decline of important salmon and steelhead runs. Surveys have shown that fishing is generally poor in the river below Penn Mine and consequently fishing use is low." (emphasis added, memo dated June 30, 1961 from Department of Fish and Game to Regional Board).

In contrast, flow data for releases from MRDR, which have been relied upon by petitioners, indicate a much lower rate of flow over longer periods of time. With the exception of 1986 flows, releases from MRDR have ranged from an annual average of

as low as 12 gallons per minute in 1981 to as high as 144 gallons per minute in 1980. The highest rate of flow was in 1986; an average rate of 308 gallons per minute. The high average annual flows in 1986 are still more than 10 times less than the average flows identified in the Bechtel report prior to construction of MRDR.

To assess the impacts of these reduced flow rates on aquatic habitat in the Mokelumne River, the concentrations of toxics in the flow must be taken into account. As is discussed below, the evidence indicates that the average concentration of toxics in the surface water flows which have been released from MRDR are in the same range as the average concentrations discharged to the Mokelumne River prior to MRDR construction. There is no evidence demonstrating that, even if average concentrations are higher, that they are sufficiently high to overcome the benefits of reduced flow rate.

5. Production of AMD in MRDR. Another major concern expressed by Petitioners is that construction of MRDR has allegedly resulted in more concentrated releases of toxic pollutants than historic discharges of AMD from the Penn Mine to the Mokelumne River. (written testimony of Dr. Steven Onysko, written testimony of Dr. Anne Maest). Dr. Onysko on the second page of his written testimony refers to the historic discharges as "low-grade" and to the post-MRDR releases as "dramatically more concentrated." Petitioners have referred to MRDR as a "toxic factory." Petitioners improperly focus on MRDR.

The fact is that the entire Penn Mine property is a "toxic factory." The numerous reports and data in the record, describing Penn Mine prior to 1978 conclusively demonstrate that historic pollution was not "low-grade". The consistently low pH of creek flows and the documented fish kills in the Mokelumne River indicate that pollutants in historic discharges were bioavailable and highly toxic.

Petitioners assert that MRDR provides an enhanced environment for the production of AMD. They offer a number of explanations for this assertion, which are summarized as follows:

1. All the factors necessary for the production of AMD are present in MRDR.
2. The continuing process of evaporation and re-wetting that occurs in the ponds enhances the AMD process. (written testimony of Dr. Onysko)<sup>11</sup>.
3. The AMD contained in MRDR remains there for a longer period of time than would occur without the MRDR. This increases the residence time for contact between the water and the reactive pyritic rock, increasing the volume of surface water which becomes AMD. (Written testimony of Dr. Maest).

It must be noted that these explanations do not distinguish MRDR from the Penn Mine site as a whole. They do not necessarily demonstrate that AMD formation in MRDR occurs in a

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*11. It should be noted that Dr. Onysko cites his doctoral dissertation as documentation for this assertion. His dissertation discusses two studies of this issue and notes that they had contrasting results. (Onysko Dissertation p.p. 59-60 and footnotes 28 and 30, p.p. 165-166 and footnote 7). One study in a coal mine showed that major sites of pyrite transformation to AMD are located above water tables in intermittently flooded areas. In contrast, a laboratory experiment showed that pyrite oxidation rates are greater in a submerged environment than in an intermittently wet environment. It appears that the impact of intermittent wetting and drying on the rate of AMD formation is not well established.*

greater volume or at a faster rate than occurs in the massive waste piles or the extensive, flooded underground workings on the site. This point is illustrated in the CMW Study in a description of the formation process in waste dump piles similar to the tailings piles at Penn Mine:

