

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. 98-153

WASTE DISCHARGE REQUIREMENTS  
FOR  
SIERRA PACIFIC INDUSTRIES, INC.  
HAZEL CREEK MINE SITE  
EL DORADO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. Sierra Pacific Industries, Inc. submitted an application for waste discharge requirements (WDRs) for closure of the Hazel Creek Mine on 7 July 1998. The site is an historic gold mine approximately 15 miles east of Placerville and one mile south of Highway 50 in El Dorado County, as shown on Attachment I, which is incorporated herein and made a part of this Order. The site contains mine tailings discharged to six unlined tailings ponds along Hazel Creek. These WDRs prescribe requirements for closure of the ponds and construction of a new waste management unit so as to eliminate the threat of waste discharge to Hazel Creek.
2. The site covers approximately 132 acres in Section 3, T10N, R13E, MDB&M, as shown in Attachment I. All mining facilities and the mine itself are entirely within the following El Dorado County Assessor's Parcel Numbers: 42-021-02-10, 42-021-03-10, 42-021-05-10, and 42-021-07-10.
3. The mine has been worked several times since the discovery of gold around the turn-of-the-century. The primary productive years for the mine were 1948 through 1959 during which it is estimated to have produced about 70,000 tons of ore. Mineral Strategies, Inc. (MSI) re-activated the mine in 1984 after discovery of new gold deposits, operating the ponds under Waste Discharge Requirements (WDRs) Order No. 83-002. The WDRs were rescinded in 1992 after abandonment of the mine and bankruptcy of the owner.
4. In 1988, Georgia Pacific Corporation (GP) acquired surface ownership of the site and in 1995 acquired the mineral rights at public auction. GP cleared the mine structures and in September, 1995 applied for closure WDRs. GP subsequently withdrew its application for WDRs, however, and in March 1997 conveyed the site to Sierra Pacific Industries, Inc. (SPI). SPI is hereafter referred to as the "Discharger".
5. Effective 18 July 1997, the water quality regulations for mining wastes formerly contained in *Chapter 15, Title 23, California Code of Regulations (CCR)*, were re-codified into *Chapter 7, Subdivision 1, Division 2, Title 27, CCR (Title 27)*. *Chapter 15, Title 23, CCR*, therefore, no longer applies to mining wastes.

**DESCRIPTION OF THE SITE**

6. The site includes remnants of historic workings, including the original Hazel Creek Mine adit portal and the foundation of the old stamp mill. Ore from the mine was crushed into fines and run through the shaker to settle out the gold. The waste fines were then discharged in a slurry to the ponds. There are four ponds south of and adjacent to Hazel Creek, and two ponds north of Hazel

Creek, adjacent to an unnamed seasonal drainage course tributary to Hazel Creek. Since the mine is no longer operating the ponds have dried and are now waste piles. See Attachment II, Site Map which is incorporated herein and made a part of this Order.

7. The site is drained by Hazel Creek, which flows into Jenkinson Lake (the Sly Park Reservoir) one mile west of the site, thence to the Cosumnes River, tributary to the San Joaquin River. The Third Edition of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) states that the existing beneficial uses of Hazel Creek and Jenkinson Lake are municipal and domestic supply, agriculture, recreation, freshwater habitat, spawning and wildlife habitat.
8. The site is within a 100-year floodplain. Flood stage flow approaches 200 cfs. Normal flow of Hazel Creek is one to three cubic feet per second (cfs). There are several natural springs of groundwater in the area which feed into the creek and maintain a minimum flow during most of the dry season. Precipitation in the area averages about 50 inches per year.
9. The depth to ground water at the site is about 50 to 55 feet below ground surface except where groundwater is perched or there are natural springs. The ground water gradient direction is generally to the southwest. The beneficial uses of the ground water in the Sacramento River Basin are municipal and domestic, agricultural, industrial service, and industrial process supply.
10. The area surrounding the site and the Hazel Creek watershed is forested Sierra foothill terrain which is managed timberland. The site elevation is about 4,000 feet above mean sea level (MSL).

