

**COUNTY OF HUMBOLDT EXTRACTION REVIEW TEAM (CHERT)
2005 POST-EXTRACTION REPORT**

DISCUSSION DRAFT

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County of Humboldt extraction Review team (CHERT)

For the

Humboldt County Board of Supervisors

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No comments were received on the Discussion Draft.
This version represents the Final 2005 CHERT Post Extraction Report.**

SUMMARY

The Humboldt County Board of Supervisors appointed CHERT in 1992 to help Mad River operators plan their annual gravel extraction. In 1996 the CHERT role was expanded to include most riverine extraction sites in Humboldt County. Additional details on CHERT's role have been presented in earlier post-extraction reports and will not be repeated here. There are 15 large (greater than 5,000 cubic yards per year of extraction) riverine gravel mine operators (Appendix A) operating under the Humboldt County CHERT extraction review process. Of these, three did not operate in 2005. The 15 operators have permits to extract from at least 42 sites (Appendix B). Of the 42 sites CHERT reviewed extraction plans at 25 sites during 2005. A total of 493,300 cubic yards of gravel was extracted from 127.9 acres of gravel bar distributed around the County during 2005. The volumes and acreages of extraction approved and actually extracted from the various river reaches are summarized in the following table. Additional summaries are presented below.

Table 1. - CHERT 2005 Pre and Post Extraction Summary by River Reach

River Reach	Approved Pre Extraction		Actual Post Extraction	
	Volume (cubic yards)	Area (acres)	Volume (cubic yards)	Area (acres)
Mad River	138,475	41.4	127,260	40.6
Lower Eel River	195,370	41.4	166,280	39.7
Van Duzen River	159,090	32.9	123,170	29.3
Middle Reach of Eel River	0	0.0	0	0.0
South Fork Eel River	82,770	14.9	36,480	9.5
Trinity River	64,100	8.4	30,570	6.4
Isolated Sites	20,760	2.9	9,540	2.4
Totals	660,565	141.9	493,300	127.9

INTRODUCTION

CHERT uses the concepts of sustained yield and mean annual recruitment to avoid over-extraction and resultant cumulative effects on aquatic and riparian habitat and infrastructure (bridges, levees, etc.). The concepts of sustained yield gravel extraction and mean annual recruitment have been described in earlier CHERT post-extraction reports and will not be repeated here. Site-specific measures recommended by CHERT are used to reduce both local and cumulative (extending beyond the mine site or accumulating through time) effects of mining on riparian and aquatic habitat. CHERT utilizes an adaptive management strategy and these criteria on an annual and multi-year basis to balance the County's primary extraction management objectives of: 1) protecting riverine natural resources and 2) accommodating the needs for construction aggregate for local use. Table 2 describes the primary gravel extraction river reaches referred to in Table 1.

Table 2 - Description of River Reaches Used To Sort and Report Extraction Data

Approximate Length (miles)	River Reaches
7	Mad River The Mad River Reach extends approximately seven miles downstream from the Blue Lake Fish Hatchery to just below the Highway 299 Bridge near Arcata.

6	Lower Eel River The Lower Eel River Reach extends approximately six miles downstream from the mouth of the Van Duzen River to near Fernbridge.
5	Lower Van Duzen River The Lower Van Duzen River Reach extends upstream approximately five miles from the mouth of the Van Duzen River.
26	Middle Reach of Eel River The Middle Reach of the Eel River extends upstream from Scotia (River mile 20) for approximately 26 miles to River Mile 46.
17	South Fork Eel River Reach The South Fork Reach extends from Garberville (River mile 33) upstream to Cooks Valley near the Mendocino County line (River mile 50), a distance of approximately 17 miles.
15	Trinity River Reach The Trinity River Reach extends downstream about 15 miles from near Willow Creek into the Hoopa Valley.
	“Isolated Sites” Five extraction sites are more or less isolated from the rest of project. These are the <i>Satterlee Bar</i> on the main stem of the Eel river at Fort Seward, the <i>PL Bar</i> on the Van Duzen River, the <i>Branstetter Bar</i> on Bear River, the <i>Charles Bar</i> on Larabee Creek, and the <i>Cook Bar</i> on the North Fork of the Mattole River.

