

MINUTE ITEM

CALENDAR ITEM

Case No. 37
as stated in information
only, no other information
being necessary.

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7/21/83
W 40174
Schaefer

OWENS DRY LAKE
FUGITIVE DUST CONTROL RESEARCH PROGRAM

BACKGROUND:

In July 1980 \$250,000 was appropriated by Chapter 638, Statutes of 1980, as an urgency measure to carry out a research program for studying methods of controlling fugitive dust generated from the bed of Owens Dry Lake in Inyo County. The program was for a two-year period from June 1, 1981 to June 1, 1983. The State Lands Commission was charged with the responsibility of conducting the study in cooperation with the Owens Dry Lake Task Force, a group composed of local government, business and citizens. After preliminary tests and evaluations were made, a Request for Proposal was mailed to many contractors and consultants. Westec Services, Inc. was selected by the Task Force as most capable of meeting the requirements of the project.

DESCRIPTION OF STUDY COMPONENTS:

The study consisted of three basic components: (1) Vegetative; (2) Non-vegetative; and (3) Air Quality/Meteorological Studies. Vegetative studies consisted of planting five plant species (four native and one non-native) on unmodified lake bed, modified lake bed (lake bed with sand filled trenches), and dune sand. Leaching and irrigation were accomplished by using a drip irrigation system.

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162
1655

CALENDAR ITEM NO. 37. (CONTD)

Non-vegetative studies consisted of the placement of three and four foot sand fences. Six pairs of fences separated by 50 feet to 1,320 feet were placed on the lake bed surface. Other non-vegetative experiments included placing of leaching pits and use of chemical stabilization materials.

Three weather stations were maintained during the study; one at the study site, one on the eastern side of the lake and one on the western side of the lake. Dust threshold levels and wind abrasion potentials were determined by use of a portable wind tunnel. Particulate monitoring during air quality episodes were also conducted.

DESCRIPTION OF PRELIMINARY RESULTS:

With the exception of the non-native salt cedar, the native shrubs and grasses could survive on the lake bed surface, given proper irrigation and care. The ability of the plants to survive after withdrawal of irrigation has not been determined as of this writing. Because of the high irrigation requirements and the high labor requirements we do not believe that a large planting program on the lake bed is feasible. Limited stabilization with vegetation on dunes or berms may be possible.

Non-vegetative controls may be more effective in stabilization of sand dunes. Three-foot sand fences placed 50-100 feet apart appear to be effective in stabilizing blowing sand. Placement of fences near the dunes on the shoreline appears likely to reduce the amount of blowing sand crossing the lakebed. Placement of rows of fences across the lakebed may break up wind patterns to further reduce emissions.

Chemical dust stabilization materials may also be useful on a localized basis for emission control. Ongoing studies will provide better information on the feasibility of the use of chemicals for dune or lake bed stabilization.

	163
	1656

Meteorological studies have provided information on wind patterns which may be useful in determining placement of sand fences. Wind tunnel and air quality monitoring studies were conducted. The results of these studies will provide further insight into the exact nature of particulate emissions at Owens Lake. The final report will be submitted on or before July 30, 1983.

FOLLOW-ON PROGRAM:

As a result of the preliminary data the Department of Water and Power, City of Los Angeles, in consultation with the China Lake Naval Weapons Center, Department of Defense and the State Lands Commission Staff have proposed a one-year continuation of the various studies at Owens Lake. The funding for the continuing studies would be shared equally between the three parties. The proposed program would include:

1. Establish a pilot project that is still experimental in nature but will provide immediate benefits in reducing some of the fugitive dust on the basis of the experimentation thus far completed.
2. On the basis of previous mapping efforts and in conjunction with the general knowledge of the lake bed thus far obtained, establish a four-square mile (or more) pilot project in the area known to be a prime source of dust emission. Cost \$5,000.
3. Review designs and spacing experiments and consult with Caltrans to confirm the most efficient pattern of sand fence construction. Cost \$5,000.
4. Based on an established price of \$3.50 per linear foot installed, construct an array of sand fence wind-rows perpendicular to recorded prevailing wind directions. Maintain a flexible area

164
1657

CALENDAR ITEM NO. 37, 2 (CONTD)

pilot study zone to accommodate the most economical pattern of fences when the final design is established as noted in No. 2 above. Cost \$175,000.

5. Continue planting experimentation with salt grasses on top of filled dunes without irrigation. Cost \$20,000.
6. Establish an experiment, when dunes are filled, to piggyback sand fences on top of entrapped dunes to create larger wind-row barriers. Cost \$15,000.
7. Final report covering all phases of the project including observations, verifications, and recommendations. Cost \$5,000.