#### **WASTES AND THEIR CLASSIFICATION**

11. The tailings contain significant amounts of iron (as iron pyrite) and lead (as galena), which, if left in place, could potentially leach out with storm water into Hazel Creek, or percolate through rock fractures into ground water. Acidic conditions generated by the sulfides in these deposits could accelerate this process. Their location in a flood plain, wind-blown erosion from the ponds, and sloughing of the piles into the creek, also represent a water quality threat.
12. On 22 September 1997, the Executive Officer issued Cleanup and Abatement Order No. 97-712 (C&A), based on a threat to water quality from the unlined tailings ponds. The C&A required the Discharger to obtain a storm water permit, implement interim remedial measures, conduct a site assessment, clean up the wastes, and close the site.
13. As an interim remedial measure, the Discharger installed clay plugs in the three mine portals. The Discharger also implemented best management practices to minimize the exposure of existing wastes to storm water.
14. The results of the site assessment are summarized in the following table:

**TABLE I: SITE ASSESSMENT RESULTS**  
**Waste Extraction Test (WET) - Lead**

**Using De-ionized Water**

<u>Tailings Pond</u>	<u>Tailings Volume<sup>1</sup> (cu yds)</u>	<u>Acid Generating Potential<sup>2</sup></u>	<u>Total Lead (mg/kg)</u>	<u>STLC (mg/l)</u>	<u>Soluble Designated Level<sup>4</sup> (mg/l)</u>	<u>Soluble Lead (de-ionized H<sub>2</sub>O) Maximum Average (mg/l)</u>	<u>Soluble Lead (de-ionized H<sub>2</sub>O) (mg/l)</u>
1	5,045	3.9	632	5.0	0.63	8.9	3.7
2	6,800	n/s <sup>3</sup>	133	5.0	---	3.4	1.1
3	7,650	---	340	5.0	---	5.6	2.0
4	2,530	n/s	169	5.0	---	0.4	0.4
5	2,105	n/s	198	5.0	---	0.4	0.23
6	1,380	2.5	134	5.0	---	0.57	0.4

1. Approximately 1.5 tons per 1000 cu yds.
2. Measured in tons of CaCO<sub>3</sub> per 1000 tons of material
3. n/s - not sampled
4. Estimated level for all waste consolidated in WMU No. 1 (reconstructed Tailings Pond #1)

The results of the site assessment confirmed earlier sampling which indicated that the mine wastes are mildly acid-generating, producing an average leachate pH of about 5 and an acid-generating potential (AGP) up to 3.9 tons of calcium carbonate per 1,000 tons of tailings. Soluble lead was detected above water quality objectives using the designated level methodology (DLM) and the WET test with de-ionized water.

15. The wastes in the tailings ponds are a mixture of “Group B” and “Group C” mining wastes using the criteria set forth in Sections 22480 of Title 27, CCR. There may also be pockets of “Group A” wastes in the ponds that have not been quantified.

**WASTE MANAGEMENT UNIT CONSTRUCTION & CLOSURE**

16. Per the Final Closure Plan (FCP), five of the existing six tailings ponds will be clean-closed and the wastes re-consolidated into a new closure waste management unit (WMU) to be constructed from existing Pond 1. The closure WMU will be a Group B Waste Pile and will incorporate the existing Pond 1 wastes.
17. The closure WMU will be sited above the 100-year peak stream flow level of Hazel Creek and its tributary in accordance with Section 22490(b) of Title 27. See Attachment III, Facility Map.
18. The disposal area will be excavated and graded so that wastes are placed on level ground. Benches will be cut into slopes greater than that for a 6:1 horizontal-to-vertical ratio. A foundation layer consisting of one-foot of compacted soil will then be placed over the area prior to waste disposal.
19. The Discharger has adequately demonstrated through plans for diversionary measures, drainage controls, and vegetative cover that leachate will not form or escape from the closure WMU. Discharge Specification No. 6 exempts the WMU from the need for a prescriptive liner and

leachate collection system pursuant to Section 22470(b) of Title 27, but requires the Discharger to develop a contingency plan for alternative containment in the event the proposed system fails to prevent the formation or escape of leachate from the WMU. Monitoring and Reporting Program No. 98-153 further requires adequate closure and post-closure monitoring of the WMU to confirm that in the event that leachate does form, it does not escape the unit.