EXTRACTION METHODOLOGY

CHERT classifies extraction techniques into **the nine descriptive categories described in Table 3**. It will be helpful and cost effective if the operators and their consultants use this terminology when developing their extraction designs. Also, they should report pre extraction and post extraction volumes and acreages separately for each extraction method.

Table 3. - CHERT Extraction Methodology Nomenclature

Narrow Shoreline Skim	Wide Offset Skim	Dry Trench
Wide Shoreline Skim	Overflow Channel Skim	Wetland Pit
Narrow Offset Skim	Wet Trench	Alcove

Extraction Method Terminology:

- **Shoreline Skim:** One edge of the skim is adjacent to or close to the edge of the low flow channel and likely near but not below the 35 % flow elevation level.
- **Offset Skim:** A skim that is somewhat separated from the low flow channel and 35 % flow elevation by perennial vegetation or a substantial vertical or horizontal offset.
- **Narrow Skim:** The skim width is no greater than 1/3 the width of the unvegetated bar surface.
- **Wide Skim:** The skim width is greater than 1/3 the width of the unvegetated bar surface.
- **Overflow Channel Skim:** A skim within a dry overflow channel.
- **Alcove:** A relatively deep excavation strategically located and designed to simulate natural occurring shoreline pools that can provide cool water summer habitat and/or high flow winter refugia.

- **Wetland Pit:** A strategically located and designed pit simulating a remnant channel.
- **Wet Trench:** A trench that is deep enough to intercept the water table at the time of excavation.
- **Dry Trench:** A relatively long linear shallow skim that does not intercept the water table at the time of excavation.

2005 EXTRACTION SUMMARIES

Mad River

O'Neill Bar 2005 (Eureka Ready Mix)				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	7,000	2.6	7,030	2.6

CHERT comments regarding O'Neill Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Miller Almquist Bar 2005 (Miller Family Trust)				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	6,300	2.1	6,660	2.1

CHERT comments regarding Miller Almquist Bar 2005 extraction:

- The format of the post extraction cross sections does not conform to CHERT/LOP requirements. Note the scale requirements and that the post extraction cross sections are to be superimposed on the pre extraction cross sections.
- From the cross section data presented CHERT can not determine if the extraction complied with the approved plan. However, no discrepancies between the plan and the excavation were noted during the post extraction site visit.
- The electronic XS data format does not conform to the required NMFS/LOP format.

Johnson-Spini Bar 2005 (Eureka Ready Mix)				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	23,960	6.9	24,630	6.9
Alcove	1,870	.5	1,700	.5
Totals	25,830	7.4	26,330	7.4

CHERT comments regarding Johnson-Spini Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Essex Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	3,325	1.0	2,150	0.8

CHERT comments regarding Essex Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Johnson Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	2,310	1.6	1,510	1.6

CHERT comments regarding Johnson Bar 2005 extraction:

- CHERT approved 5,090 cubic yards. NMFS required the operator to reduce the width of the skim yielding an approved excavation of 2,310 cubic yards.
- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Christie Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide RB Shoreline Skim	6,030	2.1	5,750	2.1
Wide LB Shoreline Skim	2,940	2.2	2,500	2.2
Overflow Channel Skim	19,910	4.6	19,810	4.6
Narrow LB Offset Skim	13,270	3.3	13,320	3.3
Totals	42,150	12.2	41,380	12.2

CHERT comments regarding Christie Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Blue Lake Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	4,980	1.6	4,010	1.6
Overflow Channel Skim	12,740	3.0	9,360	3.0
Totals	17,720	4.6	13,370	4.6

CHERT comments regarding Blue Lake Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.
- Following the post extraction site visit the operator placed a berm at the downstream end of the overflow channel. The purpose was to reduce the risk of attracting early migrating adult salmonids into the overflow channel.

