

# Appendix J

---

## Draft Surface Mining Reclamation Plan

by  
Rising Sun Enterprises

DRAFT

**SURFACE MINING AND**  
**RECLAMATION PLAN**

FOR GRAVEL REMOVAL  
ON THE LOWER MAD RIVER

APPLICANTS:

REDWOOD EMPIRE AGGREGATES  
ARCATA READIMIX  
MERCER, FRASER COMPANY  
EUREKA SAND AND GRAVEL  
MAD RIVER SAND AND GRAVEL  
ZABLE TRUCKING

THE PURPOSE OF THIS DOCUMENT IS TO PROVIDE COMPREHENSIVE  
RECLAMATION STANDARDS FOR CONTINUED COMMERCIAL EXTRACTION OF  
RIVER RUN MATERIALS FOR EACH OF THE INDIVIDUAL OPERATIONS ON THE  
LOWER MAD RIVER

*APRIL 1993*

RISING SUN  
ENTERPRISES



PLANNING • PERMITTING • ENVIRONMENTAL CONSULTING  
1864 Myrtle Avenue • Eureka, CA 95501 • (707) 445-2433

## TABLE OF CONTENTS

	<u>Page #</u>
INTRODUCTION	1
GENERAL INFORMATION	
1. Graham Bar, Redwood Empire Aggregates (REA)	2
2. Arcata Readimix Bar, Spina/Johnson Bar, Arcata Readimix	4
3. Essex Bar, Mercer, Fraser Co.	6
4. Simpson Bar, Zabel Trucking	7
5. Johnson Bar, REA	8
6. Christie Bar, Eureka Sand & Gravel	9
7. Blue Lake Bar, REA	10
8. Emmerson Bar, REA	11
9. Guynup Bar, Mad River Sand & Gravel	12
I. ENVIRONMENTAL SETTING	15
Note: The Program EIR for Gravel Removal on the Lower Mad River prepared by Humboldt County is incorporated into this section by reference.	
II. MINING PLAN	16
A. MAP OF OPERATIONS	16
B. PRODUCTION LEVELS	16
C. MINING PLAN	17
D. SIZE	19
E. WATER REQUIREMENTS	19
F. CONTAMINANTS	19
G. WASTE WATER	20
H. WATER IMPOUNDMENTS AND DIVERSIONS	20
I. ORE PROCESSING	20
J. IN-STREAM MINING	20
III. RECLAMATION PLAN	21
A. SUBSEQUENT USES	21
B. RECLAMATION SCHEDULE	22
C. POST-MINING TOPOGRAPHY	22
D. IMPOUNDMENTS	23
E. DRAINAGE	23
F. DISPOSITION OF OLD EQUIPMENT	23
G. REVEGETATION	23
H. MONITORING AND MAINTENANCE	25
I. IN-STREAM MINING	27
J. FUTURE MINING	28
K. PUBLIC SAFETY	28
IV. MAPS & PHOTOS OF PROJECT SITE	
Note: Maps and Photos in the Program EIR for Gravel Removal on the Lower Mad River prepared by Humboldt County is incorporated into this section by reference.	

	<u>Page</u>
STATEMENT OF RESPONSIBILITY	29
ATTACHMENT A - Annual Review	30
ATTACHMENT B - Monitoring Standards	34
ATTACHMENT C - Performance Standards	35
ATTACHMENT D - Financial Assurance Worksheet, 1993	40
ATTACHMENT E - Planting Plan for Mitigation if Willows are not Transplanted	41

## INTRODUCTION

The purpose of this project is to provide comprehensive reclamation standards for continued commercial extraction of riverrun materials. This reclamation plan defines the reclamation of operations that are expected to continue indefinitely. These operations will be subject to the conditions and mitigation measures, including annual review and monitoring, required by the Mad River EIR.

As stated in Attachment A, annual monitoring of the gravel bars will be conducted before and after seasonal extraction to determine the impact (positive or negative) of the mining. The results (cross-sections) will be submitted annually to the Humboldt County Planning Department and California Department of Fish & Game to verify compliance and determine the appropriate mining strategy to be used the next year.

Although all sites are being proposed to be governed by similar standards and regulations, the proposed revisions would constitute changes in each of the operations individual reclamation plan. All operations are meant to remain as separate operations.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #'s

Graham/Zanzi/REA Gravel Bar. SMR 09-91, CDF 46-91, SP 39-91

2. Applicant/Lessee/Operator

Redwood Empire Aggregates  
P.O. Box 299  
Arcata, CA 95521  
(707) 822-4853

3. Property Owners/Owner of Mineral Rights

Carol & Donald Graham  
1706 Guintoli Lane  
Arcata, CA 95521  
(707) 822-1060

Ellen Zanzi  
P.O. Box 2542  
Yountville, CA 94599

REA  
P.O. Box 299  
Arcata, CA 95521  
(707) 822-4853

4. Agent of Process

Pacific Affiliates  
835 Third Street  
Eureka, CA 95501  
(707) 445-3001

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 100,000 cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

SW $\frac{1}{4}$  Sec. 8, NE $\frac{1}{4}$  Sec. 17, NW $\frac{1}{4}$  Sec. 16, T6N, R1E, H.B.M.  
The site location is depicted on maps included in Section IV. Assessor Parcel Numbers 504-141-11, 32 & 42. Project is in the Coastal Zone (Humboldt Bay Area Plan).

The parcels total approximately 80 acres. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 17 acres based on current river conditions.

7. Access Route

Primary access to the site is off of existing driveways accessing Guintoli Lane opposite Valley East and Valley West Boulevards.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #'s

Arcata Readimix Gravel Bar, Spina/Johnson Gravel Bar.  
SMR-03-88, SP 91-88

2. Applicant/Lessee/Operator

Arcata Readimix  
P.O. Box 4657  
Arcata, CA 95521  
(707) 822-1795

3. Property Owners/Owner of Mineral Rights

William O'Neill  
Richard Hunt  
Stan Johnson  
Ben Spina

4. Agent of Process

Rising Sun Enterprises  
1864 Myrtle Avenue  
Eureka, CA 95501  
(707) 445-2433

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 80,000 cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

NW $\frac{1}{4}$  & NE $\frac{1}{4}$  Sec. 16, SE $\frac{1}{4}$  Sec. 9, T6N, R1E, H.B.M.  
The site location is depicted on maps included in Section IV.  
Assessor Parcel Numbers are as follows:

OWNER/APN	TOTAL PARCEL AREA (acres)	AREA UTILIZED FOR PROJECT (acres)	GRAVEL BAR (acres)	PROCESSING (acres)
O'Neill 507-381-03, 04, 05	20	20	6	14
Hunt 507-131-18	20	1	1	0
Johnson 507-131-83	25	11	11	0
504-181-28	5	.5	.5	0
Spina 504-181-18, 26	20	3.5	3.5	0
507-261-16, 9, 10				
TOTAL (acres)	90	36	22	14

The parcels total approximately 90 acres. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 22 acres based on current river conditions.