"Coarse waste dumps have a very high permeability to both air and water. Oxygen and water are available almost throughout the dump, allowing acid generation and reaction products to be distributed anywhere within the mass. Precipitation and surface flows onto the dump infiltrate rapidly. Runoff is often low. Flow through the dump tends to follow preferred channels along which the acid products are regularly flushed out. There are zones in the dump that are seldom flushed by running water but receive moisture as a result of water vapor migration and condensation. These condensates may become highly acidic and trickle down to join the less acidic flows. The combined flow exits the toe of the dump, or enters the foundation soils to form a subsurface contaminant plume. Flow through the dump is rapid and rainfall often produces increased flow from the dump toe within minutes or hours of the start of the rain. The dump acts as a store of acid products, which are partially flushed out from time to time. Concentrations of contaminants in the toe seepage may reflect the flushing history. During periods of intense flushing the concentration of contaminants in the AMD may decrease. Conversely, after a period of low infiltration and flushing, the first significant rainfall may result in both high concentrations and large AMD loadings.....Sulphide oxidation commences as soon as the first coarse waste is place in the dump." (emphasis added, CMW Study p. 158)

There is ample evidence in the record that the factors for rapid AMD formation exist throughout the Penn Mine site (these include moisture, oxygen, pyritic rock, T. ferrooxidans bacteria, acids at a pH less than 4). (1988 Bond Report p. 15 and Appendix 3; Davy Proposal, p. A-4, A-7) The presence of these factors is obvious because numerous toxic AMD discharges have been documented at the Penn Mine site for at least 50 years. The

CMW Study also illustrates that conditions of intermittent drying and re-wetting as well as continuous acid contact with reactive materials is a characteristic of waste piles. Petitioners did not demonstrate that the reactions in MRDR are occurring at a faster rate or volume than the reactions occurring throughout the site.

It should be noted that the 1988 Bond report (Steven Bond, "Penn Mine, Toxic Pits Cleanup Act Technical Investigation Report", dated November 3, 1988) which is relied upon by every one of Petitioners' witnesses, acknowledged that the entire site contains the elements for AMD formation and that the waste piles were a source of AMD flowing into the impoundments. (1988 Bond Report p.p.15, 17-18, footnote 24, and Appendix 3). Appendix 3 of the 1988 Bond Report contains a summary of results of tests performed on one water sample and five waste rock samples taken from various locations at the Penn Mine site. The purpose of these tests was to determine the potential for AMD formation at the site. No water was sampled from MRDR, but a sample of MRDR waste rock was taken. The test results showed that the MRDR sample had the highest paste pH (3.9) and the lowest total sulphur content of any of the samples taken. The lowest paste pH (1.7) and the highest total sulphur content were found in a sample of waste rock fines from the north face of the waste rock dump, a location away from any of the impoundments. The report does not specify the levels of T. ferrooxidans in specific samples but notes that this bacteria was found throughout the

site and that conditions for AMD formation were present throughout the site.

The processes within the MRDR system whereby pollutants might be removed from the dissolved phase should also be noted. Witnesses for EBMUD have suggested some possible removal processes. Dr. Maest, a witness for Petitioners, has acknowledged that a variety of removal processes probably occur in MRDR (written testimony Dr. Anne Maest, Attachment B, p. 2; State Board hearing transcript, Vol. I, p. 211), although she asserts that precipitates and adsorbed metals may be redissolved or re-suspended within MRDR or Camanche Reservoir. However, none of the Petitioner's witnesses provide any evidence regarding the rate at which metals are redissolved or resuspended or at which these metals would subsequently be transported from MRDR to Camanche Reservoir. In fact, Dr. Maest acknowledged, that a scouring of all sediments from the bottom of MRDR is unlikely to occur. (see footnote 9). Therefore, removal processes or other mitigating processes within the MRDR system cannot be ignored.

Assuming, for the sake of analysis, that AMD is forming in MRDR at an accelerated rate, the question remains, does this significantly increase the amount of toxic pollutants entering Camanche Reservoir? Petitioners have presented no evidence regarding the additional amount of pollutants which they believe will enter Camanche Reservoir. On the other hand, data in the record and compiled by State Board staff indicate that the average concentration of pollutants in MRDR during the seasons

when releases occur are in the same range as average pollutant levels entering the River for Penn Mine before MRDR was built.