Emmerson Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Narrow Shoreline Skim	11,460	3.2	10,130	3.2
Narrow Offset Skim	7,260	1.9	6,860	1.9
Totals	18,720	5.1	16,990	5.1

CHERT comments regarding Emmerson Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Guynup Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Offset Skim	10,990	3.2	8,260	2.9
Narrow Offset Skim	4,130	1.6	3,580	1.3
Totals	15,120	4.8	11,840	4.2

CHERT comments regarding Guynup Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Lower Eel River

Singley Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

CHERT comments regarding Singley Bar 2005

- CHERT received no monitoring data for this bar.:

Worswick Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Drake Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Sandy Prairie Plant B 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
B1a Overflow Channel Skim	10,010	3.9	7,120	2.6
B1b Overflow Channel Skim	7,180	3.0	7,540	4.4
B1c Overflow Channel Skim	7,390	2.7	6,400	2.7
B2 Wet Trench	39,520	2.2	27,550	2.2
B3 Narrow Shoreline Skim	820	.5	890	0.5
Totals	64,920	12.3	49,500	12.4

CHERT comments Sandy Prairie Plant B 2005 extraction:

- There are a large number of monitoring cross sections at this site. The operator uses these monitoring cross sections as extraction cross sections. This site usually has several extraction areas. In some cases the monitoring cross sections are oblique to the extraction areas. Volume calculations based upon oblique cross sections may be inaccurate. In the future CHERT will require additional extraction cross sections located normal to the planned extraction areas.
- As depicted in cross section 10.5 the left edge of the trench (B2) is 55 feet left of the design.
- The excavation floor at the left end of cross section 12.5 in area B1b is about 2 feet below grade and the excavation end area is 81 square feet too large.
- In area B-1c the excavation at cross section 13 is left of the plan and 88 square feet too large.
- The excavation throughout area B-1c is below grade. The plan specified that the excavation should cease if the skim floor reached the capillary fringe. The actual excavation went below the water table.

Sandy Prairie Plant A 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
A1 Wide Shoreline Skim	7,580	5.7	3,495	3.1
A2 Narrow Shoreline Skim	6,980	2.3	6,780	2.2
A3 Overflow Channel Skim	31,340	5.3	38,895	7.2
A4 Overflow Channel Skim	3,150	1.4	1,485	1.1
A5 Narrow Shoreline Skim	9,910	2.7	8,355	2.5
A6 Narrow Shoreline Skim	1,930	1.6	1,470	1.4
Totals	60,890	19.0	60,480	17.5

CHERT comments Sandy Prairie Plant A 2005 extraction:

- There are a large number of monitoring cross sections at this site. The operator uses these monitoring cross sections as extraction cross sections. This site usually has several extraction areas. In some cases the monitoring cross sections are oblique to the extraction areas. Volume calculations based upon oblique cross sections may be inaccurate. In the future CHERT will require additional extraction cross sections located normal to the planned extraction areas.
- The excavation at cross section 2.5 in area A-5 is about 35 feet wider than planned.
- The excavation at cross section 9 in area A-2 exceeded the plan by 53 square feet.
- The excavation floor at cross section 9.5 in area A-3 is too deep.
- The excavation at cross section 9.5 in area A-6 is shifted 50 feet to the left.
- The excavation at cross section 10 in area A-3 indicates that most of the extraction floor is 2 to 3 feet below grade and 394 square feet (34%) larger than planned.
- Cross section 10.4 in area A-3 indicates that much the extraction floor is about 2 feet below grade and the extraction is 319 square feet (59%) larger than planned.
- Cross section 10.6 in area A-3 indicates that most of the extraction floor is about 1 foot below grade.
- The excavation floor at the left end of cross section 10.8 in area A-3 is about 1.5 feet below grade. According to the aerial photograph this cross section is outside the extraction area. But, according to the cross sections and volume calculations it is inside the extraction area.