Total Project Cost: \$225,000.

AB 884: N/A.

EXHIBIT: A. Location Map.

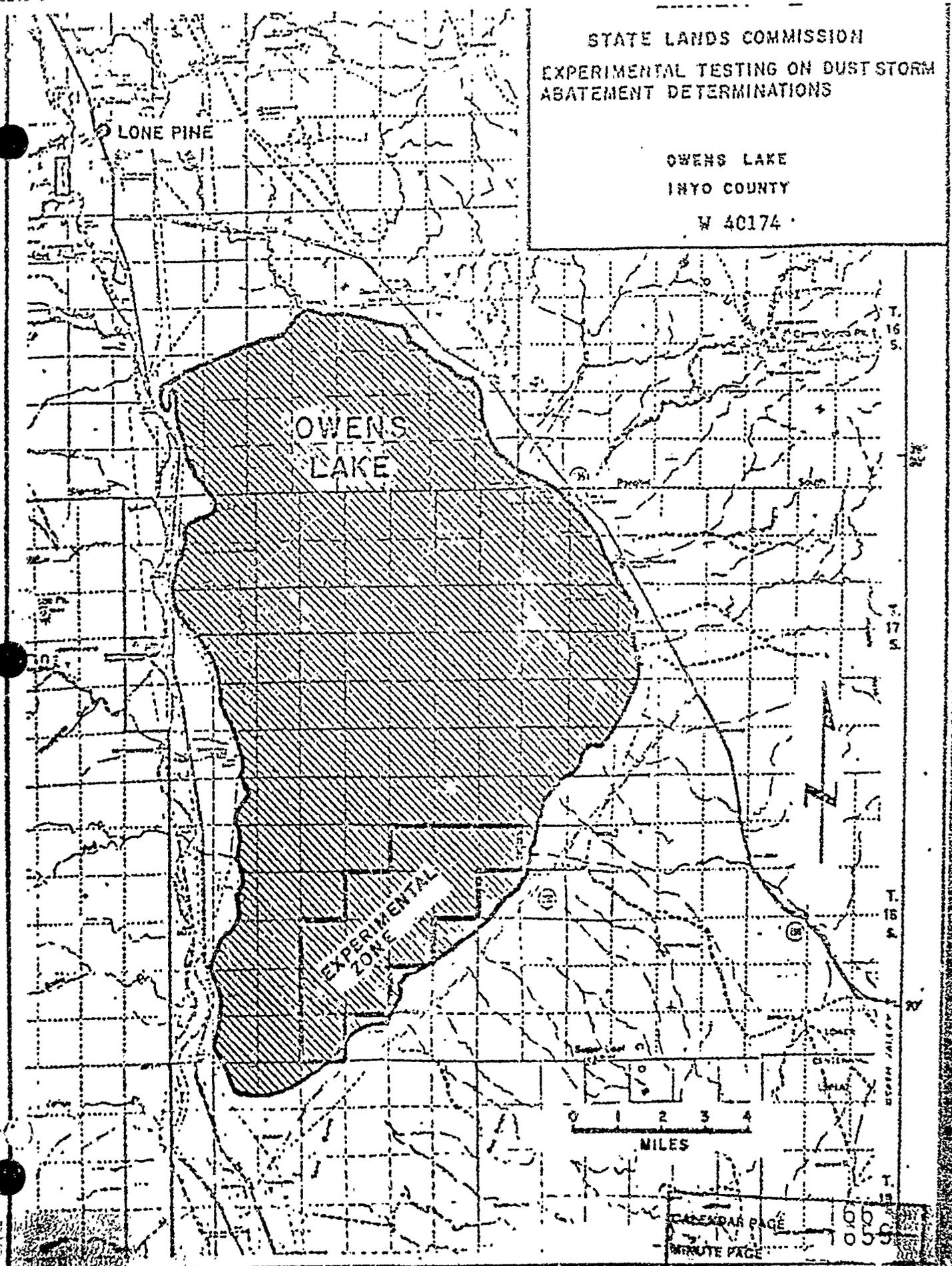
Revised 7/15 62

-4-

	165
MINOR RES	1658

STATE LANDS COMMISSION
EXPERIMENTAL TESTING ON DUST STORM
ABATEMENT DETERMINATIONS

OWENS LAKE
INYO COUNTY
W 40174



CALENDAR PAGE 90
MINUTE PAGE 059