7. Access Route

Primary access to the site is off of an existing driveway accessing Boyd Road approximately 1,500' and 3,500' north of Giuntoli Lane.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #'s

Essex Gravel Bar. SP 26-88

2. Applicant/Lessee/Operator

Mercer, Fraser Company  
P.O. Box 1006  
Eureka, CA 95502  
(707) 443-6371

3. Property Owners/Owner of Mineral Rights

Mercer, Fraser Company  
P.O. Box 1006  
Eureka, CA 95502  
(707) 443-6371

4. Agent of Process

Rising Sun Enterprises  
1864 Myrtle Avenue  
Eureka, CA 95501  
(707) 445-2433

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 40,000 cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

NE $\frac{1}{4}$  Sec. 15, T6N, R1E, H.B.M.  
The site location is depicted on maps included in Section IV.  
Assessor Parcel Numbers 504-161-10.

The parcel is approximately 8 acres total. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 3.5 acres based on current river conditions.

7. Access Route

Primary access to the site is off of an existing driveway accessing Glendale Drive approximate 2,000' west of Essex Lane in the Glendale vicinity.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #

Simpson Gravel Bar. No County permit approvals.

2. Applicant/Lessee/Operator

Zabel Trucking  
P.O. Box 3772  
Eureka, CA 95501  
(707) 445-2958

3. Property Owners/Owner of Mineral Rights

Simpson Train Company  
P.O. Box 1169  
Arcata, CA 95521  
(707) 822-0371

4. Agent of Process

Rising Sun Enterprises  
1864 Myrtle Avenue  
Eureka, CA 95501  
(707) 445-2433

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 40,000 cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

SE $\frac{1}{4}$  Sec. 14, NW $\frac{1}{4}$  Sec. 23, SW $\frac{1}{4}$  Sec. 13, T6N, R1E, H.B.M.  
The site location is depicted on maps included in Section IV.  
Assessor Parcel Numbers 504-131-02 & 04; 516-161-04.

The parcels total approximately 50 acres. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 27 acres based on current river conditions.

7. Access Route

Primary access to the site is off of an existing driveway accessing Glendale Drive approximately 1,300' east of Fieldbrook Road in the Glendale vicinity.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #

Johnson Gravel Bar. CUP-34-91/SMR-11-91.

2. Applicant/Lessee/Operator

Redwood Empire Aggregates  
P.O. Box 299  
Arcata, CA 95521  
(707) 822-4853

3. Property Owners/Owner of Mineral Rights

Redwood Empire Aggregates  
P.O. Box 299  
Arcata, CA 95521  
(707) 822-4853

4. Agent of Process

Pacific Affiliates  
835 Third Street  
Eureka, CA 95501  
(707) 445-3001

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 30,000 cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

NW $\frac{1}{4}$  Sec. 24, T6N, R1E, H.B.M.  
The site location is depicted on maps included in Section IV.  
Assessor Parcel Number 516-161-02.

The parcel is approximately 36 acres total. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 20 acres based on current river conditions.

7. Access Route

Primary access to the site is off of an existing driveway accessing Glendale Road approximate 1,300' east of Fieldbrook Road in the Glendale vicinity via property owned by Simpson Train Company.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #'s

Christie Gravel Bar. CUP-08-88, CUP-24-91/SMR-05-91,  
CUP-129-85

2. Applicant/Lessee/Operator

Eureka Readimix  
P.O. Box 3568  
Eureka, CA 95502  
(707) 822-2937

3. Property Owners/Owner of Mineral Rights

Phyllis M. Christie  
P.O. Box 187  
Blue Lake, CA 95525

4. Agent of Process

Pacific Affiliates  
835 Third Street  
Eureka, CA 95501  
(707) 445-3001

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 50,000 (150,000) cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

Sec. 24, T6N, R1E, H.B.M.  
The site location is depicted on maps included in Section IV. Assessor Parcel Numbers 516-171-05, 06, 07; 516-181-09, 10.

The parcels total approximately 200 acres. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 71.5 acres based on current river conditions.

7. Access Route

Primary access to the site is off of an existing driveway accessing Glendale Road approximate 1,800' northeast from the Highway 101 interchange.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #

Blue Lake Gravel Bar. SMR-08-91/SP-38-91

2. Applicant/Lessee/Operator

Redwood Empire Aggregates  
P.O. Box 299  
Arcata, CA 95521  
(707) 822-4853

3. Property Owners/Owner of Mineral Rights

1. Redwood Empire Aggregates
2. CWDT, Inc.
3. Leavey

4. Agent of Process

Pacific Affiliates  
835 Third Street  
Eureka, CA 95501  
(707) 445-3001

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 100,000 cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

NW $\frac{1}{4}$  Sec. 30, T6N, R2E, H.B.M.  
The site location is depicted on maps included in Section IV. Assessor Parcel Numbers 312-161-07; 313-231-01, 02, 03; 516-181-07, 516-191-09.

The parcels total approximately 400 acres. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 63 acres based on current river conditions.

7. Access Route

Primary access to the site is off of an existing driveway accessing Taylor Way in the Blue Lake Industrial Park.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #

Emmerson Gravel Bar. SMR-06-91/CUP-25-91

2. Applicant/Lessee/Operator

Redwood Empire Aggregates  
P.O. Box 299  
Arcata, CA 95521  
(707) 822-4853

3. Property Owners/Owner of Mineral Rights

Emmerson & Son  
P.O. Box 1189K  
Arcata, CA 95521  
(707) 443-3111

4. Agent of Process

Pacific Affiliates  
835 Third Street  
Eureka, CA 95501  
(707) 445-3001

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 50,000 cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

SW $\frac{1}{4}$  Sec. 30 & SE $\frac{1}{4}$  Sec. 14, NW $\frac{1}{4}$  Sec. 23, SW $\frac{1}{4}$  Sec. 13, T5N, R2E, H.B.M.  
The site location is depicted on maps included in Section IV. Assessor Parcel Numbers 312-151-15, 19, 25-161-05.

The parcels total are approximately 250 acres. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 33 acres based on current river conditions.

7. Access Route

Primary access to the site is off of existing driveways accessing Hatchery Road approximate 350' north of West End Road in the Glendale vicinity.

## GENERAL INFORMATION

1. Name of Mineral Property/Project Name/Permit #

Guynup Gravel Bar. SP-36-88, CUP-35-91

2. Applicant/Lessee/Operator

Mad River Sand & Gravel  
1206 W. 14th Street  
Eureka, CA 95501  
(707) 443-7039

3. Property Owners/Owner of Mineral Rights

Mad River Sand & Gravel  
1206 W. 14th Street  
Eureka, CA 95501  
(707) 443-7039

4. Agent of Process

Rising Sun Enterprises  
1864 Myrtle Avenue  
Eureka, CA 95501  
(707) 445-2433

5. Project Description Summary

The project entails an ongoing gravel extraction operation. The mining operation would continue to extract up to 200,000 cubic yards of riverrun materials on an annual basis. The project would potentially continue to excavate as long as material is available on the gravel bar (as defined herein).

6. Site Description

NE $\frac{1}{4}$  Sec. 31, T6N, R2E, H.B.M.  
The site location is depicted on maps included in Section IV.  
Assessor Parcel Numbers 313-061-05, 313-081-23, 303-061-01.

The parcels total approximately 160 acres. The portion of gravel bar on this property which would be disturbed in any given year and described in this reclamation plan could range from 1 to 30 acres based on current river conditions.

7. Access Route

Primary access to the site is off of an existing driveway accessing Hatchery Road just south of West End Road.

