

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

ORDER NO. 87-53

WASTE DISCHARGE REQUIREMENTS  
FOR  
BAGDAD CHASE MINE  
BENTLEY RESOURCES U.S., INC.  
South of Ludlow - San Bernardino County

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. Bentley Resources U. S., Inc. (hereinafter also referred to as the discharger), P.O. Box 10108, Suite 1540, 609 Granville St., Vancouver, B.C. V7Y1C6, submitted a Report of Waste Discharge dated March 10, 1987 for the proposed mining operation.
2. The discharger proposes to recover gold and silver from mined ore by leaching cyanide solution through crushed ore in a series of steel tanks. The proposed quantity of ore to be processed is 115,000 tons annually over a period of six years. The cyanide solution would contain 1 gm/liter NaCN and would be maintained at a pH of 11.0. Following leaching, the pregnant solution and solids would be separated in a thickener. The clarified pregnant solution would be routed to the precipitation circuit, where the precious metals would be recovered by precipitation with zinc dust. The barren solution from the precipitation circuit would be recycled to the leach circuit for reuse. The tailings solids would be routed to the tailings washing and filtration circuit for removal of both the metal values for recovery and the cyanide for recycle to the leach circuit makeup water. The tailings would be detoxified in tanks until the residual cyanide content or other hazardous components is below the acceptable limits. The detoxified tailings would then be replaced in the pit area from where the ore was extracted. The mine site is to be located in the NE 1/4 of Section 8, T6N, R8E, SBB&M.
3. The discharger proposes to process and treat the ore either in steel tanks or in wood stave tanks which are lined with a 140 mil high-density polyethylene liner.
4. The discharger proposes to place a synthetic liner under the entire processing facilities.
5. The discharger states that cyanide destruction-control will be conducted by either one or a combination of the following methods:
  - A. Chlorination
  - b. Oxidation with SO<sub>2</sub>
6. The Water Quality Control Plan for the Colorado River Basin Region of California was adopted by the Regional Board on November 14, 1984. The Basin Plan delineates the location of the discharge to be in the Bristol Hydrologic Unit.

*Rescinded*  
*09-19-90*

7. The beneficial uses of the ground water of the Bristol Hydrologic Unit are:
  - a. Municipal supply
  - b. Industrial supply
  - c. Agricultural supply
8. The discharger reports the depth to ground water at the site to be in excess of 300 feet. The supply water used for the processing and treatment of ore would be hauled by truck from Newberry Springs, a distance of 40 miles.
9. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge.
10. The Board in a public meeting heard and considered all comments pertaining to the proposed discharge.
11. The San Bernardino County Environmental Analysis Division approved a Mitigative Negative Declaration PHSA/83-0447/DO682-222N (approval date April 20, 1984) for this proposed mining operation. The Regional Board has reviewed this Negative Declaration. The below waste discharge requirements are designed to assure against any significant adverse effects on water quality.

IT IS HEREBY ORDERED, that the discharger shall comply with the following:

A. Discharge Specifications

1. Neither the mining process nor the discharge of wastewater or other wastes shall create a pollution or a nuisance as defined in Division 7 of the California Water Code.
2. The cyanide solution and slurry shall be contained only in the processing and treatment system or in leakproof containers.
3. There shall be no wind transport of cyanide solution or ore containing cyanide solution away from the mill site facilities.
4. The entire processing area shall be underlain with a synthetic liner of at least 40-mil thickness to contain any spillage or leakage of process solution. Exposed portions of the synthetic liner shall be made of reinforced, weather-resistant material of at least 36-mil thickness.
5. Adequate measures shall be taken to ensure that the synthetic liners will not be punctured for the duration of this activity.
6. There shall be no discharge of process wastewater containing free cyanide in excess of 10 mg/l, or any other substance in hazardous concentrations, as defined under Article 11, Division 4, Title 22 of the California Administrative Code, at any location without prior approval by the Regional Board.
7. All industrial waste materials, used cyanide containers, or other hazardous products shall be discharged at a waste management facility approved to receive these waste materials, except that the adequately detoxified waste ore may be discharged into the area from which it was extracted.

8. Adequate measures shall be taken to assure that unauthorized persons and large animals are effectively excluded from the processing area.
9. The entire processing area shall be protected from any run-on, washout, or erosion which could occur as a result of floods having a predicted frequency of once in 100 years.
10. Prior to discharge, the ore tailings shall be detoxified to reduce the concentration of free cyanide to 10 mg/l or less and shall be treated as necessary to reduce the concentration of any remaining dissolved metals to below hazardous level, as specified under Article 11, Division 4, Title 22 of the California Administrative Code. The detoxified ore tailings shall meet the requirements for classification as a Group C mining waste as prescribed in Section 2571 of Subchapter 15, Chapter 3, Title 23 of the California Administrative Code.
11. The ore tailings shall not be placed in perennial, intermittent, or ephemeral stream channels unless provision is made to divert runoff around the waste in a non-erosive manner. The tailings shall not be placed where it can be eroded by streamflows or cause accelerated streambank erosion.
12. All sampling, including sample preservation, storage and analyses shall be conducted in accordance with current EPA procedures or in accordance with the then-current edition of Standard Methods for the Examination of Water and Wastewater. All hazardous waste chemical analyses shall be conducted at a laboratory certified by the State Department of Health Services or as approved by the Regional Board's Executive Officer.