20. The Discharger plans to mix the wastes with lime prior to re-consolidation in order to dilute the wastes and neutralize their acid-generating potential. It is anticipated that such treatment will reduce any small quantities of "Group A" wastes that may be present to the "Group B" or "Group C" level. Enough lime will be mixed to achieve a minimum neutralization ratio of 3:1. The treated waste will then be placed in the waste pile in eight-inch lifts. After treatment with lime, the tailings in the closure WMU will be "Group B" and/or "Group C" mining wastes under Title 27.
21. After treatment and re-consolidation of the tailings into the closure WMU, the Discharger plans to install a one-foot thick compacted soil cover, overlain by a one-foot vegetative layer using native materials. Staff has determined that this plan should be adequately protective of water quality.

#### **CEQA AND OTHER REFERENCES**

22. The action to adopt WDRs for the facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.) as an ongoing project, in accordance with Title 14, CCR, Section 15301.
23. This Order implements:
  - a. the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin, Third Edition, and
  - b. the performance goals of Title 27 California Code of Regulations (CCR) Division 2 Subdivision 1, effective 18 July 1997, and subsequent revisions.
24. The Board has notified the Discharger and interested agencies and persons of its intention to revise the WDRs for this facility.
25. In a public hearing, the Board heard and considered all comments pertaining to this facility and discharge.

**IT IS HEREBY ORDERED** that Sierra Pacific Industries, Inc. (SPI), and its agents, successors and assignees, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

#### **A. DISCHARGE PROHIBITIONS**

1. The discharge of 'hazardous', 'designated', and other solid wastes, as defined in Title 27, except for mining wastes, is prohibited.

2. The discharge of wastes not generated from the Hazel Creek Mine, and its associated adits, shafts, and tunnels, except as necessary for waste treatment and closure, is prohibited.
3. The discharge of mining wastes generated subsequent to 1987 is prohibited.
4. The discharge of Group A or Group B mining wastes, except for those tailings pond wastes which are treated as described in Finding No. 20, is prohibited.
5. The discharge of acid-generating mine wastes, except for those tailings pond wastes which are treated as described in Finding No. 20, is prohibited.
6. The discharge of treated or untreated wastes beyond the limits of WMU No. 1 is prohibited.
7. The discharge of wastes to the former tailings ponds, except Pond No. 1 as re-constructed, is prohibited.
8. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids) to a WMU is prohibited.
9. The discharge to a WMU of solid waste containing free liquid or moisture, in excess of the waste's moisture holding capacity, is prohibited.
10. The discharge of wastes within 100 feet of Hazel Creek, is prohibited,
11. The discharge of mining waste or leachate to surface or groundwater is prohibited.
12. The discharge of waste to ponded water from any source is prohibited.
13. The use or storage of any leaching chemical reagents onsite is prohibited.

**B. DISCHARGE SPECIFICATIONS**

1. The treatment or disposal of waste shall not cause pollution or a nuisance as defined in the California Water Code, Section 13050.
2. The discharge of wastes shall not cause water quality degradation by allowing a statistically significant increase over background or baseline concentrations as determined in accordance with Monitoring and Reporting Program No. 98-153.
3. Wastes from the tailings ponds shall only be discharged into, and shall be confined to, the closure WMU specifically designed for their containment.
4. Waste disposal in the closure WMU shall be limited to the wastes removed from Tailings Pond Nos. 2 through 6, and the waste formerly in Tailings Pond No. 1.
5. Tailings Pond Nos. 2 through 6 shall be clean closed and graded in accordance with the FCP and site reclamation plan.