Summary of Gravel Projects  
on Mad River

<u>Gravel Bar</u>	<u>Operator</u>	<u>Amounts Covered by Reclamation Plan (cubic yards)</u>	<u>Size (ac.) of Gravel Bar (1992)<sup>1</sup></u>
Graham/Zanzi/REA Bars	Redwood Empire (REA) Aggregates	100,000	17
Arcata Readimix/ Spina/Johnson Bar	Arcata Readimix	80,000	22
Essex Gravel Bar	Mercer, Fraser Co.	40,000	3.5
Simpson Gravel Bar	Zabel Trucking	40,000	27
Johnson Gravel Bar	REA	30,000	20
Christie Gravel Bar	Eureka Sand & Gravel	150,000	71.5
Blue Lake Gravel Bar	REA	100,000	63
Emmerson Gravel Bar	REA	50,000	33
Guynup Gravel Bar	Mad River Sand & Gravel	<u>200,000</u>	<u>30</u>
TOTAL		730,000	260

---

<sup>1</sup>Acres operated varies year to year.

8. Location and Vicinity Maps

See attached Location Map, Site Maps, Photographs, and Mining Plans - Section IV.

9. Project Description

The project detailed herein is for existing surface mining operations (i.e., gravel extraction). The extracted gravel will generally be used for local construction projects. The gravel is commonly gathered using one of the following two techniques: Skimming and/or trenching. Skimming is the preferred method and is accomplished by scraping a section of the bar parallel to the river channel. The bar is often graded toward the river. Patterns are dependent on site specific characteristics. Skimming occurs so that holes or depressions are not created to trap migratory fish during migration.

Trenching involves using an excavator and digging a trench . Trenches often parallel the existing river channel or are used in developing an off-channel pond. Based on specific river conditions and recommendations by the California Department of Fish & Game, channelization (trenching in the live stream channel) may also be used to retain the river's present channel position or relieve erosional pressure on stream banks. However, this is not presently being used based on current river conditions but may be considered sometime as part of the annual review listed in Attachment A.

The extraction areas will be on the gravel bar and are located away from housing so that disruption to occupants has been kept to a minimum. The operating hours will be limited to daylight hours generally from 7:00 a.m. to 6:00 p.m., Monday through Friday. Occasionally Saturday and Sunday extraction will occur contingent upon demand. The number of employees at each extraction site consist of those necessary to operate machinery; generally one person to operate the scraper or excavator, one person to operate the loader and a variable number (3-5) of people to operate dump trucks. This may be increased at times of a reduced extraction season.

This project is an annual/seasonal operation and will operate pursuant to governmental regulations. The operation will also be subject to seasonal flow conditions.

Access to the site is by way of private access roads. These roads are accessed through locked gates on existing road approaches. Trucks would travel on local collectors and connect directly with Highways 299 and Highway 101 to destinations located in the near vicinity.

## I. ENVIRONMENTAL SETTING

Please refer to information in the Program EIR for Gravel Removal on the Lower Mad River prepared by Humboldt County and incorporated herein by reference.

## II. MINING PLAN

### A. MAP OF OPERATIONS

See Section IV.

### B. PRODUCTION LEVELS

Production levels in the past have varied and have been in response to providing both local timber and construction needs as well as major highway construction projects which required road base, asphalt paving, concrete bridges, interchanges, overpasses, etc. Large projects occurring between the 1950's and 1970's include construction of the Highway 101 Arcata-Eureka freeway (8 miles built in the 1950's) and Arcata to Big Lagoon freeway (27 miles built in the 1960's); Highway 299 freeway from Highway 101 to Berry Summit (35 miles built in the late 1960's, early 1970's) and Highway 255 (Samoa Boulevard) from Arcata to the Coast Guard Station (11 miles built in the 1960's).

Other projects that required substantial amounts of material removed from the Mad River include the Arcata Airport (1940's - +300,000 cubic yards), and base and paving material for majority of mill yards in the Arcata-Eureka area (as an example the Simpson Samoa Pulp Mill required 90,000 cubic yards of material for base and concrete in the 60's). Most of the concrete buildings in Eureka built in the 60's obtained materials from the Mad River. The County Courthouse required 40,000 cubic yards of concrete itself. The development of Humboldt State University's concrete buildings, base and paving utilized material from the Mad River. In 1972, 5,000 dolos were constructed for the jetties. Of the 212,000 tons of material, half consisted of Mad River sand.<sup>2</sup>

Gravel extraction practices during those times allowed a dragline to operate even during winter months. As soon as material was removed, it was replenished by winter flows, allowing for large stockpiles to be developed in winter for summer construction projects. This practice ceased in the early 1970's when the CA Department of Fish & Game restricted gravel extraction to other methods, such as gravel bar skimming. Production levels were decreased and, at the same time, most of the large highway construction projects were completed. Local construction needs of Mad River aggregate remained high through the 1970's and into the 1980's and supply appears to have kept up with demand. Several large floods and normal wet winters provided sufficient recruitment of gravels to meet demand during that time. The Eel River was not used as a source for these kinds of projects until

---

<sup>2</sup>Based on discussions with operators.

the late 1970's, when ready mix concrete operations were developed. The six years of drought since 1986 has caused a drastic reduction in recruitment levels, though actual figures are unavailable.

Presently permitted and approved operations allow an annual maximum of 690,000 cubic yards. However, recent extraction has been much less than this. In 1991, when increased extraction was allowed because of a trenching alternative, approximately 305,000 cubic yards of material was removed. Without the trenching alternative, production levels are much less. In 1992, only 104,500 cubic yards were removed which included both gravel bar skimming and off-river pits.<sup>3</sup>

### C. MINING PLAN

#### 1. Operating Plan

The projects are currently operating and will continue as long as material is permitted to be removed. Extraction is proposed to generally occur June through September but annual operating periods are to be determined on an annual basis based on river conditions (see Attachment A).

#### 2. Topsoil

No topsoil is present where mining will occur.

#### 3. Overburden/Waste/Ore

- a. The proposed mining type will be riverrun gravel extraction.
- b. Equipment utilized at the site will include scrapers, excavators, loaders and dump trucks for hauling gravel away from the site to be processed. Other alternatives, as technology provides, may be utilized. Summer bridge crossing(s) will also be required based on specific river conditions.
- c. Explosives - N/A.
- d. The exact method of extraction will be determined based on annual river conditions. The California Department of Fish & Game will be notified of specific operating procedures. Options include using a skimming technique and/or a trenching technique. Skimming consists of the use of a scraper or loader generally moving parallel to the river channel and skimming a layer of gravel from the bar. The process continues by scraping consecutive strips, moving away

---

<sup>3</sup>Based on estimates by operators.

from the river channel. In most cases the process creates a smooth finished bar gently sloping towards the river.

Trenching involves using an excavator and digging a trench parallel to the existing river channel. Based on river conditions and recommendations by the California Department of Fish & Game, channelization (trenching the live stream channel) may be used to retain the rivers present channel position to prevent erosion, improve future characteristics, restoration, etc.

- e. At the request of the County as lead agency and DMG, in previous comments the following baselines have been developed:

For gravel bar skimming, the overall maximum depth of removal will be based on the 1992 low water surface elevation based on cross-sections taken in the fall, 1992 or other historic evidence.

The baseline depth will be above 1% slope line measured from the baseline described above. Operations will occur above this line.

If trenching or channelization occurs, a maximum 20 foot depth below the baseline described above could occur.

This baseline is established based on existing information and may be revised based on an analysis of historic review and cumulative impacts, or when deemed appropriate for flood management or fish and wildlife concerns. This is determined as part of the Annual Review (Attachment A).