Hauck Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wet Trench	52,030	7.1	39,390	6.8
Wide Shoreline Skim	17,530	3.0	16,910	3.0
Totals	69,560	10.1	56,300	9.8

CHERT comments Hauck Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Van Duzen River

Rock Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
A Narrow Shoreline Skim	9,820	3.0	9,070	3.0
B Overflow Channel Skim	18,110	2.8	16,300	2.8
C Wide Shoreline Skim	20,000	4.6	20,960	4.5
D Wet Trench	21,300	4.8	27,110	5.0
Totals	69,230	15.2	73,440	15.3

CHERT comments Rock Bar 2005 extraction:

- The wet trench excavation exceeded the plan volume by 5,810 cubic yards.
- With one exception, the trench post cross section end areas exceeded the pre cross section end areas. These differences ranged from plus 50 square feet to plus 300 square feet.

Van Duzen River Ranch 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Bar 6 Wide Shoreline Skim	27,750	5.5	24,950	5.7
Bar 10 Wide Offset Skim	45,100	6.7	10,160	2.8
Totals	72,850	12.2	35,110	8.5

CHERT comments Van Duzen River Ranch 2005 extraction:

- The format of the post extraction cross sections does not conform to CHERT/LOP requirements. Note that the post extraction cross sections should be superimposed on the pre extraction cross sections.
- The Bar 6 post extraction cross section at 14+00 differs from the plan so as to avoid a group of willows.
- The Bar 10 extraction is above OHW. The original design was a wide skim. The actual extraction was "narrow".
- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.
- Following the post extraction site visit the operator groomed the downstream end of Bar 6 in order to improve drainage of the bar surface.

Tom Bess Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	17,010	5.5	14,620	5.5

CHERT comments Tom Bess 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.
- No electronic XS data for West site.

Middle Reach of Eel River

Scotia Dam Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Truck Shop Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Dinner Creek Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Three Mile Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Elinor Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

South Fork Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Bowlby Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Vroman Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Maynard Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

South Fork Eel River

Wallan and Johnson Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	10,000	3.5	9,380	3.3

CHERT comments Wallan and Johnson Bar 2005 extraction:

- Portions of the excavation floor along cross sections 1.7, 2 and 2.5 are below grade.

Randall 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
1 Wide Offset Skim	16,340	3.7	11,480	3.2
2 Wide Shoreline Skim	3,860	0.8	0	0
3 Overflow Channel Skim	19,060	1.9	10,740	2.0
4 Alcove	1,610	0.3	0	0
Totals	40,870	6.7	22,220	5.2

CHERT comments Randall 2005 extraction:

- The overflow channel was shifted 15 feet to the left at cross section 0.4.
- The overflow channel was shifted 20 feet to the left at cross sections 1 and 2.
- The overflow channel was shifted 15 feet to the right at cross section 3.
- There is excess excavation at the right edge of cross section 7.3E.
- The excavation floor is 2 feet below grade at the right edges of cross section 7.1E and cross section 7.2E.
- The excavation floor is 1 foot below grade across cross section 7.5E.

Cooks Valley Humboldt County 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
2 Wide Shoreline Skim	14,040	3.4	4,880	1.0
3 Wide Shoreline Skim	1,380	0.2	0	0
Totals	15,420	3.6	4,880	1.0

CHERT comments on Cooks Valley Humboldt County 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.

Cooks Valley Mendocino County 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wet Trench	16,480	1.1	0	0

CHERT comments on Cooks Valley Mendocino County 2005 extraction:

- Operator ran out of time. No extraction in Mendocino County this year.

Trinity River

Rowland Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	15,560	2.6	7,400	1.4

CHERT comments on Rowland Bar 2005 extraction:

- Most of the extraction floor at XS 2 is 2 to 3 feet below grade.
- Most of the extraction floor at XS 2.5 is 1 to 2 feet below grade.