**WMU Design & Construction**

6. Pursuant to Section 22470 (b), the closure WMU, a Group B waste pile, shall be exempt from the prescriptive liner and leachate collection system requirements of Section 22490 (f)

and (g), however, pursuant to Section 22490 (f)(5), the Discharger shall develop a Contingency Plan for alternative waste containment. The plan shall be submitted by **1 October 1998** and shall be implemented if there is a failure of treatment or the waste containment system.

7. The final cover of the closure WMU shall be designed and constructed to function with minimum maintenance and consists, at a minimum, of a one-foot thick compacted soil liner, and a one-foot thick vegetative soil layer, as proposed in the FCP.
8. All WMU containment structures shall meet the general criteria set forth in Section 20320 of Title 27.
9. WMU containment structures shall be designed and constructed under the direct supervision of a California registered civil engineer, or a certified engineering geologist, and shall be certified by that individual as meeting the prescriptive standards (except where exempt or approved as an engineered alternative design herein) and performance goals of Title 27 prior to waste discharge.
10. The WMU slopes shall not exceed a horizontal-to-vertical ratio of 1.75:1, without benching, to ensure slope stability. Other areas with slopes greater than ten percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to prevent such erosion.
11. Inundation and washout - The closure WMU shall be designed, constructed, maintained, and operated to prevent inundation or washout due to floods with a 100-year return period.
12. Diversion & Drainage Controls - The WMU shall be designed and constructed with diversion and drainage controls sufficient to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 10-year, 24-hour precipitation conditions.
13. Ponding & Infiltration - The WMU slopes shall not be less than three percent grade to prevent ponding and infiltration.
14. Surface drainage shall not be allowed to contact or percolate through wastes.

#### **C. RECEIVING WATER LIMITATIONS**

1. The concentrations of waste constituents, including all monitoring parameters and Constituents of Concern, passing the Points of Compliance in receiving waters shall not exceed the Concentration Limits established as in the "Water Quality Protection Standard" established, pursuant to Monitoring and Reporting Program No. 98-153, which is attached to and made part of this Order.
2. Any disturbance of land shall not increase the turbidity of the receiving waters by more than 20% over immediate upstream levels.

#### **D. PROVISIONS**

1. The Discharger shall comply with these WDRs and the attached Monitoring and Reporting Program No. 98-153. The Discharger shall further comply with all applicable provisions of Title 27 not specifically referred to in this Order.
2. In accordance with these WDRs and Cleanup and Abatement Order No. 97-712, the Discharger shall complete WMU construction by **1 September 1998**, and complete cleanup and abatement of mining wastes and site closure by **1 October 1999**.
3. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated August 1997, which are hereby incorporated into this Order.
4. After closure of the existing ponds and completion of a new WMU, the site shall be reclaimed in accordance with an approved Mining Reclamation Plan, which meets the requirements of the Surface Mining and Reclamation Act of 1975 (SMARA), the annual SMARA reporting requirements of §2207 of the Public Resources Code, and Title 14, CCR, Chapter 8, Subchapter 1, Article 1, as applicable. The reclamation of the mine shall be under the direct supervision of a California registered civil engineer or certified engineering geologist.
5. During reclamation activities, vegetation shall be planted and maintained over the site to prevent erosion and mobilization of wastes. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative layer thickness. If vegetation is not used to prevent erosion in any part of the site where erosion could potentially threaten water quality, including the area of the former tailings ponds and closure WMU, an engineered alternative shall be submitted to the Board for review and approval prior to closure of the landfill.
6. The closed mine shall be provided with at least two permanent monuments, installed by a licensed land surveyor, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period.
7. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of these WDRs, Cleanup and Abatement Order No. 97-712, and/or Title 27.
8. The Discharger shall immediately notify the Board of any flooding equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.
9. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor surface waters per Monitoring and Reporting Program No. 98-153 throughout the post-closure maintenance period.
10. The post-closure maintenance period shall continue until the Board determines that the wastes remaining at the site no longer threaten water quality.
11. The Discharger shall have the continuing responsibility to assure protection of usable waters from discharged wastes, including leachate, that may be generated and discharged during the

closure, and post-closure maintenance period of the mine and during subsequent use of the property for other purposes.

