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WASTE UTILIZATION IN WETLAND HABITAT DEVELOPMENT

ISSUE: Use of sewage sludge in the development of wetland habitat on marginal desert soils using effluent from a geothermal power plant will be investigated.

STATUS: The Environmental Research Center, Division of Earth Sciences is involved in a project with San Emidio Agrigate, Inc. to reuse biomass from the Reno Sparks Wastewater Treatment Facility on agricultural land in northern Washoe County to enhance the production of alfalfa, while decreasing the use of chemical fertilizers.

The development of wetlands for wildlife habitat is a major focus of several Federal agencies (EPA, BLM, USFW, BOM and BurRec). The operator of a 12 MW geothermal power plant under construction in the San Emidio Desert is an independent company owned by the principal of San Emidio Agrigate.

The experimental wetlands development project will require sludge to supply nutrients to the marginal desert soils and to promote microbial activity that will establish a suitable substrate for a variety of emergent aquatic vegetation. Since this is a an experimental program, studies to select the appropriate plant species will mandate continued long-term monitoring of the water quality and soil characteristics. The elevated salinity of the geothermal effluent will dictate the use of appropriate halophytic (salt tolerant) plants.

JUSTIFICATION: The Environmental Research Center believes that the development of wetlands using biomass generated by the Reno Sparks Wastewater Treatment Facility and geothermal waste water on marginal desert soils is feasible. The development of new wetlands using sludge and geothermal resources would be very beneficial to the state of Nevada by expanding wetland habitat and re-directing a waste stream to beneficial use. If this process is successful, many of the now barren desert valleys could become oases for migrating waterfowl and contribute to the recreational aspects of Nevada and other arid western states.

CALCULATIONS FOR EVAPORATIVE LOSS AND WATER BALANCE FOR A PROPOSED WETLAND IN THE SAN EMIDIO DESERT, NEVADA.

MONTH	EVAPORATIVE LOSS (E/T) (INCHES)	ACRE FEET /MONTH LOSS	FLOW TO MAINTAIN 240 ACRES (GPM)	FLUSHING FLOW @ 2000 GPM W/: 0% RECHARGE	50% RECHARGE
JANUARY	1.04	20.8	152	1848	924
FEBRUARY	1.82	36.4	294	1706	853
MARCH	3.86	77.2	563	1437	718
APRIL	7.99	159.8	1205	795	397
MAY	7.36	147.2	1074	926	463
JUNE	8.17	163.4	1232	768	384
JULY	9.32	186.4	1360	640	320
AUGUST	8.38	167.6	1223	777	388
SEPTEMBER	5.78	115.6	844	1156	578
OCTOBER	3.65	73.0	533	1467	734
NOVEMBER	1.71	34.2	258	1742	871
DECEMBER	0.92	18.4	134	1866	933
TOTAL	60	1200			
AVERAGE			739	1261	630
MAXIMUM			1360	1866	933
MINIMUM			134	640	320

93 - 80 AC. PONDS

→ THIS VALVE IS FROM EA for Sleeper Mine Wetlands Enhancement Project

DESERT VALLEY, NV

T. 41 N., R. 34 E.