- e. Cross-Sections - See Attachment B.
- f. No phasing is proposed; however, the following year's extraction activity is defined, in part, by the preceding winter's replenishment of the gravel bar.

### 3. Mine Waste

No waste is produced from this type of project. Due to the nature of the activity and the proposed methods of extraction, no waste will either be retained on-site or disposed off-site. No discharge from industrial activities into State waters occurs.

- a. All materials will be removed from the bar.
- b. Spoil piles - N/A

- c. Spoil to be backfilled - N/A
- d. No toxic materials will be used at the site.
- e. Compaction of backfilled materials - N/A

D. SIZE

1. Acreage Permitted

Parcels that are utilized for gravel extraction/ processing operations total approximately 1,274 acres. Based on present conditions approximately 300 acres are presently available for gravel extraction, 62 acres are utilized for industrial processing and 912 acres as streambank vegetation, agricultural or other land use.

The area where surface mining occurs can change after a substantial flood event and change in the river course. The area subject to this Reclamation Plan will be determined annually based on the review in Attachment A.

2. Acreage Disturbed

Acreage disturbed in any year will be dependent on the area permitted for gravel extraction per review in Attachment A.

3. Acreage Reclaimed

Acreage to be left in a reclaimed manner will be dependent on the amount of acreage disturbed as described above. Reclamation limited to disturbed areas except as described in Section III(H).

E. WATER REQUIREMENTS

No water is generally required for extraction purposes. Water is sometimes utilized adjacent to several gravel bars as part of processing activities on the upland sites.

F. CONTAMINANTS

- 1. No servicing of equipment (fueling or lubricating) will occur within the extraction area. In the event of an accidental lubricant or fuel leak (i.e., hydraulic lines breaking, etc.), operators will be instructed to move equipment to safer high ground (roadway or upper bench). If gravel is contaminated with a spillage, the material will be removed and properly disposed.
- 2. Any materials brought on the site shall be removed at the end of the extraction season.

G. WASTE WATER

No water will be used on-site.

H. WATER IMPOUNDMENTS AND DIVERSIONS

Water is required to be used for processing activities at several locations (Arcata Readimix, Redwood Empire Aggregates, Eureka Sand & Gravel, Mad River Sand & Gravel). Process water is returned to the river system by percolation through sediment settling ponds.

I. ORE PROCESSING

No ore processing occurs. All material mined is removed from the extraction site and is utilized as mined or subject to manufacturing processes. Gravel is processed at adjacent or off-site locations. In addition, gravel may be processed on-site with portable equipment or removed from the site for processing at another location. Gravel is generally processed by using a screening/gradation technique.

J. IN-STREAM MINING

1. Most surface mining will occur adjacent to, but outside of, the live stream. Operations could require placement of a summer railcar crossing to reach the extraction site, based on current river conditions. Operating machinery will be kept out of the live stream channel when excavating.

In-stream mining may occur by the method of river channelization under the direction of the California Department of Fish & Game and approved by Humboldt County (see Attachment A).

2. The mining operation will occur on the floodwashed portion of the gravel bar. Minimal vegetation is present here, as it is usually removed from the bar every year or two by average annual high water. Riparian vegetation will re-introduce itself to the bar through natural processes.
3. Fauna/Flora - See "Environmental Setting" Section I.
4. Annual Stream Alteration Agreements have been obtained from the Department of Fish & Game in the past. See Attachment A for proposed review process.

### III. RECLAMATION PLAN

#### A. SUBSEQUENT USES

##### 1. Extraction Area

The extraction areas are generally in the floodway of the Mad River. It is anticipated that this area would continue to be utilized for floodway management in conjunction with related gravel extraction. The subsequent use of the gravel bar after extraction will continue to be as floodway, open space and unspecified recreational access to the river. The river itself will most likely continue to be managed for anadromous fisheries by resource agencies. Extraction generally occurs in a manner that annually leaves the gravel bar in a final reclaimed condition.

##### 2. Processing Sites

The following sites have no designated on-site processing sites. Portable processing equipment may be moved on the site but, as defined in the Reclamation Plan, is required to be removed within 15 days of the end of extraction or as may be otherwise defined in the annual review described in Attachment A.

1. Arcata Readimix Spina-Johnson Bar
2. Zabel Trucking Simpson Bar
3. Redwood Empire Aggregates Johnson Bar
4. Redwood Empire Aggregates Emmerson Bar

The remaining sites are adjacent to existing industrial aggregate processing sites (Redwood Empire Aggregates - Graham Bar and Blue Lake Bar; Arcata Readimix - Arcata Readimix Bar; Mercer, Fraser Co. - Essex Bar; Eureka Sand & Gravel - Christie Bar; Mad River Sand & Gravel - Guynup Bar).

Reclamation activities of the existing processing sites is limited to any necessary grading activities for erosion control purposes and to assure that surface water from industrial process areas does not enter a conveyance that would cause discharge into State waters. At present, site drainage enters sediment settling ponds which are proposed to be retained for this purpose if necessary after processing activities cease. Stockpiles of unprocessed riverrun materials are also proposed to remain on-site and if not sold could be utilized for raising the elevation of the processing areas to a higher flood elevation for subsequent industrial activities. The sites are within the 100-year Flood Plain and are of sufficient size to allow spreading existing stockpiles of gravel and sorted materials across the site to provide an

industrial area out of the 100-year Flood Plain. Other improvements on the site including storage buildings above ground fuel tanks, equipment sheds, power generators, etc., would remain on-site and are consistent with the end use of future industrial development.

The processing sites have been in existence prior to the 1960's and could be utilized for processing aggregate brought in from other sources or for remanufacturing asphalt or concrete if gravel was no longer available on the Mad River. It is for both local and regional economic importance that these processing facilities remain since it would be very difficult to locate a new processing site. The existing processing sites are in a location that meets the needs of State, County and local construction projects from Orick (40 miles north) to Eureka (10 miles south) and east as far as Willow Creek (35 miles).

The proposed subsequent use of the processing area will be for future industrial activity consistent with County Codes Section 23016 of the economic policies of the County's General Plan, which supports resource dependent industrial uses outside of urban areas when uses are: a) dependant upon close proximity to resources production lands; and b) not dependant on urban services. Section 1441 of the Plan supports a "common sense" interpretation of the Plan to encourage reasonable development which can meet the community's needs with minimal impacts on the environment and minimal demands on public services.

3. Notification of Reclamation - See enclosed Statement to be signed after final revisions/approval received.
4. Public Purpose - N/A.

#### B. RECLAMATION SCHEDULE

- 1., 2., 3. The extraction area will be mined in a manner for reclamation (Section II[C]). Natural bedload transport processes will be a major factor that will allow future excavation yearly with the advent of annual high water flowing over the bar and reshaping and replenishing gravel. The extent that this occurs will partially determine the extent of surface mining in subsequent years. Revegetation by natural means will also occur from this process. See Part F (Revegetation).
4. Slopes Design Calculations - N/A.

#### C. POST-MINING TOPOGRAPHY

1. Baseline cross-sections were completed in the Fall of 1992 to establish the baseline for most bars. Cross-sections will be performed by licensed professionals in a

manner that can be reestablished should flooding substantially change the site. A permanent benchmark on each site has or will be established prior to the 1993 extraction season.