12. The Discharger shall notify the Board in writing of any proposed change in ownership or responsibility for construction or operation of the site. The Discharger shall also notify the Board of a material change in the character, location, or volume of the waste discharge and of any proposed modification to the closure plans. This notification shall be give 90 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these WDRs.
13. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Board.
14. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
15. The Board will review this Order periodically and will revise these requirements when necessary.

I GARY M. CARLTON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 24 July 1998.

Original signed by  
GARY M. CARLTON, Executive Officer



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 98-153

FOR  
SIERRA PACIFIC INDUSTRIES, INC.  
HAZEL CREEK MINE SITE  
EL DORADO COUNTY

Compliance with this Monitoring and Reporting Program, and with the companion Standard Provisions and Reporting Requirements, is ordered by Waste Discharge Requirements Order No. 98-153. Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements, constitutes noncompliance with the WDRs and with the Water Code, which can result in the imposition of civil monetary liability.

**A. REPORTING**

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the WDRs. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Historical and current monitoring data shall be graphed at least once annually. Graphs for the same constituent shall be plotted at the same scale to facilitate visual comparison of monitoring data. A short discussion of the monitoring results, including notations of any water quality violations shall precede the tabular summaries.

Detection monitoring reports shall be submitted **semi-annually** to the Board by the **15th day** of the month following the calendar month in which the samples were taken. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Board.

An **Annual Report** shall be submitted to the Board which summarizes the monitoring results for the prior four quarters and contains both tabular and graphical summaries of the monitoring data. The report shall be submitted to the Board by **31 January** each year.

**B. REQUIRED MONITORING REPORTS**

**1. Water Quality Protection Standard Report**

Any changes to the water quality protection standard are to be included in the Annual Report.

**2. Detection Monitoring Program**

The Discharger shall submit the results of detection monitoring in accordance with the schedules specified in this Monitoring and Reporting Program. Unless otherwise required, **monitoring reports shall be submitted** to the Board by the **15th day** of the month following the calendar semester in which the samples were taken or observations made.

### 3. **Annual Report**

The Annual Report shall summarize the monitoring results for the year and, in the event of a release, shall include a discussion of the progress toward re-establishment of compliance with waste discharge requirements and water quality protection standard. The Discharger shall submit the Annual Report as specified in the Standard Provisions and Reporting Requirements.

### 4. **Constituents-of-Concern (COC) 5 Year Report**

In the absence of a *new* release, the Discharger shall submit reports of the results of groundwater detection monitoring for the Constituents of Concern every 5 years, or more frequently if required under the evaluation monitoring program. The detection monitoring for the COC Report shall alternate between the Fall and Spring seasons. The COC Report may be combined with a Detection Monitoring Report or an Annual Summary Report having a similar due date.

Each monitoring report shall include a summary and certification of completion of all **Standard Observations** for the mine, for the perimeter of the mine, and for the receiving waters. The standard observations shall be performed on a semi-annual basis and shall include those elements as defined in the Standard Provisions and Reporting Requirements.

## C. **OTHER REQUIRED REPORTS**

### 1. **Notification of Release and Retest**

If the Discharger, through a detection monitoring program, or Board Staff, finds that there is a measurably significant increase in indicator parameter or waste constituents over the water quality protection at or beyond the points of compliance standard (i.e., measurably significant evidence of an exceedence or release), the Discharger shall:

- a. immediately notify Board staff by telephone or fax of the exceedence,
- b. follow up with written notification (or acknowledgment of the Board's finding) within seven days,
- c. within 30 days of the initial finding, resample for the constituent(s) or parameter(s) at the point where the standard was exceeded,
- d. within 60 days of the initial finding, submit the results of the resampling and statistical analysis, indicating whether or not an exceedence or release was confirmed by the retest.

### 2. **Amended ROWD - Evaluation Monitoring Program**

Within 30 days upon confirmation of a release or exceedence by retest, the Discharger shall submit an amended Report of Waste Discharge proposing an Evaluation Monitoring Program (EMP), as part of a Joint Technical Document (JTD) per Section 20420 of Title 27. The EMP shall be designed to characterize the release, including its source(s), waste constituents, magnitude, and extent.