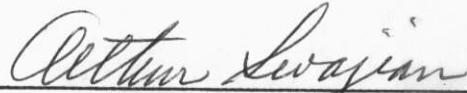
#### B. Provisions

1. At least 60 days<sup>1</sup> prior to commencement of construction, the discharger shall submit to the Regional Board for approval by the Executive Officer a technical report which includes a hydrology report in accordance with San Bernardino County Flood Control District procedures and a plan detailing the proposed construction of the tanks, containment system, liner protection, and flood protection facilities.
2. At least 10 days prior to commencement of operations, the discharger shall submit to the Regional Board a certificate, signed by a California Registered Civil Engineer, stating that the processing and containment facilities are constructed in accordance with the technical report as approved by the Regional Board's Executive Officer to meet the requirements of this Order.
3. At least 5 days prior to placing the synthetic liner over the base material, and at least 10 days prior to loading ore onto the tanks, the discharger shall notify the Regional Board to allow sufficient time to schedule a staff evaluation of the construction and inspection procedures utilized by the discharger.
4. The discharger shall comply with the "Monitoring and Reporting Program No. 87-53", and future revisions thereto, as specified by the Regional Board's Executive Officer. The monitoring reports shall be certified to be true and correct, and signed, under penalty of perjury, by an authorized officer of the company.

<sup>1</sup>Unless a lesser period is approved by the Executive Officer.

5. If conditions warrant, the Regional Board's Executive Officer may require the discharger to construct a vadoze zone and ground water monitoring system, and the "Monitoring and Reporting Program No. 87-39" shall therefore be revised accordingly.
6. Prior to any modifications of this facility which could result in material change in the quality or quantity of wastes discharged, quantity of ore processed, type of leachant used, or any material change in the location of discharge, the discharger shall report thereon to the Regional Board.
7. As proposed by the discharger and as stated in the findings, the entire processing and treatment operation shall take place in tanks. Any deviation from this proposal shall require the discharger to submit to the Regional Board a report of waste discharge and a technical report describing the new mode of operation.
8. In the event of any change in control or ownership of land or waste disposal facilities owned or controlled by the discharger, the discharger shall:
  - a. Notify this Regional Board of such change; and
  - b. Transmit a copy of this Order to the succeeding owner or operator, and forward a copy of the transmittal letter to this Regional Board.
9. At least 30 days prior to commencement of operations, the discharger shall submit to the Regional Board written adequate assurance that \$10,000 is committed, upon abandonment of facilities, to ensure neutralization of all cyanide, plus cleanup and closure of the processing and tailings disposal sites in a manner that will not adversely affect water quality.
10. The discharger shall process no more than one million tons of ore under this Order.
11. Lack of construction or operational activity on the site for a period of one year after the effective date of this Order shall constitute abandonment for the purpose of requiring any necessary cleanup or closure, and for subsequent rescinding of this Order.
12. The discharger shall immediately inform the Executive Officer of any spillage beyond any of the containment facilities or elsewhere at the site, and of storm damage to any of the containment facilities along with a proposal to correct same.
13. At least 30 days prior to cessation of operation and permanent closure of the facilities, the discharger shall submit a closure plan for approval by the Regional Board's Executive Officer.

I, Arthur Swajian, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on May 20, 1987.

  
Executive Officer



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

**MONITORING AND REPORTING PROGRAM NO. 87-53**

**FOR**

**BAGDAD CHASE MINE**

**BENTLEY RESOURCES U.S., INC.**

**South of Ludlow - San Bernardino County**

**Mine Site: Portion of the NE 1/4 of Section 8, T6N, R8E, SBB&M**

**MONITORING**

**Monitoring and Reporting No. 1**

The discharger shall submit to the Regional Board monthly reports containing the following information:

- a. The current status of mining operations - whether the operation is active or inactive.
- b. An estimate of the total amount of ore (tons) that has been processed to date.
- c. The results of analysis for free cyanide from each batch of detoxified ore tailings prior to discharge.