2. Pre- and post-mining cross-section information will be submitted to Humboldt County Planning Department and California Department of Fish & Game on an annual basis as long as they are required (see Attachment B).
3. Stabilization of banks-extraction generally will not occur near river banks; slopes will not be destabilized. See Section III(G) for further information on monitoring and corrective measures.
4. Slope Design Calculations - N/A.

D. IMPOUNDMENTS

N/A.

E. DRAINAGE

If a skimming technique is used, the gravel bar will be graded towards the river with a slope resembling natural conditions (1-3% grade). Drainage of the gravel bar occurs by infiltration instead of surface run-off; this drainage pattern will not be disturbed by mining.

F. DISPOSITION OF OLD EQUIPMENT

No equipment will be left in the extraction area. Any equipment or supplies left from surface mining activities have and will continue to be removed from the gravel bar at the end of the extraction period.

G. REVEGETATION

1. a. Topsoil Redistribution - N/A.  
b. Mine Waste Testing - N/A.  
c. Soil Stockpile Protection - N/A.
2. Fertilizers, Etc. - N/A.
3. Landscape Plan

The areas of extraction are located away from established riparian area. The floodwashed portion of the gravel bar contains primarily annual vegetation. Due to less than average annual flows, some young willows are growing near the river channel. Natural processes of removal by flood and replacement by deposition annually renews vegetation to these areas. Past experience on these gravel bars indicates that this vegetation is being replaced.

No established vegetation is proposed to be removed and, as a result other than natural reoccurrence, no revegetation is proposed. Riparian vegetation that begins to become established in the floodway may be moved to a suitable location or mitigated and will be based on a specific year's extraction proposal. Specifics for transplanting or mitigating will generally occur as described in III(G)(4, 5).

Revegetation of the access roads are not proposed except as may become necessary for erosion control purposes. Inspection/maintenance occurs several times per year even for idle mines.

Section III(H) - Monitoring Program describes the process for revegetation for any areas adversely affected by extraction activities caused by individual projects.

4., 5. Planting Method, Timing

Willows growing in the approved extraction area that are required to be moved will be removed by equipment and deposited in a hole of adequate size and with access to groundwater at a pre-approved location established as part of annual review. Willow cuttings will be planted according to established practices for any mitigation required, as described in Section H.

6. Plant Protection

It is not reasonable nor necessary to provide fencing or other barriers for transplants or new plantings as they are accessible to the general public at all times of the day. By not posting signs or fencing, it is likely that they have a better chance of survival by being inconspicuous than drawing attention to them. Predation is not believed to be a significant threat to the species being planted.

If high water in a subsequent year should remove these plantings then they shall not be replaced, as a naturally occurring process has removed them. This is consistent with the State Mining and Geology Board Resolution 92-24 regarding "Act of God."

7. Irrigation

Plants would be watered through rainfall and moisture obtained from the high water table that exists on the gravel bar. If replanting is determined, through annual inspection, to be required, then vegetation will be planted during the winter months (December-February).

## H. MONITORING AND MAINTENANCE

### 1. Monitoring Program

Each year's County review (Attachment A) and CA Department of Fish & Game's Annual 1603 Agreement will rely on the following approach which will become an ongoing process of:

- 1) cross-section surveying in the spring;
- 2) establishment of extraction volumes;
- 3) operator-agencies negotiations;
- 4) design of extraction geometry;
- 5) re-surveying in the fall to determine compliance and provide documentation for the following years recruitment survey.

Aerial photographs will be provided showing river morphology/riparian vegetation changes which might be attributed to extraction activities. The aerial photo should extend 500 feet above and below the extraction activity area from the previous year. If necessary, seasonal revegetation and/or correction to stream morphology may be required as a condition for continuation of project and may be considered a violation of the previous years permit approval until remedied.

Accompanied with each annual monitoring report, information will be provided assessing the amount of area affected by the project and subject to reclamation as defined in this report. A performance agreement with an appropriate amount to cover the required items will be submitted prior to initiation of the following year's extraction activity.

The area for proposed extraction activities will be surveyed to depict actual volumes of gravel available for extraction by gravel skimming processes. These will be repeated each year prior to extraction occurring.

A permanent reference bench mark will be placed at each site and all cross-sections will be referenced from that mark. Cross-sections will be surveyed perpendicular to the river direction at equivalent spacing.

Subsequent surveying is proposed for the following spring after extraction, which will show amounts of gravel replenished on the bars. After the next and each extraction season thereafter, cross-sections will be surveyed at the end of the extraction season (November) at the same locations as those generated in spring for those areas where extraction activity occurred.

An analysis of the aerial and elevational extent of gravel removal will be depicted in report/graphic form

and submitted to Humboldt County Planning Department and CA Department of Fish & Game.

If requested, a meeting will be held to discuss any areas needing grading modification, revegetation from past year's activity and will discuss tentative areas and conditions for the next extraction season.

Prior to the next season's extraction activity, cross-sections will be submitted for the upcoming activity area, as well as last year's activity area.

Information submitted will include discussion of river changes from the winter, gravel bar recruitment, proposed mining areas and any suggested conditions of operation.

## 2. Standards

Monitoring specifications may be adjusted to meet current requirements as may be adopted by the County and/or as part of Annual Review.

- a. Annual Review - See standards listed in Attachment A.
- b. Monitoring - See standards listed in Attachment B.
- c. Performance - See standards listed in Attachments C and D.
- d. Planting Plan for Mitigation if Willows are not Transplanted - See standards listed in Attachment E.

## 3. Responsibility

The operator/owners have the responsibility to create a successful mitigation program and will manage the mitigation site in such a manner. For any area tending towards unsuccessful revegetation, the operator will take action to correct those trends. These actions would include replanting and/or regrading. Any problem and subsequent solutions should be evident within the first few years of monitoring.

Major corrective actions will be taken only after consultation and approval by Humboldt County. This will generally occur only after an annual progress report has been submitted.

The operator will be responsible for implementing this revegetation program. He will be responsible for assuring that operators are aware of the conditions stated herein.

#### 4. Assurance of Success

The area affected by extraction activities will be assessed during annual reports submitted to the County and verified during site inspections. Financial assurances will be adjusted annually to include any necessary mitigation requirements. Worksheet for determining financial assurances is included in Attachment D. Progress reports will include all monitoring data and discuss the status of the mitigation efforts during the previous year.

### I. IN-STREAM MINING

#### 1. Rehabilitation

At the end of each season and within 15 days of completion of gravel removal, the Applicant/Operator will be responsible for smoothing out the river bar so that no benches, trenches, wells or topographic features remain that degrade the environment (such as ponding, erosion, sedimentation or stream channel alteration except as otherwise provided by the necessary operating approvals). Site specific requirements are also required by the CA Department of Fish and Game for seasonal completion through the Stream Alteration (1603) Agreement. These would also be implemented as may be revised annually.

Following or in conjunction with the smoothing of the gravel bar the Operator shall be responsible for removing any and all machinery, equipment, waste or other evidence of the operation from the river channel or gravel bar.

At the end of the annual gravel operation post mining topography will be consistent and homogenous with the upstream and downstream topography. This will constitute completion of final reclamation for the year.

Rehabilitation will occur through natural processes (i.e., high annual flow will reshape and replenish gravel to the stream channel and gravel bar.)

