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PROJECT REFERENCE NO.: LU-04-0072. Ozena Valley Sand and Gravel – Ozena Valley Ranch Animal Husbandry-Aquaculture	**PROJECT PLANNER:** Scott Ellison
DATE: 16 July 2004. Site visit conducted in 30 April 2004	**PROJECT BIOLOGIST:** David L. Magney and Cher Batchelor of David Magney Environmental Consulting (DMEC)

PROJECT LOCATION: The project site is located in Ozena Valley within a portion of the Cuyama River floodplain adjacent to/north of Lockwood Valley Road, approximately 1.2 miles from its intersection with State Route 33 (SR33). The project site is located at N½ NW¼ S20 T7N, R23W, Reyes Peak, California Quadrangle [USGS 7.5-minute Series Topographic Map]; and at approximately 34.69215° North, 119.34596° West. The property is currently under Land Conservation Act Contract 1-3.1.

PROJECT ADDRESS: a portion of APN 002-0-140-075, with designation of Open Space and Agricultural Exclusive zoning.

DESCRIPTION OF PROJECT: Mr. Mike Virgilio (Applicant) proposes to provide professional aquiculture services to the California Department of Fish and Game (CDFG) and to public health agencies. Specifically, the applicant proposes to raise and sell Mosquito Fish (*Gambusia affinis*). One stockpond has been excavated onsite in compliance with CUP-5170-1 requirements, and a second agricultural stockpond, approximately 15 acres in size, is proposed to be excavated (CUP-5170-2) for "Mining and Accessory Uses". The excavated materials would be processed for sale as construction-grade aggregate utilizing the existing processing facilities. Both ponds are landlocked, groundwater-fed, and do not receive or distribute flows of surface water.

Project objectives include: (1) serving as a water source for irrigation of crops grown on the surrounding property; (2) provide a water source for the U.S. Forest Service in the event of a wildfire in the area; (3) cultivate mosquito fish for sale to CDFG and public health agencies; and (4) help combat the West Nile Virus by providing a local source of Mosquito Fish.

ENVIRONMENTAL SETTING: The landscape in the vicinity of the project site is relatively flat, and the approximate elevation onsite is 3,570 feet. The entire project site is within the active floodplain of the upper Cuyama River. Portions of the project site have been actively farmed and/or grazed by livestock. The proposed mining area for the second stockpond is located within the Cuyama River floodplain southwest of the existing stockpond, and these floodplain areas are infrequently flooded. The Cuyama River is located immediately to the south of the proposed and existing ponds. It flows generally in a westerly direction and is impounded approximately 24 miles from the ocean by Twitchell Dam in Santa Barbara County. Vehicle access to the second stockpond mining expansion area is via a fair-weather crossing over two culvert pipes under a compacted dirt road.

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DMEC conducted a cursory biological field survey on 30 April 2004 of the proposed Ozena Valley Ranch stockpond area. Prior to the field survey, DMEC conducted a search of the CDFG's California Natural Diversity Database (CNDDB) RareFind3 (CDFG 2004) to account for all CNDDB-tracked (and reported) special-status species and habitats in the vicinity of the project site.

A total of 73 vascular plant species were observed in the vicinity of the proposed stockpond area. The project site vegetation is comprised of five predominant habitat types, including Southern Cottonwood-Willow Riparian Forest, Southern Willow Scrub, Great Basin Sagebrush Scrub, Scalebroom Floodplain Scrub, and Alkali Meadow. These habitat types observed during the field survey are discussed briefly below, and are described in detail in the previously submitted CEQA Initial Study for Ozena Valley Sand and Gravel (Ozena Valley Ranch Surface Mine and Processing Facility - CUP 5170-1, dated 21 May 2004).

Southern Cottonwood-Willow Riparian Forest (Holland 1986) was observed along the western boundary of the proposed pond area. Southern Willow Scrub was observed along the northern boarder of the proposed stockpond area, is predominantly a pure stand with no emergent trees, and was observed as dense large patches throughout the Alkali Meadow habitat. The CDFG *List of California Terrestrial Natural Communities* (CDFG 2002) lists Southern Cottonwood-Willow Riparian Forest and Southern Willow Scrub as sensitive habitats; however, these plant communities are not mapped by the CNDDB (CDFG 2004) in the vicinity of the project site.

Great Basin Sagebrush Scrub was observed north of the proposed pond area and north of the above mentioned Southern Willow Scrub, and was observed west of the proposed pond area.

Scalebroom Floodplain Scrub was observed along the southern/southwestern boarder of the proposed stockpond area, and included small linear stands of *Salix lasiolepis* and *Salix exigua*. Scalebroom Floodplain Scrub is a subset of Riversidian Alluvial Fan Sage Scrub (Holland 1986) habitat, and the CDFG *List of California Terrestrial Natural Communities* (CDFG 2002) lists Riversidian Alluvial Fan Sage Scrub as a sensitive habitat, but is not mapped near the project site by the CNDDB.