There was much discussion about the usefulness of the concentration data. Dr. Doyle did not like it because the pre-MRDR data was not flow-weighted. Dr. Doyle was concerned because the timing and intensity of storm events affects pollutant concentrations. The fact that there are a large number of samples taken throughout the rainy season should address that concern, at least in part. Dr. Maest did not like the choice of MRDR samples because they did not include samples taken from the bottom of MRDR. Dr. Maest felt that the bottom samples should be included because they would show higher average concentrations. However, the majority of the samples she referred to were not taken during the discharge season. Concentrations would be increased at that time due to evaporation over the summer. Also, because the majority of these samples were not taken during the discharge season, these are concentrations that would not be released into the river. Releases from MRDR have occurred only during and after the rainy season, during the months of December through June. Therefore only samples taken during those months are indicative of pollutant levels which might enter the river through the surface flows.

While these data do not provide precise, conclusive proof of pollutant levels, they do provide sufficient indication to support a professional judgement regarding comparative amounts of pollutants reaching the river before and after construction of MRDR. If there was a substantial continuous increase of AMD in



MRDR one might expect a steady increase in pollutant levels within MRDR over its life, especially during the last five years, when there have been no surface water releases. If such increases do not occur because pollutants have reached saturation levels, winter pollutant concentrations should quickly return to saturated summer concentrations when water is added to the reservoir if the precipitated pollutants are soluble and available. Yet, none of these findings are documented in the data set or elsewhere in the record. This would indicate that the severe increases in AMD in MRDR alleged by Petitioners are not occurring. Finally, when levels during the rainy season are considered, average pollutant levels in MRDR do not vary significantly from average levels discharged to the river before MRDR existed. In conclusion, the evidence indicates that the environmental risk of increased formation of AMD in MRDR, is not sufficient to outweigh the benefits provided by MRDR.

6. Mass Loading. Prior to construction of MRDR and the diversion works, the average annual flow to Camanche Reservoir from the Hinkley Run Creek and Mine Run Creek drainages was 154 million gallons per year. (Report of James M. Montgomery, Consulting Engineers, Inc., "Penn Mine Abatement Plan Review", January 21, 1991, p. 3 and Table I; written testimony of Thomas Howard, p. 8). It is undisputed that the average annual flow out of MRDR to the Camanche Reservoir since MRDR was constructed has been 13 million gallons per year. (written testimony of Thomas Howard, Attachment 4). Therefore, there has been more than a tenfold decrease in the average annual flow

passing through polluted areas at Penn Mine since construction of diversion works and impoundments at Penn Mine. Petitioners dispute the accuracy of the 154 million gallon per year calculation, primarily because of disagreement regarding the 70 percent run-off factor used in the calculation. However, there is no question that the reduction in average annual flow is very large. Given that the concentration data in the record indicates that average pollutant concentrations from MRDR are in the same range as pollutant concentrations before MRDR was constructed, it follows that mass loading to Camanche Reservoir has decreased since construction of diversion works and impoundments.

7. Groundwater Discharges. Petitioners also allege that MRDR threatens water quality due to ground water discharges from MRDR. It has been estimated that approximately 1.7 million gallons per year of ground water flows from the area of MRDR to Camanche Reservoir (this is the area of the confluence of the Mine Run Creek and Hinkley Run Creek drainage). (written testimony of Timothy Durbin, written rebuttal testimony of Thomas K. Wheeler). This represents an approximate average flow of less than 3.5 gallons per minute. However only approximately 500,000 gallons per year of that flow can be attributed to the hydraulic head caused by the presence of MRDR (an approximate average of less than 1 gallon per minute). (Testimony of Thomas Howard, State Board hearing transcript, vol. I, p.p. 39-40; written summary of rebuttal testimony of Thomas Howard). Additionally, if this water was not stored in MRDR it would flow directly into

Camanche Reservoir as surface water. (Testimony of Timothy Durbin, State Board hearing transcript, Vol. II, p. 32).

When weighing the threat to water quality posed by this ground water discharge it is reasonable to consider the dilution capacity of the receiving water. In this case, this ground water discharge is minimal compared to the billions of gallons of water passing through Camanche Reservoir.