#### 2. Annual Monitoring

As stated in Attachment A, annual monitoring of the gravel bars will be conducted before and after seasonal extraction to determine the impact (positive or negative) of the mining. The results (cross-sections) will be submitted annually to the Humboldt County Planning Department and California Department of Fish & Game to verify compliance and determine the appropriate mining strategy to be used the next year.

J. FUTURE MINING

It is expected that average annual high water should provide adequate bed load deposits to the gravel bar so that mining may continue on an annual basis. The amount of gravel that may be extracted will vary depending on the amount of bedload transport that occurs. Replenishment amounts will, in part, determine the amount of gravel that may be taken. Less amounts may be available when total replenishment does not occur.

K. PUBLIC SAFETY

The project areas are each controlled by a gate located on the existing road approach. In addition, personnel routinely inspect the areas throughout the year.

Access to the site is by way of private roads behind a locked gate to keep the general public away. Occasionally the public crosses private lands to obtain access to the river bar. This can cause a problem when trenching is proposed. Signage will be provided surrounding the trenched area when this method is utilized. Specifics will be provided as part of annual review when this alternative is proposed.

STATEMENT OF RESPONSIBILITY

Substantial deviations from the approved reclamation plan shall not be undertaken until an amendment has been filed with, and approved by, Humboldt County Planning Department. Any successor or assignees in interest of this surface mining operation are required to assume responsibility for meeting the terms of the approved reclamation plan.

I, the undersigned, hereby agree to accept full responsibility for reclaiming all mined lands that I operate, as described and submitted herein with modifications required by the Humboldt County Planning Commission as conditions of approval.

Signed this \_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_

\_\_\_\_\_  
Mine Site

\_\_\_\_\_  
Owner or Operator

\_\_\_\_\_  
Mine Site

\_\_\_\_\_  
Owner or Operator

\_\_\_\_\_  
Mine Site

\_\_\_\_\_  
Owner or Operator

\_\_\_\_\_  
Mine Site

\_\_\_\_\_  
Owner or Operator

Approved:

\_\_\_\_\_  
Lead Agency Representative

Date:\_\_\_\_\_

## ATTACHMENT A

### ANNUAL REVIEW

#### A. Reclamation Plan

1. The applicant shall obtain a determination of vested rights and/or a Surface Mining Permit/Conditional Use Permit for surface mining operations prior to beginning operations. If a vested right has been acknowledged, no amount of extraction in excess of the vested right amount shall be extracted in any year until the operator has obtained an amendment to the vested right or a surface mining permit for that additional extraction amount.
2. The Reclamation Plan shall be subject to annual review, pursuant to the Surface Mining and Reclamation Act. The annual review shall include on-site inspection by the Planning Department and CA Department of Fish and Game, and may include inspection by other agencies with jurisdiction over river resources. The annual review shall include, but not be limited to, evaluation of annual recruitment, post extraction channel configuration, riverine environment (riparian and wetland habitat, wildlife, and fisheries characteristics), and conformance with reclamation conditions and standards per the approved Reclamation Plan and underlying extraction operation.
3. Following the annual review/inspection, the Department of Fish and Game, other agencies, and interested persons who have previously commented or participated in the annual review/inspection process shall make written comments and recommendations to the Planning Department regarding any requested revisions or additions to the Reclamation Plan and underlying extraction operations. These written comments and recommendations shall include an explanation of the methodology, factual and scientific basis, and reasoning process upon which they are based. The operator shall provide written responses to any such comments including the methodology, factual and technical basis, and reasoning processes utilized in responding to such proposed revisions or additions to the Reclamation Plan and underlying extraction operation. The Planning Director shall make the final written determination of which appropriate revisions or additions, if any, shall be incorporated in the Reclamation Plan or underlying extraction. The Planning Director's final written determination shall include the methodology, factual and technical basis, reasoning processes, and findings upon which the final determination was based. These changes will be allowed as part of administration approval by the Planning Director.

4. The Reclamation Plan shall be approved for a 15 year period, subject to the annual review described above. As part of the annual review, the Planning Director shall determine whether the Reclamation Plan shall be (1) voided due to inadequacy or insufficiency, based in part upon an analysis of potential adverse environmental impacts, (ii) amended by (a) significant or (b) insignificant amendments pursuant to SMARA and local ordinances.
5. For periods when extraction is proposed to be reduced or prohibited as a part of the annual review process, interim management procedures to maintain the site will be set by the Planning Director. Compliance with specifications in the approved reclamation plan and any conditions of approval will remain in effect, including subsequent annual review. Other provisions of Public Resource Code Section 2770(h) shall apply.
6. The Planning Department shall deliver a copy of the final Reclamation Plan, permit or vested rights approval, and responses to comments by the Division of Mines and Geology to the Mined-Land Reclamation Project Office.

#### B. Mining Standards

1. Operating standards shall be subject to annual review as described above for the Reclamation Plan.
2. Minimum operating slopes near the stream channel at this operating site shall be established on the basis of the need to maintain channel stability and flow capacity and shall generally be 2 to 3 % from the point 1 foot above low flow water surface elevation, except as otherwise expressly authorized by the Planning Director after consultation with the Department of Fish and Game.
3. Trenching for the purpose of enhancing or modifying existing channel configurations to correct for braided channel conditions may be permitted by express approval of the Planning Director after consultation with Department of Fish and Game. The Planning Director's final written determination approving or disapproving any such proposed gravel extraction shall include the methodology, factual basis, reasoning processes, and findings upon which the final determination was based. The operator shall notify the Army Corps of Engineers of any proposed trenching operation.
4. Removal of gravel, as part of the mining operation, for the purpose of encouraging wetland development, improved spawning, rearing and migration habitat, restoration of river environment, or other reasonable purpose may be permitted by express approval of the Planning Director after consultation with Department of Fish and Game. The

Planning Director's final written determination approving or disapproving any such proposed gravel extraction shall include the methodology, factual basis, reasoning processes, and findings upon which the final determination was based.

5. Operating period shall be June 1st through October 1st in any operating year. By approval of the Planning Director, after consultation with Department of Fish and Game, annual extraction operations may begin before or continue after the stated dates based upon a site specific review, including evaluation of annual precipitation rates, river flows, fish migrations and spawning activities, and other environmental concerns. The Planning Director's final written determination approving or disapproving any such proposed gravel extraction shall include the methodology, factual basis, reasoning process, and findings upon which the final determination was based.

C. Traffic/Noise

In conjunction with submittal of extraction volumes, techniques and final slopes, the operator is to provide dates for the duration of the extraction season, hours and days of operations and approximately loads per day. Notification of changes is to be provided to the Planning Director for approval.

D. Public Safety

When trenching is proposed, the operator will propose a plan for protecting the public from associated hazards. The Plan will include but not be limited to the type, size and placement of signs and ongoing monitoring.

E. Recreational Uses

An informal inventory and analysis of types, frequency and intensity of recreational uses during the extraction season will be submitted by each operator to Humboldt County Planning Department as part of annual review.

F. Stream and Bedload Characteristics

Both pre- and post-extraction observations of stream characteristics and bedload will be visually noted within and immediately outside of each operating bar. Such inventories shall include identification of significant pools, riffles and flat sections of the river, and recordation of changes in average bedload/gravel diameters.

G. Wildlife/Fisheries

Observations by the operators of wildlife use on or adjacent to the extraction area are to be noted and turned in as part of the annual review. Observations from snorkeling in the River just prior to the beginning and at the end of the extraction season will be turned in as part of annual review.