Alkali Meadow occupies the landscape transitional between upland grassland habitats and the wetter Freshwater Marsh/Riparian Scrub habitats, and has potential for higher species richness compared to adjacent plant communities. Alkali Meadow was observed throughout the northern border of the proposed stockpond/mining area, and was observed as an understory to the above-mentioned Southern Willow Scrub. *Sidalcea neomexicana* (Salt Spring Checkerbloom), a special-status plant species, was also observed growing in this habitat.

Very few wildlife species were observed in the immediate proposed stockpond area during the 30 April 2004 survey, since this area is highly disturbed due to agricultural land uses. However, several wildlife species were observed in the surrounding habitats (discussed above), including: Side-blotched Lizard, Mallard, California Quail, Mourning Dove, Western Scrub-jay, Common Raven, American Crow, Cliff Swallow, European Starling, Killdeer, Western Meadowlark, Audubon Cottontail, California Ground Squirrel, and Coyote. Bumgardner Environmental Consulting (Bumgardner 2003) reported 54 wildlife species from throughout the entire Ozena Valley Ranch property, and they reported several special-status wildlife species as well.

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IV. BIOLOGICAL RESOURCES:	PROJECT IMPACT DEGREE OF EFFECT[1]				CUMULATIVE IMPACT DEGREE OF EFFECT			
What level of impact will the proposal have on:	**N**	**LS**	**PS-M**	**PS**	**N**	**LS**	**PS-M**	**PS**
A. Endangered, Threatened, or Rare Species				X				X
B. Wetland Habitat			X				X	
C. Coastal Habitat	X				X			
D. Migration Corridors	X				X			
E. Locally Important Species/Communities				X				X
Will the proposal:								
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X				X
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X				X	
c) Have a substantial adverse effect on federally protected wetland as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X				X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X			X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X				X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	X				X			

[1] N = No Impact; LS = Less Than Significant; PS-M = Potentially Significant Impact Unless Mitigation Incorporated; PS = Potentially Significant Impact.

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ADDITIONAL COMMENTS OR EXPLANATIONS:

Mosquito Fish and Catfish are nonnative invasive fish species. Presently, neither Mosquitofish nor Catfish are known to occur in the upper Cuyama River and tributaries. Aquaculture of these fish species, into isolated ponds in areas adjacent to a natural river system (Cuyama River), creates a high potential for the introduction of these species into the Cuyama River and tributaries. The existing pond onsite was created by excavation for aggregate resource mining in an area that previously contained a large agricultural pond, which was filled in by floodwaters during the winter of 1998. A larger pond is proposed to be excavated to the west of the existing pond. Since flood flows in 1998 were large enough to reach that portion of the property and to fill the previously existing pond, a similar flooding event can be expected to occur again in the future. The following information on Mosquitofish was compiled and provided by Dr. Sabrina Drill, Natural Resource Advisor for Los Angeles and Ventura Counties, UC Cooperative Extension, Los Angeles, (323) 260-3404.

Mosquitofish can harm native ecosystems, primarily through predation on and competition with native aquatic organisms (Meffe and Carroll 1994), and have been implicated in species reductions or extinctions in Europe, Asia, Africa, several oceanic islands, and research has been devoted to their impacts on native freshwater fauna in Australia (e.g. Hammer et al. 2002, Arthington and Lloyd 1989, www.gambusia.net). The overall impact of exotic species introduction may be one of the primary contributors to world-wide decline of amphibians (Kats and Ferrer 2003).

In North America, Mosquitofish have been implicated in the decline of several aquatic species. In most cases, impacts result from predation or competition, but native poecillids throughout the arid Southwest may also face the threat of loss of genetic integrity through hybridization and introgression (Mickley et al. 1991, Hendrickson and Brooks 1991). In California, some studies have looked directly at the effect of Mosquitofish on native aquatic organisms.

Mosquitofish have been found to impact Pacific Treefrog (*Hyla regilla*) and California Newt (*Taricha torosa*) in the Santa Monica Mountains through predation on larvae, and reduced numbers of both Pacific and California Treefrog (*H. cadaverina*) and California Newt have been observed from streams where Mosquitofish are present (Goodsell and Kats 1999). Field and laboratory experiments found that Mosquitofish preyed on *H. regilla* tadpoles even in the presence of mosquito larvae, showing no preference for either prey (Goodsell and Kats 1999).

Mosquitofish are apparently capable of eliminating California Red-legged Frog (*Rana aurora draytonii*) larvae from simple communities in small artificial pools (referred to in Lawler et al. 1999); however, California Red-legged Frog is not known or expected to occur at or near the project site. In controlled field experiments, Mosquitofish were not found to prey upon California Red-legged Frog larvae, no decrease in survivorship was detected (Lawler et al. 1999). However, interaction with Mosquitofish resulted in injuries to larvae, a significant lag in time of emergence, and a significant decrease in weight at emergence. In laboratory experiments, presence of Mosquitofish reduced activity levels of Red-legged Frog larvae.

