STATE OF CALIFORNIA - THE RESOURCES AGENCY GRAY DAVIS, Governor

CALIFORNIA COASTAL COMMISSION
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June 3, 1999

William Normark
Coastal and Marine Geology Team, MS 999
United States Geological Survey
345 Middlefield Rd.
Menlo Park, CA 94025

RE: **ND-51-99** Negative Determination, United States Geological Survey (USGS), seismic survey, Southern California offshore waters

Dear Mr. Normark:

The Coastal Commission staff has received the above negative determination for a two-week seismic survey to map subsea earthquake faults and aquifers between Point Dume in Los Angeles County and the U.S./Mexican Border. On May 11, 1999, the Coastal Commission objected to USGS' previously-submitted consistency determination for this survey (CD-32-99). The Commission's objection was based on concerns over effects on marine mammals from surveying during nighttime hours (when visibility reduces the effectiveness of implementing monitoring and avoidance measures). The Commission informed USGS that if it would resubmit the project deleting nighttime surveying, it could be authorized by the Executive Director as a negative determination.

USGS has modified the project in response to the concerns raised by the Commission. The modifications include:

1. The survey will not operate within the 3 mile limit of State waters.

2. A safety zone of 100 meters will be observed for all marine mammals, including pinnipeds, odontocetes and mysticetes.

3. The airgun source will not be operated during nighttime periods when darkness limits observation of mammals within the safety zone.

USGS would still use the lower-intensity (and higher frequency) Huntec source at night, but not the airgun. The Huntec source would be towed at a 100 meter depth, and the horizontal and upward spreading of sound from this source is minimal (i.e., it is a fairly highly directionally-oriented source, compared to an airgun, with its more uniform sound spreading). In addition, USGS has provided a "mean spectral analysis" which shows that the predominant frequency of the Huntec source is in the 3 kHz (kiloHertz) to 5 kHz range, with very little power in the low frequency (i.e., below 1 kHz) range. It is the low frequency range which typically raises the greatest level of concern over marine mammal harassment[1]. The Huntec source fits into the class

[1] Richardson, W. J., C. R. Greene, et al. (1995). Marine Mammals and Noise. New York, Academic Press.

of sonars characterized as a "bottom profiler." Bottom profilers are commonly used in the marine environment, generally operate within the frequency range of $0.4 - 30$ kHz [2], and, based on current human understanding of anthropogenic sounds, are not a type of sonar that have raised significant environmental concerns to date.

Most of the current concern over noise impacts on marine mammals has focused on low frequency sound, primarily because it travels so much farther in the marine environment. Higher frequency sounds are common but have not been studied or, to date, raised significant environmental concerns. Richardson et al. (see footnote 2 below) states: "The disturbance and physical effects of sonars on marine mammals deserve more study, given the wide use of sonars, the high power of some units, and paucity of relevant data." Nevertheless, given the absence of data at this time that would lead to concerns over this type of sonar, the Commission staff believes the Huntec source does not raise similar concerns as the airgun and believes it is appropriate to authorize its use at night. This position could change in the context of future surveys if new information were to disclose potential adverse reactions from this type of sonar use.

In conclusion, the Coastal Commission staff agrees that, as modified in accordance with Commission direction, and with the marine mammal and other resource protection measures as discussed in CD-32-99 still included, the project is consistent with the California Coastal Management Program. Therefore, under the authority delegated to its staff by the Commission on May 11, 1999, we hereby **concur** with your negative determination for this modified project made pursuant to 15 C.F.R. Section 930.35(d). If you have any questions, please contact Mark Delaplaine of the Coastal Commission staff at (415) 904-5289.

Sincerely,

Mark Delaplaine

(for) PETER M. DOUGLAS
Executive Director

cc: Long Beach and San Diego Area Offices
Michael Fisher, USGS
Jon Childs, USGS
NOAA Assistant Administrator
OCRM
Department of Water Resources
Governor's Washington D.C. Office
NMFS (Ken Hollingshead)

[2] Low-frequency Sound and Marine Mammals: Current Knowledge and Research Needs, Committee on Low-frequency Sound and Marine Mammals, Ocean Studies Board, Commission on Geosciences, Environment, and Resources, National Research Council, March 21, 1994.