**Monitoring and Reporting No. 2**

- a. Immediate reporting of any accidental spillage or release of waste material, including immediate measures being taken to correct same and limit detrimental effects.
- b. Upon request from this Regional Board's Executive Officer, the discharger shall furnish special technical and/or monitoring reports on the treatment and discharge of wastes.
- c. At least thirty (30) days prior to any proposed discharge of wastewater outside the containment system, the discharger shall submit a copy of the results of analysis of cyanide or other hazardous substances that may be contained in the wastewater for review and approval by the Regional Board's Executive Officer.
- d. Report of completion of cleanup of premises shall be submitted to the Regional Board in writing within one week following completion of work.

### Reporting

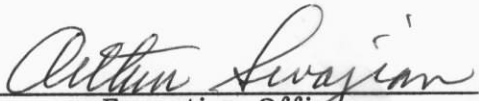
The above monitoring program shall be implemented immediately upon adoption of this Order.

Monthly reports for Items 1a, b, and c (above) shall be submitted to the Regional Board by the 15th day of the following month. Reports for Item 2a (above) shall be forwarded immediately and if at all possible shall be preceded by phone communication to the Regional Board's office, phone no. (619) 346-7491. Copies of the reports submitted to the Board pursuant to this Monitoring and Reporting Program shall be maintained at the operations site for a period of one year, and shall be made available to staff of the Regional Board upon request.

Mail reports to:

California Regional Water Quality Control Board  
Colorado River Basin Region  
73-271 Highway 111, Suite 21  
Palm Desert, CA 92260

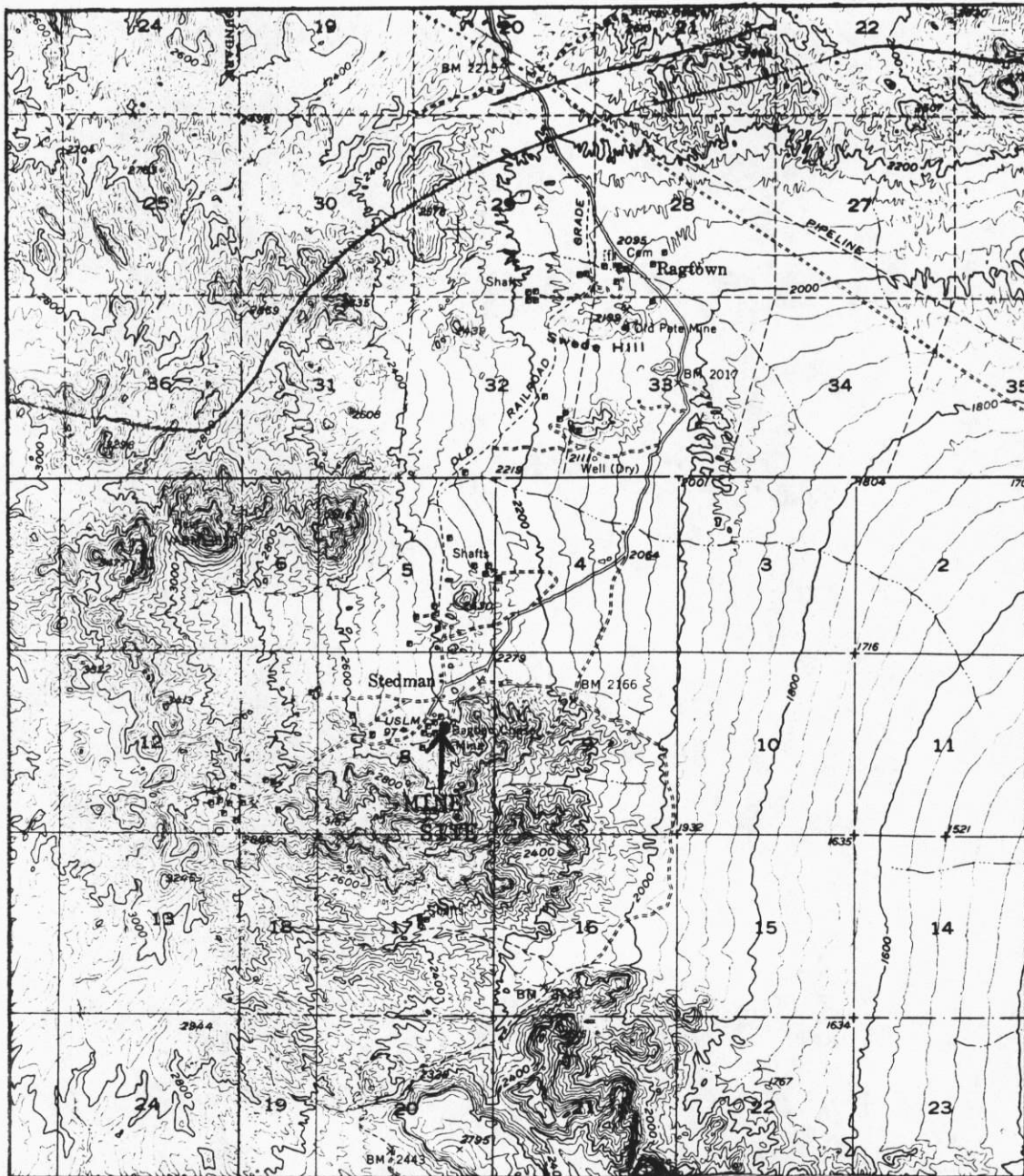
Ordered By:

  
Executive Officer

May 20, 1987

Date

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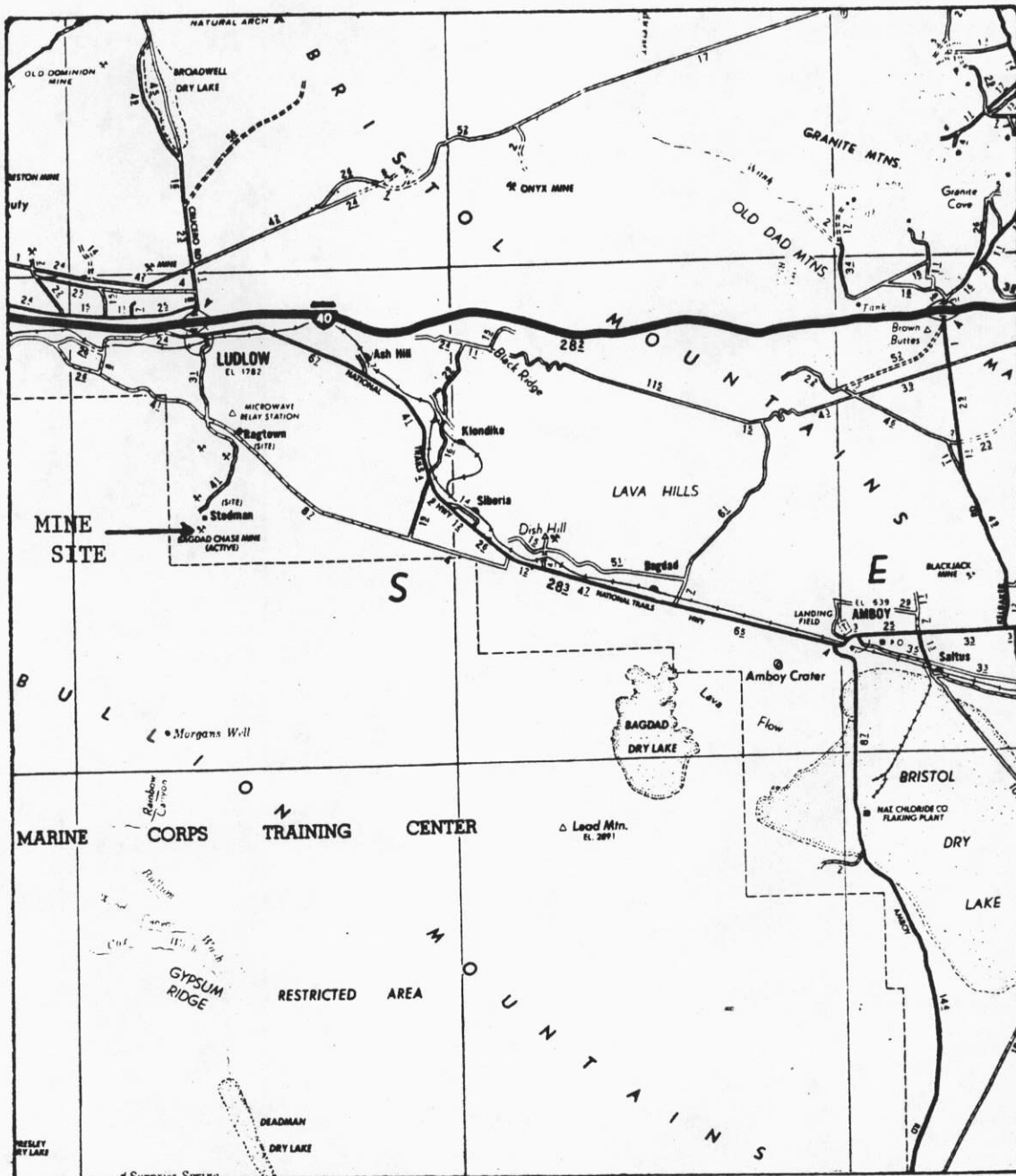


SITE MAP NO. 1

BAGDAD CHASE MINE  
BENTLEY RESOURCES U.S., INC.  
South of Ludlow - San Bernardino County  
Mine Site: Portion of NE 1/4 of Section 8, T6N, R8E, SBB&M  
USGS Ludlow 15 min. Topographic Map

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SITE MAP NO. 2

BAGDAD CHASE MINE  
 BENTLEY RESOURCES U.S., INC.  
 South of Ludlow - San Bernardino County

Order No. 87-53

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