



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Ecological Services  
Carlsbad Fish and Wildlife Office  
2730 Loker Avenue West  
Carlsbad, California 92008



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MCAS EL TORO  
SSIC NO. 5090.3

In Reply Refer To:  
FWS-OR-1682.2

OCT 21 2002

Mr. Dean Gould  
BRAC Environmental Coordinator  
Department of the Navy  
Southwest Division  
Naval Facilities Engineering Command  
1220 Pacific Highway  
San Diego, California 92132-5190

Re: BRAC Closure Team (BCT) Meeting September 25, 2002, Marine Corps Air Station (MCAS) El Toro Installation Restoration Program (IRP) Site 1, Explosive Ordnance and Disposal (EOD) Range Status Briefing

Dear Mr. Gould:

The U.S. Fish and Wildlife Service (Service) appreciates the opportunity for the update on the status of MCAS El Toro Site 1, EOD Range. As stated at the subject meeting, the "Final Work Plan, Phase II Remedial Investigation, IRP Site 1, Explosive Ordnance and Disposal Range, MCAS El Toro, Nov 2001" was not included in your transmittal letter of May 31, 2002, to J. Gibson (Service). Thank you for providing the document subsequent to the meeting; however, we have not had the opportunity to review it. Our comments will focus on the subject meeting and our prior review of the Draft Work Plan dated September 2000, for the subject site.

We have concerns regarding the EOD pond within Site 1, EOD Range because a "healthy, viable" population of Riverside fairy shrimp (*Streptocephalus woottoni*) was observed in the EOD pond in 1998 (KEA Environmental 1998). Information was provided at the meeting regarding the geophysical survey conducted at Site 1, EOD Range and the EOD pond. The Service needs more information regarding the technology used to conduct the geophysical survey on the EOD pond (e.g., magnetometry, ground penetrating radar (GPR), electromagnetic induction (EM), or multiple sensors, infrared sensors) to fully evaluate potential impacts on the Riverside fairy shrimp.

As described at the meeting, the geophysical survey was conducted by walking back and forth on the EOD pond with a wheeled vehicle weighing approximately forty pounds. The Service advised the Navy during the meeting that this type of remedial activity conducted on the EOD pond should be coordinated with the Carlsbad Fish and Wildlife Office and monitored by a biologist possessing a 10(a)(1)(A) Recovery permit under Section 10 of the Endangered Species Act of 1973, as amended, that authorizes Riverside fairy shrimp activities. This type of activity for Site 1, EOD Range has not been covered by a Section 7 Consultation with the Service. Furthermore, potential impacts to the Riverside fairy shrimp were not described as part of the project for remedial investigation activities at Site 1, EOD Range by your letter of

March 22, 2001, to James Bartel (Service). This letter further advises the Navy that as stated at the meeting, our records indicate that Mr. J. Lincer does not possess the appropriate permit to monitor activities regarding the Riverside fairy shrimp. Our records indicate that Mr. J. Lincer possesses a current 10(a)(1)(A) Recovery permit authorizing him to conduct *presence/absence* surveys for the coastal California gnatcatcher (*Polioptila californica*, "gnatcatcher"). Monitoring for the gnatcatcher was covered by the informal consultation for remedial investigations on Site 1, EOD Range in our letter of May 3, 2001, to Michael C. Stroud (Navy). Please contact our office for a current list of those individuals who possess a 10(a)(1)(A) Recovery permit that authorizes Riverside fairy shrimp activities to monitor remedial activities associated with Site 1, EOD Range. The Service supports the Navy in their remedial investigation of the EOD pond, and we will work closely with the Navy regarding the Riverside fairy shrimp in order that the Navy can fully investigate potential chemical contamination as well as the physical survey of the EOD pond.

As stated in our May 3, 2001, letter we do not have enough information to determine whether the use of Site 1 as an EOD Range has resulted in contamination that is adversely affecting Riverside fairy shrimp in the pond. We reiterated this at the meeting and expressed our concern that soil samples have not been collected from the EOD pond and analyzed for Site 1, EOD Range contaminants for energetics (nitroaromatics and nitramines) as well as contaminants associated with igniting explosives including lead and mercury. The Navy responded at the meeting that the EOD pond has not been sampled because it did not occur within the statistical grid for intrusive investigation resulting from the geophysical survey. Figure 3-1 of the OE Range Evaluation Work Plan shows that the sample design for intrusive sampling was based on a *one acre* grid. The *Guide for Characterization of Sites Contaminated with Energetic Materials* describes a systematic grid based on smaller measurements for sampling explosives in soil (e.g., six-meter by six-meter grids, further subdivided into three-meter by three-meter grids) (Thiboutot et al. 2002). Please comment if the intrusive sampling design for the EOD Range followed this guide, and if so would a smaller grid system have included the EOD pond for intrusive sampling?