In addition to dilution in surface waters, it is possible that some attenuation occurs in the ground before these flows reach the river. (CMW Study p.p. 268-271). Possible attenuation further reduces the threat to water quality of this ground water discharge.

8. Fish Kills. DFG is responsible for identifying fish kills on the Mokelumne River. Neither DFG nor any other private or government organization has identified fish kills directly attributable to mine discharges since MRDR was constructed. DFG did identify fish kills approximately ten miles downstream from MRDR in 1987, 1988 and 1989, but these were apparently due to a combination of EBMUD's operation of Camanche and Pardee Reservoirs and drought conditions.

DFG testified at the Regional Board hearing that "the reservoir has aided in providing relief from the acute toxicity problems that were experienced at the Mokelumne River fish facility and the Mokelumne River" (Regional Board hearing transcript, page 20).

This post-MRDR record is in striking contrast to the seasonal, massive fish kills which were reported before the facility was constructed.

9. Long-Term Uses. If MRDR is removed, no substitute facility has been planned to prevent the continual discharge of AMD to Camanche Reservoir. New Penn Mine, Inc., the party responsible for the pollution is insolvent and cannot be compelled to remediate the mine discharges. Even if a comprehensive remediation of the site is undertaken, some sort of containment facility to prevent surface discharges of AMD is likely to be necessary pending remediation. If TPCA is applied to MRDR it is possible to permit temporary discharges to the impoundment pending closure, but ultimately the impoundment would have to be closed and would not be available for the permanent remedy at the site.

After a review of the benefits and risks to water quality associated with MRDR we reach the following conclusions. The diversion of unpolluted water and the storage of polluted waters for evaporation and controlled release is a commonly applied, effective approach for reducing the environmental impacts of AMD. The fact that this approach has been successful at Penn Mine is evidenced by the absence of surface releases for over five years and the total absence of fish kills in an area where fish kills were a chronic seasonal event. In addition, it is likely that a surface impoundment for storage of large amounts of polluted water will be needed as part of the long term remediation of the Penn Mine site. If TPCA is applied in this

case, MRDR must be closed and construction of a new impoundment would be prohibited. If the exemption is upheld, studies are underway which will help determine the long-term value of MRDR and what improvements are needed, if any, to increase that value.

Although there is evidence that AMD is formed in MRDR and that this formation adds to the toxicity of surface water and ground water releases, there is no evidence that this risk is in an amount sufficient to outweigh the proven benefits of MRDR. Additionally, these concerns are not necessarily removed by closure of MRDR.

The third requirement for a TPCA exemption under Section 25208.20 is that the Regional Board adopt waste discharge requirements for operation of MRDR or waive such requirements. The Regional Board opted to waive discharge requirements and was therefore obliged to make findings justifying the waiver. Finding number 23 in Resolution 90-128 states that discharges from MRDR are largely dependent on wastes generated upstream, and waste discharge requirements are premature until feasible upstream corrective actions are implemented. The finding further states that the waiver avoids unnecessary expenditures of Regional Board resources. Given the unusual circumstances of this case, these findings are reasonable. The party responsible for the acid mine discharge, New Penn Mine, Inc., is unable to remedy the problem. MRDR was constructed to only partially address the problem of AMD. It was anticipated at the time MRDR was built that, while it would prevent the constant surface runoff which occurs during the rainy season, there would be

periodic discharges from the reservoir. Even with these periodic discharges, the environmental protection benefits of MRDR outweigh the threat to water quality. Costly regulation of MRDR would not solve the overall problems caused by Penn Mine and would divert resources from voluntary efforts to develop upstream corrective actions. Additionally, EBMUD and the Regional Board have undertaken some short-term remedial actions to decrease the chance of uncontrolled discharges from MRDR and will be reporting back to the State Board regarding additional short-term actions. These activities could have been incorporated into waste discharge requirements. But, since these activities are already underway, there is no need to do so.

It is not necessary to adopt waste discharge requirements in order to require a monitoring and reporting program for MRDR. EBMUD is voluntarily undertaking a monitoring program in the area, and the Regional Board could require a monitoring and reporting program under Water Code Section 13267.