### 3. **Amended ROWD - Corrective Action Program**

Within 120 days upon confirmation of a release or exceedence, the Discharger shall submit an amended Report of Waste Discharge proposing a Corrective Action Program, including a monitoring program, as part of a Joint Technical Document (JTD) per Section 20425 of Title 27.

**D. REQUIRED MONITORING PROGRAMS**

**1. Solid Waste Monitoring Program**

The Discharger shall monitor all wastes removed from, or discharged to the mine WMU , throughout the closure period on a monthly basis and report to the Board as follows:

**Table I: Mine Waste Monitoring**

<u>Parameter</u>	<u>Units</u>	<u>Reporting Frequency</u>
Quantity discharged	cubic yards or tons	Semi-annual
Type of material discharged	---	Semi-annual
Source of Material Discharged	---	Semi-annual
Elevation of discharge	feet & tenths MSL	Semi-annual
Capacity of mine module remaining	percent	Semi-annual

**2. Detection Monitoring - General**

The Discharger shall perform Detection Monitoring on all media potentially affected by a release, including surface water, groundwater, and the unsaturated zone. For any given monitored medium, a sufficient number of samples shall be taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Reporting Period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

The Discharger shall use a Board-approved statistical (or non-statistical) procedure to determine whether there has been a measurable (statistically significant) increase in a constituent over the water quality protection standard, as set forth in Section 20415(e)(5) of Title 27.

**3. Detection Monitoring - Surface Water**

Hazel Creek shall be sampled upstream and downstream of the waste management facility at the locations where the creek enters and leaves the facility boundary. The location where Hazel Creek leaves the boundary constitutes the point of compliance for surface waters. Surface water sampling shall be conducted semi-annually. Surface water sampling may be conducted during storm water sampling events under the general storm water permit. Surface water samples shall be analyzed for the following:

**Table II: Surface Water Monitoring**

**Inorganics**

<u>Parameter/Constituent</u>	<u>Units</u>	<u>Frequency</u>
Alkalinity	mg/l	semi-annually
Bicarbonate	mg/l	semi-annually
Carbonate	mg/l	semi-annually

Chlorides	mg/l	semi-annually
<u>Parameter/Constituent</u>	<u>Units</u>	<u>Frequency</u>
Hardness (as CaCO <sub>3</sub> )	mg/l	semi-annually
Nitrate (as N)	mg/l	semi-annually
pH (field)	pH units	semi-annually
Specific Conductance (field)	µmhos/cm	semi-annually
Sulfate	mg/l	semi-annually
Total Dissolved Solids	mg/l	semi-annually
Temperature	° C	semi-annually
Total Organic Carbon	mg/l	semi-annually
Turbidity	Turbidity Units	semi-annually

### **Metals**

<u>Parameter/Constituent</u>	<u>Units</u>	<u>Frequency</u>
Dissolved Iron	mg/l	semi-annually
Dissolved Lead	mg/l	semi-annually
Sulfides (including H <sub>2</sub> S)	presence or absence	semi-annually

The Discharger shall determine at each sampling whether there is a statistically significant increase over water quality protection standards for each parameter and constituent analyzed. Adjustments in these assignments may be necessary due to seasonal gradient changes or a determination of spatial variability. If a release is detected at the downstream sampling point, the Discharger shall proceed with an Evaluation Monitoring Program to determine the source(s) and extent of the release.

## **E. WATER QUALITY PROTECTION STANDARD**

The Water Quality Protection Standard (Standard) consists of the following elements:

- Constituents of Concern;
- Concentration Limits;
- Monitoring Points;
- Points of Compliance; and
- Compliance Period.

Each of these is described as follows:

### **1. Constituents of Concern**

The 'COC list' (list of Constituents of Concern required under Section 20395 Title 27) shall include all Title 22 metals and the monitoring parameters for surface water monitoring listed above. The Discharger shall monitor all COCs every five years under the detection monitoring program, or more frequently as required under evaluation monitoring.