The EOD pond was not sampled based on results of the geophysical survey. However, geophysical surveys cannot account for dispersion of potential chemical contamination of the environment (e.g., the EOD pond) resulting from detonation and disposal of munitions (Thiboutot et al. 2002). The fate and transport of contaminants have not been fully characterized with regard to the EOD pond. Detonation of munitions at Site 1, EOD Range could result in atmospheric dispersion of toxic emissions or toxic levels of heavy metals into the environment. Therefore, it is inappropriate to conclude that Site 1, EOD Range activities did not impact the EOD pond based solely on the geophysical survey of 1999 as outlined in the September 25, 2002, BCT Briefing handout for the IRP Site 1 Update.

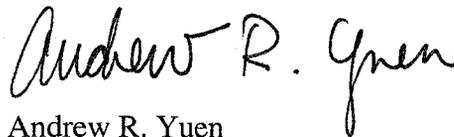
Characterization of the EOD pond is further warranted in view of the recent discovery of perchlorate in the groundwater collected from the monitoring well north of the EOD pond. Recent studies show perchlorates inhibit development and metamorphosis in aquatic species. Goleman et al. (2002) showed that exposure to perchlorate concentrations in the parts-per-billion range inhibited metamorphosis in amphibians. They further concluded that perchlorate contamination may pose a threat to normal development and growth in natural amphibian populations. Furthermore, the dermal route of exposure to munition contaminants

(e.g., 2,4,6-trinitrotoluene) has been shown to be a high route of exposure for some species (Johnson et al. 1999). The EOD pond should be characterized to verify that ecological receptors are not at risk from exposure to explosive contaminants.

The source of the perchlorate discovered north of the pond has not been fully characterized; therefore, a potential exists for transport of surface soil contaminants to the EOD pond due to sheet flow and/or surface runoff in this area. Because the perchlorate source and the EOD pond have not fully been investigated, it is premature to conclude that the exposure pathway is incomplete for the Riverside fairy shrimp and inappropriate to conclude that no further assessment is recommended as presented in the September 25, 2002, BCT Briefing handout for the IRP Site 1 Update. Furthermore, it is premature to conclude this prior to conducting an ecological risk assessment without including all stakeholders. As specified per Tri-Service Remedial Project Manager's Handbook for Ecological Risk Assessment, "the lead agency has the responsibility to coordinate planning, investigation, and assessment of releases with the affected trustees (Simini et al. 2000; NCP §300{b}{7}; CERCLA §104{b}{2}). Information and documentation are essential to assist the natural resource trustee in the determination of actual or potential natural resource injuries.

The Service appreciates the Navy's recent update on Site 1, EOD Range. We encourage the chemical investigation of the EOD pond and look forward to working with the Navy on the ecological risk assessment to be conducted for Site 1, EOD Range. Investigations of the pond should be developed in coordination with the Service because of the potential for take of the Riverside fairy shrimp. We appreciate your efforts to avoid impacts to listed species. If you have any questions regarding these comments, please contact Judy Gibson of my staff at 760-431-9440.

Sincerely,



Andrew R. Yuen  
Deputy Field Supervisor

cc: Triss Chesney, DTSC  
Nicole Moutoux, USEPA  
Patricia Hannon, RWQCB  
Polin Modanlou, LRA

References:

- Goleman, W. L., J. A. Carr, and T. A. Anderson. (2002). Environmentally relevant concentrations of ammonium perchlorate inhibit thyroid function and alter sex ratios in developing *Xenopus laevis*. *Envtl. Toxicol. & Chem.* 21: 590-597.
- Goleman, W. L., L. J. Urquidi, J. A. Carr, T. A. Anderson, E. E. Smith, and R. J. Kendall. (2002) Environmentally relevant concentrations of ammonium perchlorate inhibit development and metamorphosis in *Xenopus laevis*. *Envtl. Toxicol. & Chem.* 21: 424-430.
- Johnson, M. S., L. S. Franke, R. B. Lee, and S. D. Holladay. 1999. Bioaccumulation of 2,4,6-trinitrotoluene and polychlorinated biphenyls through two routes of exposure in a terrestrial amphibian: is the dermal route significant. *Envtl. Toxicol. & Chem.* 18: 873-878.
- KEA Environmental. 1998. Status Report : Biological Conditions at MCAS El Toro to Date. Memorandum to Mike Downs, March 30, 1998.
- Simini, M., and R. T. Checkai, and M. E. Maly. 2002. Tri-Service Remedial Project Manager's Handbook for Ecological Risk Assessment. Aberdeen Proving Ground, MD.
- Thiboutot, S., A. Ampleman, and A. D. Hewitt. 2002. Guide for Characterization of Sites Contaminated with Energetic Materials. USACE, Cold Regions Research and Engineering Laboratory. ERDC/CRREL TR-02-1.
- U.S. Environmental Protection Agency (USEPA). 1998. Ecological Risk Assessment at Military Bases: Process Considerations, Timing of Activities, and Inclusion of Stakeholders. Memorandum of December 22, 1998.