The final requirement for a TPCA exemption under Section 25208.20 is the submission of an application and technical report. This requirement should be analyzed in two parts. First, the timeliness of the application and technical report and second, the adequacy of the technical report.

Section 25208.20 contains several time deadlines. The application and technical report must have been submitted to the Regional Board by July 1, 1989. EBMUD filed two submittals for the mining exemption. The first one, dated March 22, 1989, was found by the Regional Board to be deficient and was not

considered an "official" application. This interpretation was transmitted to EBMUD in a letter dated May 15, 1989. EBMUD's second submittal was dated June 26, 1989. Both of these submissions were filed before the July 1, 1989 deadline for filing applications.

Section 25208.20 requires the Regional Board to notify the applicant within 60 days, if either the application or technical report is not adequate. The Regional Board did not comply with this time limitation. The Regional Board notified EBMUD that the additional information was required in the technical report by letter dated September 12, 1989, more than 60 days after the application and technical report were submitted. However, the statute does not indicate that any consequences will result from an untimely Regional Board response. Therefore, the 60-day time limit is directory only and not mandatory. (People v. McGee (1977) 19 Cal. 948, 140 Cal.Rptr. 657).

Section 25208.20 also mandates that the applicant provide additional information to the Regional Board within 90-days after receiving notice from the Regional Board. If additional information required is not submitted within 90 days, the Regional Board must not consider the exemption. EBMUD submitted the additional information requested in the September 12, 1989 letter on October 6, 1989, well within the 90-day time limit. The Regional Board did not request further submittals from EBMUD. EBMUD timely submitted the additional information required by the Regional Board notice and so consideration of the exemption is not barred by the 90-day limit.

The second part of the analysis of the application and technical report concerns its adequacy. The standard for adequacy stated in Section 25208.20 is that the report contain sufficient information for the Regional Board to determine if:

1. The surface impoundment is polluting or threatening to pollute waters of the state; and
2. If hazardous waste constituents are migrating from the surface impoundment.

In this case, the Regional Board had sufficient information to make these determinations without any technical report. The Regional Board already knew that ground water discharges and periodic surface water releases occurred from MRDR. The Regional Board also knew that hazardous waste constituents were migrating from MRDR. Even though these determinations could have been made without further information, Section 25208.20 requires that the technical report must contain at least the following information: (1) characterization of the waste constituents, (2) an analysis of the effectiveness of the containment structure, (3) an operation plan to prevent the migration of hazardous waste to ground water, and (4) ground water monitoring data.

The statute provides little guidance regarding the adequacy of these elements of the technical report. The statute does not require the signature of a registered civil engineer or a certified engineering geologist. In contrast, the requirements in TPCA for a HAR set forth in Health and Safety Code Section 25208.8 are detailed and comprehensive. A HAR must be signed by



a certified engineering geologist with at least five years full-time hydrogeology experience. Another contrasting TPCA provision can be found in Health and Safety Code Section 25208.21 which provides for another type of TPCA exemption. That section requires a technical report but it specifies that groundwater monitoring data must include "depth, flow direction, and chemical characterization." Contrasting detailed provisions regarding technical reports in other parts of TPCA can be found in Health and Safety Code Sections 25208.17 and 25208.18. The absence of detail and the absence of a requirement for the signature of licensed professional, indicates that the technical report under Section 25208.20 need only be sufficient for the Regional Board to make the determinations in subsection 25208(c). This interpretation is supported by the enrolled bill report for A.B. 2942 which states that the report merely contains "specified leak detection information."

In fact, the technical report contained in the EBMUD submittals dated March 22, 1989, June 26, 1989 and October 6, 1989 is superficial. The following is a review of the technical report components:

1. Characterization of waste constituents. The March 22, 1989 portion of the technical report states that monitoring data is available in Regional Board files. This observation is correct; however, no data on sediments in MRDR are available.