Willow Creek Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
1 Wide Shoreline Skim	2,490	0.9	2,050	1.0
2 Wide Shoreline Skim	3,520	0.7	2,270	0.8
3 Wide Shoreline Skim	32,680	2.9	4,730	1.5
Totals	38,690	4.5	9,050	3.3

CHERT comments on Willow Creek Bar 2005 extraction:

- A CHERT post extraction site visit and an off site review of pre and post extraction cross sections and volume calculations indicates that the excavation complies with the plan.
- The CHERT approved extraction exceeded the Corps permitted volume. The Corps lowered the allowable extraction volume to 25,000 cy but did not specify a plan for obtaining the reduced volume.

McKnight Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Wide Shoreline Skim	9,850	1.3	14,120	1.7

CHERT comments on McKnight Bar 2005 extraction:

- CHERT did not receive a hard copy of the project proposal.
- The operator over extracted at every cross section.
- A December 27, 2005 letter from the operator specifies that some of the over excavation was used to repair the access road and that the material was not removed from the site. CHERT believes that such excavation and displacement should be described fully during the project planning phase.

ISOLATED SITES

Upper Reach of Eel River

Fort Seward Ranch Satterlee Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Larabee Creek

Charles Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
Dry Trench	20,760	2.9	9,540	2.4

CHERT comments on Charles Bar 2005 extraction:

- The operator shifted the location of the trench to make room for the crusher.
- No post extraction cross sections were provided.

Van Duzen River

PL Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

Bear River

Branstetter Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

North Fork of the Mattole

Cook Bar 2005 Extraction Summary				
Extraction Method	Approved Pre Extraction		Actual Post Extraction	
	Volume (cy)	Area (acres)	Volume (cy)	Area (acres)
No Extraction in 2005				

APPENDIX A
LIST OF HUMBOLDT COUNTY GRAVEL EXTRACTION OPERATORS

1	Drake Materials
2	Eureka Ready Mix
3	Fort Seward Ranch
4	Granite Construction
5	Humboldt County
6	Klamath-Trinity aggregates
7	Leland Rock
8	Mad River Sand and Gravel
9	Mercer Fraser Corporation
10	Miller-Almquist
11	Palco
12	Randal Sand & Gravel
13	Tom Bess
14	Van Duzen River Ranch
15	Wallan & Johnson

APPENDIX B
LIST OF CHERT REVIEWED EXTRACTION SITES

Bess Bar East Site	Fort Seward Bar	Rock Bar
Bess Bar West Site	Guynup Bar	Rowland Bar
Blue Lake Bar	Hauck Bar	Sandy Prairie Plant A
Bowlby Bar	Johnson Bar	Sandy Prairie Plant B
Branstetter Bar	Johnson-Spini Bar	Scotia Dam Bar
Charles Bar	Maynard Bar	South Fork Bar
Christie Bar	McKnight Bar	Three Mile Bar
Cook Bar	Miller-Almquist Bar	Truck Shop Bar
Cooks Valley Humboldt	Noble Bar 10	Vroman Bar
Cooks Valley Mendocino	Noble Bar 6	Wallan Bar
Dinner Creek	O'Neill Bar	Willow Creek Bar
Drake Bar	PL Bar	Worswick Bar
Elinor Bar	Randal County Bar	
Emmerson Bar	Randal Home Bar	
Essex Bar	Randall Tooby Bar	

APPENDIX C

CHERT EXTRACTION VOLUME SUMMARY OVER TIME.