### **2. Concentration Limits**

The Concentration Limit for any given Constituent of Concern or Monitoring Parameter in Hazel Creek shall be the background level as measured upstream of the facility. Seasonal concentration limits may need to be developed for each constituent.

**3. Monitoring Points**

Surface Water - as shown on Attachment B  
Storm Water - per General Permit

**4. Points of Compliance**

Surface Water - same as monitoring points  
Storm Water - storm water outfall(s)

**5. Compliance Period**

The Compliance period is the number of years equal to the active life of the mine facility plus the closure period. Each time the WQPS is exceeded (i.e., a release is discovered), the mine begins a Compliance Period on the date the Board directs the Discharger to begin an Evaluation Monitoring Program. If the Discharger's Corrective Action Program (CAP) has not achieved compliance with the Standard by the scheduled end of the Compliance Period, the Compliance Period is automatically extended until the mine has been in continuous compliance for at least three consecutive years.

The Discharger shall implement the above monitoring program on the effective date of this Order.

Ordered by: \_\_\_\_\_ Original signed by \_\_\_\_\_  
GARY M. CARLTON, Executive Officer

\_\_\_\_\_  
24 July 1998

(Date)

## INFORMATION SHEET

SIERRA PACIFIC INDUSTRIES, INC.  
HAZEL CREEK MINE CLOSURE  
EL DORADO COUNTY

The Hazel Creek Mine site is an historic gold mine approximately 15 miles east of Placerville and one mile south of Highway 50 in El Dorado County. The site is on managed timberland owned by Sierra Pacific Industries, Inc. and contains mine tailings discharged to six unlined tailings ponds along Hazel Creek. The tailings contain significant amounts of iron (as iron pyrite) and lead (as galena), which if left in place could potentially leach out with storm water into Hazel Creek, or percolate through rock fractures into ground water. These WDRs prescribe requirements for closure of the ponds and construction of a new waste management unit so as to eliminate the threat to Hazel Creek.

The mine has been worked several times since the discovery of gold around the turn-of-the-century. The primary productive years for the mine were 1948 through 1959 during which it is estimated to have produced about 70,000 tons of ore. Mineral Strategies, Inc. (MSI) re-activated the mine in 1984 after discovery of new gold deposits, operating the ponds under Waste Discharge Requirements (WDRs) Order No. 83-002. The WDRs were rescinded in 1992 after abandonment of the mine and bankruptcy of the owner. In 1988, Georgia Pacific Corporation (GP) acquired surface ownership of the site and in 1995 acquired the mineral rights at public auction. GP cleared the mine structures but in March 1997 conveyed the site to Sierra Pacific Industries, Inc.

In 1997, the Executive Officer issued Cleanup and Abatement Order No. 97-712 (C&A), which required the Discharger to conduct a site assessment, clean up the wastes, and close the site. The results of the site assessment confirmed earlier sampling which indicated that the mine wastes are mildly acid-generating, producing an average leachate pH of about 5 and an acid-generating potential (AGP) up to 3.9 tons of calcium carbonate per 1,000 tons of tailings. Soluble lead was detected above water quality objectives using the designated level methodology (DLM) and the WET test with de-ionized water.

Since the existing tailings ponds are in the flood plain of Hazel Creek, the WDRs prescribe requirements for the removal of wastes from the existing tailings ponds and the construction of a new waste management unit on higher ground. The new WMU will be a Group B Waste Pile under Title 27, constructed from an existing tailings pond (Pond 1). The Discharger plans to mix the wastes with lime prior to re-consolidation in order to dilute the wastes and neutralize their acid-generating potential. After treatment and re-consolidation of the tailings into the closure WMU, the Discharger plans to install a one-foot thick compacted soil cover, overlain by a one-foot vegetative layer using native materials. Staff has determined that this plan should be adequately protective of water quality.

Hazel Creek flows into Jenkinson Lake (the Sly Park Reservoir) one mile west of the site, thence to the Cosumnes River, tributary to the San Joaquin River.