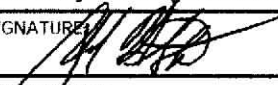


Complete in accordance with instructions on reverse and forward copy:				Form Approved: OMB No. 0648-0025 Expires 01/01/2028			
TO: National Oceanic and Atmospheric Administration Office of Oceanic and Atmospheric Research 1315 East-West Highway SSMC-3 Room 11554 Silver Spring, MD 20910				NOAA FORM 17-4 (4-81)		U.S. DEPARTMENT OF COMMERCE NAT'L OCEANIC AND ATMOSPHERIC ADM.	
1. PROJECT OR ACTIVITY DESIGNATION, IF ANY Kern River Cloud Seeding Program				2. DATES OF PROJECT			
3. PURPOSE OF PROJECT OR ACTIVITY Snowpack Augmentation				a. DATE FIRST ACTUAL WEATHER MODIFICATION ACTIVITY IS TO BE UNDERTAKEN		11/01/2022	
				b. EXPECTED TERMINATION DATE OF WEATHER MODIFICATION ACTIVITIES		04/30/2023	
4. (a) SPONSOR				4. (b) OPERATOR			
NAME David Hampton				NAME Richard Stone			
AFFILIATION North Kern Water Storage District		PHONE NUMBER (559) 393-2696		AFFILIATION RHS Consulting, LTD		PHONE NUMBER (775) 357-4659	
STREET ADDRESS 33380 Cawello Street				STREET ADDRESS PO Box 17096			
CITY Bakersfield		STATE CA	ZIP CODE 93380	CITY Reno		STATE NV	ZIP CODE 89511
5. TARGET AND CONTROL AREAS (See Instructions)							
TARGET AREA				CONTROL AREA			
LOCATION Kern River Basin		SIZE OF AREA 2000 SQ.MI		LOCATION Merced River, Tule River, Cottonwood Creek		SIZE OF AREA 750 SQ.MI.	
6. DESCRIPTION OF WEATHER MODIFICATION APPARATUS, MODIFICATION AGENTS AND THEIR DISPERSAL RATES, THE TECHNIQUES EMPLOYED, ETC. (See Instructions) This is a continuation of the Upper Kern River Basin Program, long-term project that began operations in 1955. During the 2023 winter season winter storm systems will be seeded using aircraft and ground-based generators. Silver iodide type and/or hygroscopic aerosols are generated using ejectable and end-burning pyrotechnics released 20-30 miles upwind of the target area. Seeding materials are typically released between 9,000' and 17,000' depending on temperatures and wind velocities. Release rates will vary between 800-3000 g/hr depending on cloud water contents, temperatures and distance to the target. Seeding is conducted near the top of the water saturated layer in supercooled liquid or mixed phase cloud conditions as predicted explicitly by a regional version of the WRF model. Supplemental ground-based seeding will be conducted as conditions warrant. Evaluations are conducted annually based on streamflow. Target streamflow is compared with multiple control areas that surround the target area to the north, west, and northeast using ratio statistics. The operational office is located at the Fresno Airport (KFAT).							
7. LOG BOOKS: Enter name, affiliation, address, and telephone number of responsible individual from whom log books or other records may be obtained.							
NAME Richard Stone				THIS REPORT IS REQUIRED BY PUBLIC LAW 92-205: 85 STAT 735; 15 U.S.C. 330b. KNOWING AND WILLFUL VIOLATION OF ANY RULE ADOPTED UNDER THE AUTHORITY OF SECTION 2 OF PUBLIC LAW 92-205 SHALL SUBJECT THE PERSON VIOLATING SUCH RULE TO A FINE OF NOT MORE THAN \$10,000, UPON CONVICTION THEREOF.			
AFFILIATION RHS Consulting, LTD		PHONE NUMBER (775) 357-4659					
STREET ADDRESS 2227 Bellanca St, Hangar A							
CITY Minden		STATE NV	ZIP CODE 89423				
8. SAFETY AND ENVIRONMENT							
<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Has an Environmental Impact Statement, Federal or State been filed? If yes, please furnish a copy as applicable.					
<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Have provisions been made to acquire the latest forecasts, advisories, warnings, etc. of the National Weather Service, Forest Service, or others when issued prior to and during operations? If yes, please specify on a separate sheet.					
<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	Have any safety procedures (operational constraints, provisions for suspension of operations, monitoring methods, etc.) and any environmental guidelines (related to the possible effects of the operations) been included in the operational plans? If yes, please furnish copies or a description of the specific procedures and guidelines.					
9. OPTIONAL REMARKS (See Instructions. Use Separate Sheet.)							
NAME Richard Stone				CERTIFICATION: I certify that the above statements are true, complete and correct to the best of my knowledge and belief.			
AFFILIATION RHS Consulting, LTD				SIGNATURE 			
STREET ADDRESS PO Box 17096				OFFICIAL TITLE Principal			
CITY Reno		STATE NV	ZIP CODE 89511	DATE 10/20/2022		PHONE NUMBER 357-4659 (775)	

Kern River Basin Supplement to Form 17-4

The following information is provided as requested by item 8 on Form 17-4, Safety and Environment

Environmental Impact Report

An Environmental Assessment was conducted by the sponsor and a Negative Declaration was filed with no dissenting opinions.