## ATTACHMENT B

### MONITORING STANDARDS

The following standards are made part of the Monitoring Section of the Reclamation Plan. These standards may be revised as part of the Annual Review process.

Monitoring, which shall be incorporated into the Annual Review, shall be completed as follows:

1. Cross-sections to extend completely across the river channel and to terminate on banks with mature riparian vegetation (e.g., 10-15 year old vegetation). Cross-sections to include the river bottom (especially location of the thalweg) as well as the water surface. Water surface elevation alone is insufficient - the bed must be included.
2. All site maps to be prepared on the most recent (preferably post-extraction) air photo base. A current photo base is essential. Cross-section endpoints and tie points to be clearly monumented and labeled in the field and accurately located on current air photos and maps. A common color of flagging to be used to mark cross-sections at all sites.
3. Cross-sections to be tied to a common vertical and horizontal control datum across the extraction site.
4. Cross-sections for planning extractions to be surveyed in late May of the year in which extraction is proposed. Earlier cross-sections may be submitted with the operation's acknowledgement that, should subsequent rains occur, revised cross-sections may be required.
5. Cross-sections to be resurveyed from the same endpoints each year and the previous year's cross-sections to be superimposed on the current one. New cross-sections to be added as necessary as the river's course shifts and to be oriented approximately normal to the channel.
6. Cross-sections at all site to be plotted at the same simple, usable vertical and horizontal scales. (Suggested is a horizontal scale of 1 inch = 50 feet and vertical scale of 1 inch = 5 feet.)
7. Cross-sections to be surveyed and drafted consistently so that the right bank (RB) of the river as you face downstream is at the right side of the drafted cross-section.
8. Zero (0) distance in cross-sections to be at the left (LT) endpoint as you face downstream.
9. Cross-sections to be tied to a common vertical and horizontal control datum across the extraction site.

## ATTACHMENT C

The following further defines performance standards for this project described in Article 9. Reclamation Standards of the State Mining & Reclamation Act.

### 3700. Applicability

Reclamation of mined lands shall be implemented in conformance with the standards in this Attachment.

(a) The standards shall apply to this surface mining operation to the extent that:

(1) they are consistent with required mitigation identified in conformance with the California Environmental Quality Act, provided that such mitigation is at least as stringent as the standards; and

(2) they are consistent with the planned or actual subsequent use or uses of the mining site.

(b) Where an applicant demonstrates to the satisfaction of the lead agency that an exception to the standards specified in this article is necessary based upon the approved end use, the lead agency may approve a different standard for inclusion in the approved reclamation plan . . .

(c) Since substantial amendments are proposed to reclamation plans which received approval prior to performance standards requirements, the standards set forth in this Attachment are to be applied by the lead agency in approving the amended reclamation plan.

(d) The standards in this Attachment shall not apply to the existing processing sites or haul roads where consistent with the proposed end use and as described in the approved Reclamation Plan.

3701. Definitions - As described in SMARA Article 9 shall apply.

### 3702. Financial Assurances.

Lead agencies shall require financial assurances for reclamation in accordance with Public Resources Code section 2773.1 to ensure that reclamation is performed in accordance with the approved reclamation plan and with this Attachment. See Worksheet in Attachment D to be used in annual assessment.

### 3703. Performance Standards for Wildlife Habitat.

Wildlife and wildlife habitat shall be protected in accordance with the following standards:

(a) Rare, threatened or endangered species as listed by the California Department of Fish and Game or the U.S. Fish and Wildlife Service, or species of special concern as listed by the California Department of Fish and Game in the Special Animals List, Natural Diversity Data Base and their respective habitat shall be conserved as prescribed by the Federal Endangered

Species Act of 1973 and the California Endangered Species Act. If avoidance cannot be achieved through the available alternatives, mitigation shall be proposed in accordance with the provisions of the California Endangered Species Act and the Federal Endangered Species Act of 1973.

(b) At the conclusion of surface mining activities, wildlife habitat shall be allowed to reestablished on gravel extraction areas in a condition at least as good as that which existed before the lands were disturbed by surface mining operations. The proposed end use of the processing site and access road precludes its use as wildlife habitat, as described in the approved reclamation plan.

(c) Wetland habitat shall be avoided. Any wetland habitat impacted as a consequence of surface mining operations shall be mitigated at a minimum of one to one ratio for wetland habitat acreage and wetland habitat value. Except where specific vegetation differentiates from normally expected bar vegetation, exposed gravel bars within the full bank discharge area should not be considered wetlands.

\*Financial assurances to obtain the performance standards above are not required at this time but may change as determined through the annual review process.

#### 3704. Performance Standards for Backfilling, Regrading, Slope Stability and Recontouring.

Backfilling, regrading, slope stabilization and recontouring shall conform with the following standards:

- (a) Backfilling for urban uses - N/A.
- (b) Where backfilling is required for resource conservation purposes (e.g., agriculture, fish and wildlife habitat and wildlife conservation), fill material shall be backfilled to the standards required for the resource conservation use involved.
- (c) Mining waste - N/A.
- (d) Final reclaimed fill slopes - N/A.
- (e) Fill slopes - N/A.
- (f) Cut slopes, left as part of annual surface mining operations, shall have a minimum slope stability factor of safety that is suitable for the proposed end use and conform with the surrounding topography and/or approved end use.
- (g) Mining waste - N/A.

\*Financial assurances to obtain the performance standards above are not required at this time but may change as determined through the annual review process.

#### 3705. Performance Standards for Revegetation

Revegetation of the existing processing site and access roads are not consistent with the approved end use. For other areas, if and when established vegetation is removed by surface mining operations:

- (a) Vegetative cover or density, and species-richness shall be, where appropriate, sufficient to stabilize the surface

against effects of long-term erosion and shall be similar to naturally occurring habitats in the surrounding area.

(b) Test plots are not proposed since standards for revegetation, as proposed in the approved Reclamation Plan, have been successfully implemented under similar circumstances.

(c) Where surface mining activities result in compaction of the soil, ripping, disking or other means shall be used in areas to be revegetated to eliminate compaction and to establish a suitable root zone in preparation for planting.

(d) At the close of surface mining activities, access roads, haul roads and other traffic routes will remain consistent with the approved Reclamation Plan.

(e) Soil analysis - N/A.

(f) Temporary access for exploration - N/A.

(g) Native plant species shall be used for revegetation, except when introduced species are necessary to meet the end use (erosion control) specified in the approved reclamation plan. Portions of the processing site and haul roads shall be revegetated as may be necessary, to control erosion. In this circumstance, non-native plant species may be used if they are not noxious weeds and if they are species known not to displace native species in the area.

(h) Planting shall be conducted during the most favorable period of the year for plant establishment.

(i) Soil stabilization practices shall be used where necessary to control erosion and for successful plant establishment.

(j) Irrigation - N/A.

(k) Noxious weeds shall be managed: (1) when they threaten the success of the proposed revegetation; (2) to prevent spreading to nearby areas; and (3) to eliminate fire hazard.

(l) Protection measures, such as fencing of revegetated areas and/or the placement of cages over individual plants, shall be used in areas where grazing, trampling, herbivory or other causes threaten the success of the proposed revegetation. Fencing shall be maintained until revegetation efforts are successfully completed and the lead agency authorizes removal.

