CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD • CENTRAL VALLEY REGION
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TO: Ruben Moreno
Senior Engineer

FROM: Chris Chalfant
Staff Engineer

DATE: 22 July 1988

SIGNATURE: Chris Chalfant

SUBJECT: INSPECTION OF NEW IDRIA MINE, SAN BENITO COUNTY

BACKGROUND

The New Idria Mine (NIM) is located in the San Benito County town of Idria. At one time the NIM was one of the largest mercury mines in North America, producing mercury ore from 1854 to approximately 1972. Currently the town of Idria and the NIM is owned by New Idria Associates and is leased to Futures Foundation Inc. Approximately 20 people reside in Idria. The NIM is currently regulated by Waste Discharge Requirements, Resolution No. 70-205.

On 11 April 1988, we received a complaint from Mrs. Jane Woods concerning a discharge from the NIM to San Carlos Creek. Mrs. Woods owns property along San Carlos Creek, adjacent and down stream from the NIM.

On 29 April 1988, Anthony Madrano - Regional Board Student Assistant, Robert Lawson - State Board Industrial Hygienist and myself inspected the subject site. The following are my observations and comments.

OBSERVATIONS

1. We observed approximately 50 gpm of clear water draining from the 10 level portal of the NIM. There was a strong hydrogen sulfide odor near the portal. Water sample NIM #1 (refer to attached analytical results) was obtained at this point. The portal had been cemented shut and mine drainage was observed flowing from a cast iron pipe approximately 3 inches in diameter.

2. The mine drainage was observed pooling in an area approximately 100 by 50 yards in size, immediately adjacent to the portal. Orange and yellow bottom deposits were observed in this area. The drainage flowed from this area along a steep narrow channel eroded through mine tailings. Water sample NIM #2 was obtained at the head of this channel. A heavy accumulation of bottom deposits were observed in the channel. The drainage was orange in color at this point.

Reviewed by:				

3. From the mine tailings the drainage flowed past an abandoned settling pond, through a ditch running parallel to New Idria Road and into San Carlos Creek. Water sample NIM #5 was obtained from the mine drainage just prior to being discharged to San Carlos Creek.

4. Upstream from the discharge point, San Carlos Creek was clear and flowing at about 30 gpm. Water Sample NIM #3 was obtained from the creek, upstream from the discharge.

5. Water Sample NIM #4 was obtained from San Carlos Creek below the discharge point. The creek had become orange in color due to the mine drainage. Approximately 80 gpm of water was flowing in San Carlos Creek at this point. More than half of the flow in San Carlos Creek orginated from the mine drainage.

6. Water sample NIM #6 was obtained from a reservoir located on San Carlos Creek approximately 1 mile upstream from the discharge point. The reservoir is currently used to supply drinking water to the town of Idria.

7. San Carlos Creek flows northeast from the NIM, through Mrs. Woods' property, into Silver Creek. Silver Creek flows into the San Joaquin Valley near Panoche Road and I-5. We followed San Carlos Creek to a point approximately 2 miles downstream from the discharge point, where the creek crosses New Idria Road. Water sample NIM #7 and sludge sample NIM #8 were obtained at this point. Sludge sample NIM #8 consists primarily of the orange sandy soil observed along the length of San Carlos Creek. The creek was still orange in color. At a point approximately 8 miles downstream from the discharge point, Silver Creek was observed to be dry.

COMMENTS

Review of the recorded field parameters and analytical results indicate the following:

1. The pH of the mine drainage decreases as it flows from the 10 level portal through the tailings pile to San Carlos Creek.

2. The electrical conductivity of the mine drainage increases as it flows to the discharge point.

3. All water samples were analyzed for 9 inorganic constituents, 6 of which were found at detectable levels. All of the detected inorganic constituents decreased in concentration as the drainage flowed from the 10 level portal to San Carlos Creek.

4. Heavy orange bottom deposits were observed along the drainage channel from the NIM as well as in San Carlos Creek below the discharge point. These deposits are offensive to the eye and inhibit the visual enjoyment of the watershed. They also indicate one adverse affect of the mine drainage on the quality of San Carlos Creek.

5. A review of the background characteristics of San Carols Creek (NIM water sample #3) shows low to non-detected concentrations of Aluminum, Arsenic, Iron, Magnesium, Manganese, and Nickel.

6. A review of the characteristics of the mine drainage being discharged to San Carlos Creek (NIM water sample #5) shows higher levels of those constituents identified in #5 above.