2. Analysis of effectiveness of the containment structure. The March 22, 1989 submittal states that there are

occasional discharges from MRDR when upslope ponds are unable to contain waste flows during wet weather. This statement is correct. The Regional Board record contained data regarding surface water releases from MRDR. Containment with respect to ground water is not addressed but, the purpose of the reservoir was to prevent surface water discharges not ground water discharges.

3. Operation plan to prevent migration of hazardous waste to ground water. As its operation plan, EBMUD states that it will continue to operate the pump which recycles mine drainage from MRDR into the Mine Run Creek impoundments. This operation plan may have a small effect on ground water pollution caused by the reservoir because it reduces the hydraulic head from the reservoir driving seepage into the aquifer. This operation plan will not prevent migration of hazardous waste to ground water. The only way to accomplish this objective would be to either eliminate the surface impoundment, construct liners and leachate collection systems to contain the water, or eliminate upstream sources of pollution. Note that even if ground water discharges from MRDR were eliminated, Penn Mine discharges would still cause substantial ground water pollution.

4. Ground water monitoring data. The ground water monitoring data submitted by EBMUD consists of a table listing metals concentrations and pH measurements from a single sampling event on June 16, 1989 at five foot and 16 foot depths. As expected, the concentrations of pollutants in the ground water exceed hazardous levels. Although there was reference to a

drilling log, it was not included as part of the submittal and was not in the record. Information on the location of the well, construction details, sampling protocol, method of analysis, and previous sampling results was not provided. However, the Regional Board did not request any additional information. While the EBMUD technical report is skeletal, it is adequate. It provides sufficient information for the Regional Board to determine whether the surface impoundment is polluting the waters of the state and whether hazardous waste is migrating from the impoundment. The report contains all the elements listed in Section 25208.20.

Additionally, nothing in Section 25208.20 indicates that the technical report must be sufficient to support the environmental benefit determination required by subsection 25208(a). Therefore, the adequacy of the report should not be judged on the basis of whether or not the report could support such a determination. The environmental benefit determination may be based on any evidence in the record.

It is also important to note that EBMUD provided all technical information requested by the Regional Board. Section 25208.20 requires the Regional Board to notify EBMUD of inadequacies in the report. No such notice was provided after EBMUD's final submittal.

In conclusion, the requirements for an exemption from TPCA as specified in Section 25208.20 have been met. The exemption from TPCA granted in Resolution 90-128 is appropriate and proper. Additionally, EBMUD has subsequently prepared a

preliminary ground water investigation at the site and studies to be performed by a private firm under contract with the Regional Board and by USGS will provide a level of information substantially similar to that required in a HAR. (Health and Safety Code Section 25208.8).

Contention: Petitioners contend that MRDR should be subject to a National Pollution Discharge Elimination System (NPDES) permit.

Finding: In September 1990, EPA included the Mokelumne River on the Clean Water Act Section 304(1) (1) (B) "Short List" and also listed MRDR as a responsible point source under Clean Water Act Section 304(1)(1)(C). (33 U.S.C. Section 1314). EPA's determination is appropriate only if, among other things, MRDR is a point source discharging pollutants as that term is used in the Clean Water Act (33 U.S.C. Sections 1314 and 1362(12)). Discharge of pollutants from a point source requires an NPDES permit. (33 U.S.C. 1342)

Both EBMUD and the State Board asked EPA to reconsider its action on several grounds. One argument raised is that there is not a "discharge of pollutants" from MRDR as that term is used in the Clean Water Act. (See National Wildlife Federation v. Gorsuch (D.C. Cir. 1982) 693 F.2d 156; National Wildlife Federation v. Consumers Power Company (6th cir. 1988) 862 F.2d 580).

Currently, EPA is engaged in negotiations with EBMUD, the State Board, the Regional Board, other interested government agencies and Petitioners regarding this issue. Because

negotiations are pending with another administrative agency, it would not be appropriate for this Board to rule on this issue at this time.

Petitioners have filed suit in federal court against EBMUD and the Regional Board regarding this same issue.