(m) Success of revegetation shall be judged based upon the effectiveness of the vegetation for the approved end use, and by comparing the quantified measures of vegetative cover, density and species-richness of the reclaimed mined-lands to similar parameters of naturally occurring vegetation in the area.

\*Financial assurances to obtain the performance standards above are not required at this time but may change as determined through the annual review process.

#### 3706. Performance Standards for Drainage, Diversion Structures, Waterways and Erosion Control

(a) Surface mining and reclamation activities shall be conducted to protect on-site and downstream beneficial uses of water in accordance with the Porter-Cologne Water Quality Control Act and the Federal Clean Water Act.

(b) Groundwater aquifers - N/A.

(c) Erosion and sedimentation shall be controlled during all phases of construction, operation, reclamation and closure of a surface mining operation to minimize siltation of water courses, as required by the Regional Water Quality Control Board or the State Water Resources Control Board.

(d) Surface runoff and drainage from surface mining activities shall be controlled by berms, silt fences, sediment ponds, revegetation, hay bales or other erosion control measures, to ensure that surrounding land and water resources are protected from erosion, gullyng, sedimentation and contamination. Erosion control methods shall be designed to handle runoff from not less than the 20 year/1 hour intensity storm event.

(e) Where natural drainages are covered, restricted, rerouted or otherwise impacted by surface mining activities, mitigating alternatives shall be proposed and specifically approved in the reclamation plan or as part of annual review to assure that runoff shall not cause increased erosion or sedimentation.

(f) When stream diversions are required, they shall be constructed in accordance with:

(1) the stream and lake alteration agreement between the operator and the Department of Fish and Game; and

(2) the requirements of the Federal Clean Water Act, Sections 301 and Section 404 and/or Section 10 of the Rivers and Harbors Act of 1899.

(g) When no longer needed to achieve the purpose for which they were authorized, all temporary stream channel diversions shall be removed and the affected land reclaimed.

\*Financial assurances to obtain the performance standards above are not required at this time but may change as determined through the annual process.

3707. Performance Standards for Prime Agricultural Land Reclamation - N/A.

3708. Performance Standards for Other Agricultural Land - N/A.

3709. Performance Standards for Building, Structure and Equipment Removal.

(a) All equipment, supplies and other materials shall be stored in designated areas (as shown in the approved reclamation plan). All waste shall be disposed of in accordance with State and local health and safety ordinances.

(b) All buildings, structures and equipment outside of the designated Processing Area shall be dismantled and removed prior to final mine closure.

\*See Attachment D. Except at otherwise specified in Attachment D, financial assurances to obtain the performance standards above are not required at this time but may change as determined through the annual process.

3710. Performance Standards for Stream Protection, Including Surface and Groundwater.

(a) Surface and groundwater shall be protected from siltation and pollutants which may diminish water quality as required by the Federal Clean Water Act, the Porter-Cologne Act, County grading ordinances, the Regional Water Quality Control Board or the State Water Resources Control Board.

(b) In-stream surface mining operations shall be conducted in compliance with section 1600 et seq. of the California Fish and Game Code, section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.

(c) Extraction of sand and gravel from river channels shall be regulated to control channel degradation in order to prevent undermining of bridge supports, exposure of pipelines or other structures buried within the channel, loss of spawning habitat, lowering of groundwater levels, destruction of riparian vegetation and increased stream bank erosion (exceptions may be specified as part of annual review as required in the approved reclamation plan). Changes in channel elevations and bank erosion shall be evaluated annually using records of annual extraction quantities and benchmarked annual cross-sections and/or sequential aerial photographs to determine appropriate extraction locations and rates.

(d) In accordance with requirements of the Department of California Fish and Game Code section 1600 et seq., in-stream mining activities shall not cause fish to become entrapped in pools or in off-channel pits, nor shall they restrict spawning or migratory activities.

\*See Attachment D. Except at otherwise specified in Attachment D, financial assurances to obtain the performance standards above are not required at this time but may change as determined through the annual review process.

3711. Performance Standards for Topsoil Salvage, Maintenance and Redistribution - N/A.

3712. Performance Standards for Tailing and Mine Waste Management - N/A.

3713. Performance Standards for Closure of Surface Openings - N/A.

**ATTACHMENT D**

**1993 FINANCIAL ASSURANCE WORKSHEET  
for Lower Mad River Operations**

<b>Item</b>	<b>Activity</b>	<b>Hours</b>	<b>Rate</b>	<b>Subtotal</b>
3703	Wildlife Habitat	None required		
3704	Backfilling	None required		
3705	Revegetation	None required		
3706	Drainage	None required		
3707	N/A			
3708	N/A			
3709	Equipment	Removal of summer bridge, etc.		
		1	\$120/hr.	120
3710	Stream Protection	Corrective grading		
		7	\$120/hr.	840
3711	N/A			
3712	N/A			
3713	N/A			
<b>Other</b>				
Mobilization	Transport of Equipment to Site			
		1	\$120/hr.	120
Mitigation for Removal of Plant Material	None required			
Administrative (10%)				<u>108</u>
TOTAL for each active bar				\$1,188

## ATTACHMENT E

### PLANTING PLAN FOR MITIGATION IF WILLOWS ARE NOT TRANSPLANTED

General tasks will include: 1) Cutting willow branches from sources on-site;  
2) Planting cuttings in designated areas;

#### b. Cutting/Willow Branches

Salix ssp - Cuttings will be salvaged from trees on the site or nearby sources. Willow cuttings shall be taken from large vigorous growing shrubs and trees soon after leaf drop in late autumn and prior to bud swelling in early spring. Cuttings should be approximately 18-32 inches long and from 3/4 inch to 3 inches in diameter. Each cut should be made approximately at a 45° angle to the stem. Cuttings are to be bundled in lots of 25 to 50 each with the basal ends all oriented in the same direction. Side branches and leaves are to be stripped off of the cuttings. Stem cuttings shall not include the tips of branches. The top of each cutting shall be just above a leaf bud, the bottom cut just below one.

Cuttings shall be kept out of direct sunlight until ready to plant. If it is necessary to store cuttings prior to planting, they shall be wrapped in moist newspaper with dry newspaper covering or in plastic bags with moist sawdust. Willow cuttings shall not be allowed to dry out before or during planting operations.

#### c. Plant Salvaged Cuttings

Cuttings will be planted in rows, in clumps of ten to twenty cuttings. If the top of the cutting is damaged during planting, then the damaged portion will be cut off. Planting will be done at 10'-16' spacing staggered from adjacent rows.

Cuttings must be planted right side up. At least 75% of the cutting length shall be planted in the ground, leaving at least two budding nodes above ground. Soil shall be firmly pressed around cutting to reduce moisture loss and improve soil contact.

#### d. Performance Criteria

Plant survival and vigor will be assessed for every cutting annually during the spring. Plant survival will be a simple test and assigned only an "alive" or "dead" notation to each plant. Plant vigor will require assigning each tree or shrub to one of three vigor classes. Class One plants exhibit vigorous growth, no die-back of the crown, and relative absence of insect or other infestations. Class Two plants will exhibit moderate to strong vigor, no die-back of the crown without replacement shoots and minimal infestations. Class Three plants exhibit poor to no vigor, die-back of the crown with no replacement shoots, and large to extensive infestations.

Planting is proposed at a density allowing a minimum 75% survival standard at the end of the monitoring period. The vigor test requires that all plants be at least of Class Two vigor or better.