In fishless, ephemeral wetlands, Mosquitofish can have negative impacts on native arthropods. Introduction of Mosquitofish correlates with the decline of vernal pool fauna. In experimental ponds, Mosquitofish were shown to significantly reduce populations of a species of fairy shrimp, California Linderiella (*Linderiella occidentalis*) (Leyse et al. 2003). In laboratory experiments, Mosquitofish were found to prefer *L. occidentalis* to mosquito larvae.

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When another flood event washes out one or more of the excavated ponds, Mosquito Fish and Catfish will inevitably escape and colonize natural stream habitats within the Cuyama River and tributaries, such as Reyes Creek, and important Rainbow Trout stream a short distance upstream of the project site. If these nonnative fishes colonize such habitats, they have the ability to cause significant impacts to native aquatic wildlife. Once escaped, these species can be highly invasive and can create highly competitive environmental conditions for native fish and amphibian species. Catfish and Mosquito Fish will be almost certainly being washed downstream, but these fishes will potentially swim upstream into river habitats inhabited by populations of Rainbow Trout. Catfish and Mosquito Fish are scavengers and eat almost anything that fits into their mouths. The introduction of these fishes creates the potential for populations of native natural fishes and amphibians to be lost.

Any type of aquaculture farming has potential to promote contamination of the aquatic environment by pathogens. Pathogens attacking the Mosquitofish and/or Catfish could also adversely affect native aquatic species and habitats if the pathogens spread by one or more mechanisms. Outbreaks of pathogens would likely be introduced onsite from contaminated fish stock or incidental introductions from waterfowl that visit the ponds. Many aquatic organisms have been dispersed long distances by waterfowl.

***Note:** All special-status plant and wildlife species (1) tracked by CDFG's CNDDB Rarefind3 for the vicinity of the project site, (2) observed during the DMEC field survey on 30 April 2004, (3) observed or detected during Bumgardner Environmental Consulting's biological resources investigation in April and May 2003, and (4) known to occur in the vicinity of the project site, are discussed in detail in the previously submitted CEQA Initial Study for Ozena Valley Sand and Gravel (Ozena Valley Ranch Surface Mine and Processing Facility - CUP 5170-1).

Recommendations:

Impacts to aquatic resources within the upper Cuyama River and tributaries, if invasive nonnative fishes escaped, would likely result in significant impacts to the aquatic habitats invaded by Mosquitofish and Catfish. The proximity of the existing and proposed ponds adjacent to the active channel of the Cuyama River and their presence within the river's floodplain nearly guarantees that these ponds will be breached sometime in the future, as occurred during 1998. Locating the ponds upslope of the floodplain would greatly reduce the potential for impacts to aquatic resources as the result of escape of the nonnative fishes. Armoring of the banks of the ponds could reduce the potential from destruction of the ponds from flooding, but would not likely prevent escape from the ponds. Furthermore, such armoring would require analysis of those activities, which are not part of the proposed project.

Rearing Mosquitofish in aboveground tanks entirely out of the Cuyama River floodplain would eliminate or greatly reduce the risk of escape of this nonnative fish as a result of flooding events, and would not result in a potential significant impact.

Indirect impacts to adjacent aquatic habitats from pathogens at the fish ponds could result in significant impacts. The proposed project does not describe how pathogens affecting the aquaculture project would be managed. The potential aquaculture pathogens that are likely to affect the fish ponds should be identified and specific treatment prescriptions and management plans developed. Those plans should also address outbreaks into natural habitats originating from the project site. The pathogen

management plans should consider the potential adverse affects on native habitats and species, and should not result in adverse impacts to those biological resources.

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D. MANDATORY FINDINGS OF SIGNIFICANCE Based on the information contained with Section B6:	Yes/Maybe	No
1. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of major periods of California's history or prehistory?	X	
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one that occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)	X	
3. Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effect of other current projects, and the effect of probable future projects. (Several projects may have relatively small individual impacts on two or more resources, but that total of those impacts on the environment is significant.)	X	
4. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?		X

E. DETERMINATION OF ENVIRONMENTAL DOCUMENT: On the basis of this initial evaluation:	
[ ]	I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION should be prepared.
[ ]	I find that although the proposed project could have a significant effect on the environmental, there would not be a significant effect in this case because the mitigation measure(s) described in section C of the Initial Study will be applied to the project, A MITIGATED NEGATIVE DECLARATION should be prepared.
[X]	I find the proposed project, individually and/or cumulatively, MAY have a significant effect on the environmental, and an ENVIRONMENTAL IMPACT REPORT is required.
[ ]	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environmental, but at least one effect 1) has been adequately analyzed in and earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
[ ]	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Biological Resources Initial Study Preparer

16 July 2004
Date