(Committee to Save the Mokelumne v. East Bay Municipal Utility District, U.S. District Court Easter district of California, CIV-S-911372 LKK PNN, filed October 4, 1991). This court action is another reason why a State Board determination on this issue is not appropriate.

Petitioner's contention is therefore dismissed.

Additional Considerations. Although Petitioners are seeking the application of TPCA to MRDR, the relief available under TPCA really does not address their stated concern. Petitioners are very much concerned that a catastrophic discharge of toxic AMD into the Camanche Reservoir will injure aquatic life in the Mokelumne River. Eliminating MRDR will not solve that problem. If MRDR and the Penn Mine surface impoundments along with their current contents were to disappear tomorrow, large quantities of acutely toxic amounts of AMD as well as metal bearing sediments would continue to flow into Camanche Reservoir every rainy season. Petitioners seem to recognize this as they have argued that TPCA should apply but that MRDR should continue to be used for storage and treatment (even though application of TPCA would mandate closure of MRDR).

The actual relief being sought by Petitioners appears not to be application of TPCA but instead, the immediate and

continuous removal and treatment of the contents of MRDR and the other impoundments on the site. This Board agrees with Petitioners that the flow of toxic pollutants from Penn Mine into Camanche Reservoir is a serious water pollution problem. The major difference therefore between the relief sought by Petitioners and the conclusions in this order is a difference in timing and selection of remedy to ameliorate the pollution problems at Penn Mine.

Evaluation of interim measures should proceed as rapidly as possible. As already noted there has been an ongoing cooperative effort to identify and implement short-term remedial measures at Penn Mine. Furthermore, this order requires EBMUD to work with State Board and Regional Board staff to identify and implement additional interim measures. EBMUD is also required to present a progress report at a State Board meeting within 90 days. This Board is also considering adoption of a resolution allocating up to \$500,000 from the Water Pollution Cleanup and Abatement Account to be used for additional short-term remedial action to the extent that matching funds are provided by EBMUD.

Petitioners have suggested some possible treatment alternatives. One is the use of a detergent bactericide to halt the action of T. ferrooxidans in MRDR. (Testimony of Dr. Steven Onysko, State Board hearing transcript p.p.106-114). However, this process is not very effective when used on pond water and is experimental as applied in California. (CMW Study p.p. 359; "Immediate Improvements to Minimize Mine Run Dam Reservoir Discharges From Penn Mine", EBMUD, June 1991. Priority

4.3, "1991 Immediate Improvements Report"). Petitioners have also suggested a proprietary treatment process proposed by EnChem. This process was only generally described by EnChem and their proposal contained several caveats. Also, the effectiveness of this process has limitations. (1991 Immediate Improvements Report, Priority 4.6). Both these ideas and many others need to be further evaluated and a process to do this has been described above.

It is important to remember that neither EBMUD nor the State of California has a duty to stop the flow of AMD from New Penn Mine, Inc. property within the Hinkley Run and Mine Run Creek drainage. Neither this Board nor any Regional Board has ever ordered a landowner, who did not generate the pollution, to clean up pollutants flowing within a natural creek bed which flowed through the landowner's property. Although EBMUD does not have a legal duty to cleanup the portion of the Penn Mine site which is not on its property, EBMUD is responsible for protection and management of Camanche Reservoir.<sup>12</sup> The State is concerned with protection of beneficial uses in the Mokelumne River. To that end, in 1977, the Regional Board and DFG and EBMUD undertook a voluntary effort to partially control the discharge of AMD from Penn Mine. It was understood then, as it should be now, that that effort was not intended to stop

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<sup>12</sup> *There is a direct relationship between the amount of pollutants from Penn Mine flowing into Camanche reservoir and the need to maintain water levels in Camanche Reservoir necessary to provide dilution in order to protect aquatic habitat beneficial uses. The water rights proceeding now pending before the State Board will address the issue of water levels in Camanche Reservoir needed to protect beneficial uses.*

discharges from Penn Mine. The fact that releases have occurred does not erase the benefits of that effort. Even if TPCA is interpreted so as to result in the closure of MRDR, TPCA does not create a duty to cleanup the AMD discharge from the entire Penn Mine property.