7. Water analysis of San Carlos Creek below the discharge point (NIM water sample #4) clearly indicates the effect of the mine drainage on the Creek.

CONSTITUENT	BACKGROUND NIM #3	DRAINAGE NIM #5	AFTER DISCHARGE NIM#4	DWAL
Aluminum	ND	36.4	22.2	1.0
Iron	0.3	516	326	0.3
Magnesium	213	332	285	—
Manganese	1.4	11.9	7.93	0.05
Nickel	ND	1.4	0.8	0.013

Notes:
- All values mg/l
- ND = Non-Detected
- DWAL = Drinking Water Action Level

8. The Tulare Lake Basin Plan (5D) identifies the beneficial uses of all Coast Range Streams, such as San Carlos Creek, as Agricultural and Industrial. The following limitations may be applicable.

Constituent	Agricultural limits	Industrial limits
Aluminum	1 - 14 mg/l[1]	0.05 mg/l[2]
Iron	(see note 3)	0.1 - 2.0 mg/l[4]
Magnesium	500 mg/l[5]	5 - 30 mg/l[6]
Manganese	0.5 - 500 mg/l[1]	0 - 1.0 mg/l[6]
Nickel	0.5 - 30.0 mg/l[1]	———

Notes:
1. Irrigation Water
2. Laundries and mineral water plants
3. High concentrations may inhibit livestock to drink
4. Process and cooling water
5. Suggested interim threshold limit for livestock
6. Range for various industrial make-up waters

Source: Water Quality Criteria, Mckee and Wolf, 2nd Edition 1974, California State Water Resource Control Board.

9. The discharge of mine drainage to San Carlos Creek is not regulated by a National Pollution Discharge Elimination System (NPDES) permit - which is required for such discharges to surface waters.

10. The discharge is creating a pollution, in that the quality of San Carlos Creek has been altered to a degree which unreasonably affects such waters for beneficial uses. The discharge is also creating a nuisance condition, in that the bottom deposits and discoloration of San Carlos Creek by the discharge is offensive and affects the comfortable enjoyment of the resource. As such, the discharge of mine drainage to San Carlos Creek is in violation of Resolution 70-205, which states:

"1. The waste discharge shall not cause a pollution of ground or surface waters.

2. Neither the treatment facility nor the discharge shall cause any nuisance."

11. Resolution 70-205 was written for an active mine and does not reflect the current status of the NIM. In addition, the Resolution is old and does not reflect the current regulations and policies of the Regional Board.

CONCLUSION

The current discharge from the NIM to San Carlos Creek is affecting the quality of the Creek. I recommend that we request the owners of the NIM to:

1. Submit a report containing a work plan and time schedule for eliminating the existing pollution and nuisance conditions caused by the discharge of mine drainage to San Carlos Creek.

2. Submit a Report of Waste Discharge and filing fee to update the current Waste Discharge Requirements to reflect the current operations at the site and any discharges to San Carlos Creek.

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NEW IDRIA MINE
ANALYTICAL RESULTS
29 APRIL 1988
(all results in mg/l)

SAMPLE #	ALUMINUM	ARSENIC	IRON	MAGNESIUM	MANGANESE	NICKEL
NIM 1	43.2	0.058	786	348	12.9	1.6
NIM 2	56.8	0.002	554	327	11.4	1.5
NIM 3 (background)	ND	ND	0.3	213	1.4	ND
NIM 4	22.2	ND	326	285	7.93	0.8
NIM 5 (discharge)	36.4	0.002	516	332	11.9	1.4
NIM 6	ND	ND	0.5	163	ND	ND
NIM 7	ND	ND	0.13	542	7.5	0.2
NIM 8 (sludge)	ND	ND	6.13	531	11.6	ND

NEW IDRIA MINE
FIELD PARAMETERS
29 APRIL 1988

SAMPLE #	COLLECTION TIME	TEMPERATURE centigrade	ELECTRICAL CONDUCTIVITY microhoms/cm	pH
NIM 1	1100	26	3700	4.15
NIM 2	1200	23	5000	3.5
NIM 3 (background)	1230	15	1500	7.5
NIM 4	1240	18	3500	5.3
NIM 5 (discharge)	1300	20	5000	3.15
NIM 6	1330	15	950	8.9
NIM 7	1500	21	4000	7.65
NIM 8 (sludge)	1500	—	—	—