Mad River Extraction (1992-2005)

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1992	115,000	115,000	100
1993	122,100	138,400	113
1994	134,500	134,898	100
1995	210,637	226,265	107
1996	203,998	189,517	93
1997	252,926	210,976	83
1998	265,795	223,352	84
1999	196,212	174,974	89
2000	204,748	146,534	72
2001	199,215	167,719	84
2002	204,991	171,937	84
2003	150,390	136,790	91
2004	156,540	141,250	90
2005	138,475	127,200	92
Totals	2,260,512	2,036,362	90
Averages	188,376	169,697	90

Lower Eel River Extraction (1997-2005)

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1997	561,700	326,500	58
1998	399,100	273,000	68
1999	471,400	290,500	62
2000	291,300	208,600	72
2001	389,900	119,300	31
2002	387,300	220,000	57
2003	318,300	163,900	51
2004	188,840	120,305	64
2005	199,370	166,280	83
Totals	3,207,210	1,601,800	50
Averages	356,357	228,829	64

Van Duzen River Extraction (1997-2005)

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1997	120,000	81,600	68
1998	119,100	103,700	87
1999	159,900	108,800	68
2000	194,800	121,300	62
2001	161,700	85,600	53
2002	202,500	167,400	83
2003	175,100	123,000	70
2004	179,045	92,610	52
2005	159,090	123,170	77
Totals	1,133,100	791,400	70
Averages	161,871	113,057	70

Middle Reach of Lower Eel River Extraction (1996-2005)

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1996	?	66,300	?
1997	147,300	84,900	58
1998	157,900	99,400	63
1999	134,900	124,900	93
2000	160,100	131,000	82
2001	116,100	64,000	55
2002	132,767	121,608	92
2003	74,030	54,060	73
2004	0	0	
2005	0	0	
Totals	923,097	746,168	?
Averages	102,566	74,617	?

South Fork Eel River Extraction (1997-2005)

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1997	67,700	74,700	110
1998	75,400	70,100	93
1999	85,400	75,900	89
2000	75,700	53,700	71
2001	66,000	43,100	65
2002	58,163	48,122	83
2003	87,060	54,660	63
2004	80,730	50,745	63
2005	82,770	36,480	44
Totals	515,423	420,282	82
Averages	73,632	60,040	82

Trinity River Extractions (1997-2005)

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1997	47,500	40,000	84
1998	35,000	28,100	80
1999	64,300	66,900	104
2000	18,000	22,200	123
2001	46,600	15,100	32
2002	38,145	19,394	51
2003	76,210	49,390	65
2004	62,075	32,700	53
2005	64,100	30,570	48
Totals	325,755	241,084	74
Averages	46,536	34,441	74

Does not include Tribal extractions.

Isolated Sites Gravel Extraction (1997-2005)

Extraction Volumes 1997-2005
Branstetter Bar on Bear River

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1997	0	0	
1998	0	0	
1999	0	0	
2000	0	0	
2001	0	0	
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
Totals	0	0	
Averages	0	0	

Extraction Volumes 1997-2005
Cook Bar on the North Fork of the Mattole

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1997	0	0	
1998	0	0	
1999	30,100	19,000	63
2000	0	0	
2001	0	0	
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
Totals	30,100	19,000	63
Averages	3,345	2,110	63

Extraction Volumes 1996-2005
Charles Bar on Larabee Creek

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1996	None	3,300	?
1997	0	0	
1998	22,800	23,300	102
1999	0	0	
2000	0	0	
2001	0	0	
2002	0	0	
2003	0	0	
2004	24,790	3,100	13
2005	20,760	9,540	46
Totals	68,350	39,240	?
Averages	7,595	3,925	?

Extraction Volumes 1996-2005
PL Bar on the Van Duzen River

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1996	None	3,400	?
1997	0	0	
1998	0	0	
1999	0	0	
2000	0	0	
2001	0	0	
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
Totals	0	3,400	?
Averages	0	340	?

Extraction Volumes 1997-2005
Satterlee Bar on the Eel River

	Recommended	Extracted	
	Volume	Volume	Percent
Year	(cy)	(cy)	Extracted
1997	5,000	4,200	84
1998	0	0	
1999	0	0	
2000	43,200	22,900	53
2001	0	0	
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
Totals	48,200	27,100	56
Averages	5,355	3,010	56