Suspension Criteria

The project may be temporarily suspended when one of the following conditions exists

EXCESSIVE SNOWPACK

These snowpack amounts serve as a guide regarding the potential suspension of the seeding program; they are not hard and fast criteria, but rather are designed to prompt close coordination with the water managers. These criteria are based on average target area precipitation amounts as follows:

1. 200% on January 1
2. 180% on February 1
3. 160% on March 1
4. 150% on April 1

Snow sensor observation are available on a daily basis at several locations. Interpolation of these percentages can be made for any given day in order to aid suspension decisions.

FLOODING

1. TARGET AREA – Utilizing quantitative precipitation forecasts (QPF), antecedent indices, and forecast freezing levels, decisions can be made of individual storm event runoff in the area draining into Isabella Lake. If the estimated storm runoff volume exceeds the available storage (i.e., spill condition), the project may be suspended.
2. RAIN ON SNOW – During periods above average snowpack exists and rising freezing levels and potential for rain on snow events where insufficient storage capacity is available the project may be temporarily suspended until the river flows recede and freezing levels fall below 4,500’.
3. Severe Weather – Severe weather is monitored on a storm-by-storm basis, and even hourly basis during rapidly changing weather conditions. The project may be suspended when a National Weather Service Flash Flood Warning is in effect over any part of the target area until the warning expires.

SPECIAL CIRCUMSTANCES

1. Official emergency response activity within the target area.
2. Other Special Circumstances or unusual circumstances, which may be deemed hazardous. Examples of special circumstances very strong winds, heavy snow at low elevations, and other unforeseen conditions that could be hazardous or perceived by the public as hazardous. Reservoir storage levels, soil moisture content, and amounts of precipitation in prior seasons are all factors to consider in assessing whether a temporary program suspension is appropriate

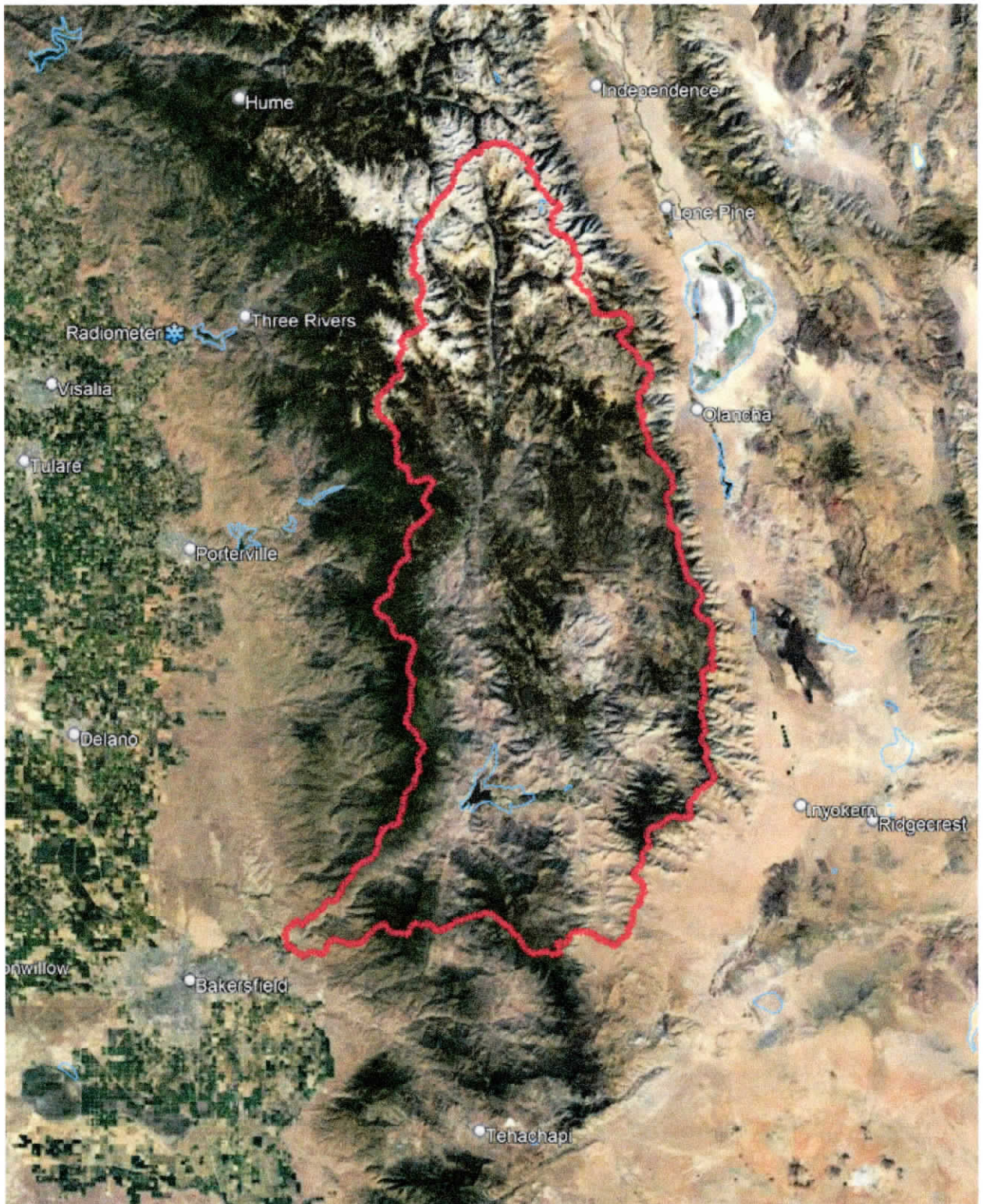


Figure 1. Kern River Basin Target Area