Given that the Regional Board, State Board and EBMUD are continuing to voluntarily proceed with further remediation of the entire Penn Mine property (because of the complexities of AMD abatement a complete remediation may not be possible), it is reasonable that they select interim remediation which will be consistent with the long-term project and which will not inordinately consume limited funds needed for the larger voluntary remediation effort. It is also reasonable that before these governmental agencies spend taxpayer's money, they adequately assess site conditions and select the most appropriate remedial measures.

### III. SUMMARY AND CONCLUSIONS

1. EBMUD has met all the requirements for an exemption from TPCA under Health and Safety Code Section 25208.20 and Resolution 90-128 of the Regional Water Quality Control Board, Central Valley Region is appropriate and proper.

2. MRDR was constructed and used pursuant to an agreement with the Regional Board to abate a condition of pollution or nuisance resulting from discharges of mining waste from Penn Mine, which mine had ceased operations prior to January 1, 1988.



3. The environmental protection benefit of discharging to MRDR as a remedial measure outweighs any threat to water quality posed by the surface impoundment.

4. The Regional Board waived waste discharge requirements for operation of MRDR and adopted findings in support of its action.

5. The waiver of waste discharge requirements for MRDR is appropriate. EBMUD is undertaking a voluntary monitoring and reporting program. If this voluntary program is not continued, it should be required through an order pursuant to Water Code Section 13267.

6. EBMUD timely submitted an application and technical report and timely submitted all additional information required by the Regional Board.

7. The EBMUD application and technical report were adequate in accordance with the requirements of Health and Safety Code Section 25208.20.

8. The Regional Board and EBMUD have agreed to undertake emergency remedial measures to improve diversion structures, and improve management of MRDR and other Penn Mine structures. This work has already been done, and an ongoing process to evaluate its effectiveness and develop additional interim remedial measures is in place.

9. The Regional Board is negotiating a contract with a firm, which was selected through an RFP process, to do a comprehensive study and project design for remediation of the Penn Mine pollution problem. USGS will also conduct a

hydrogeologic investigation of the Penn Mine site. These combined studies will provide a level of information substantially the same as required for a HAR under Health and Safety Code Section 25208.8.

10. Because the flow of AMD from the Penn Mine site into Camanche Reservoir is a serious water quality problem, additional efforts should be made by EBMUD, Regional Board staff and State Board staff to identify and implement additional short-term methods to mitigate the effects of this pollutant flow.

11. EPA has notified EBMUD that the Mokelumne River has been included on the Clean Water Act Section 304(1)(1)(B) "Short List" and also that MRDR has been listed as a responsible point source under Clean Water Act Section 304(1)(1)(C). (33 U.S.C. Section 1314). EBMUD and the State Board have asked EPA to reconsider this listing. EPA is currently engaged in negotiations regarding this issue with the State Board, the Regional Board, EBMUD, and other interested government agencies and Petitioners.

Petitioners have filed suit in federal court against EBMUD and the Regional Board regarding MRDR and the other surface impoundments located on New Penn Mine, Inc. property.

#### IV. ORDER

IT IS HEREBY ORDERED that

(1) The Regional Board shall ensure that EBMUD continues to undertake a monitoring and reporting program for MRDR. If this voluntary program does not continue, it should be required through an order under Water Code Section 13267.

(2) EBMUD shall work with Regional Board staff and State Board staff to identify and implement, as soon as possible, additional remedial measures to mitigate the effects of AMD flow from the Penn Mine site to Camanche Reservoir.

(3) EBMUD shall report back at the March 4, 1992 meeting of the State Board regarding the actions which have been or which will be taken.

IT IS FURTHER ORDERED that in all other respects the petition is denied.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on December 12, 1991.

AYE:           W. Don Maughan  
                  Edwin H. Finster  
                  Eliseo M. Samaniego  
                  John Caffrey

NO:             None

ABSENT:       None

ABSTAIN:      None

  
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Maureen Marché  
Administrative Assistant to the Board