03-1177

Complete in accordance with instructions on reverse and forward copy:

TO: National Oceanic and Atmospheric Administration
Office of Oceanic and Atmospheric Research
1315 East-West Highway SSMC-3 Room 11554
Silver Spring, MD 20910

Form Approved: OMB No. 0648-0025 Expires 10/31/2001

NOAA FORM 17-4 (4-81) — U.S. DEPARTMENT OF COMMERCE
NAT'L OCEANIC AND ATMOSPHERIC ADM.

INITIAL REPORT ON WEATHER MODIFICATION ACTIVITIES (P.L. 205, 92ND. CONGRESS)

1. PROJECT OR ACTIVITY DESIGNATION, IF ANY
Cache County

3. PURPOSE OF PROJECT OR ACTIVITY
Augment Mountain Snowpack

2. DATES OF PROJECT

a. DATE FIRST ACTUAL WEATHER MODIFICATION ACTIVITY IS TO BE UNDERTAKEN: 12/01/2002

b. EXPECTED TERMINATION DATE OF WEATHER MODIFICATION ACTIVITIES: 03/31/2003

4. (a) SPONSOR

NAME			
Lynn Lemon			
AFFILIATION		PHONE NUMBER	
Cache County, Utah		(801) 257-5101	
STREET ADDRESS			
120 North 100 West			
CITY	STATE	ZIP CODE	
Logan	UT	84321	

4. (b) OPERATOR

NAME			
Don Griffith			
AFFILIATION		PHONE NUMBER	
North American Weather Consultants		(801) 942-9005	
STREET ADDRESS			
8160 South Highland Dr., Suite A-2			
CITY	STATE	ZIP CODE	
Sandy	UT	84093	

5. TARGET AND CONTROL AREAS (See Instructions)

TARGET AREA		CONTROL AREA	
LOCATION	SIZE OF AREA	LOCATION	SIZE OF AREA
see figure.	150 SQ.MI	see figure	450 SQ.MI.

6. DESCRIPTION OF WEATHER MODIFICATION APPARATUS, MODIFICATION AGENTS AND THEIR DISPERSAL RATES, THE TECHNIQUES EMPLOYED, ETC. *(See Instructions)*

Approximately 25 ground-based silver iodide generators will be used. Each generator will emit 8 grams per hour of silver iodide. Operational decisions will be made from NAWC offices in Sandy, Utah.

7. LOG BOOKS: *Enter name, affiliation, address, and telephone number of responsible individual from whom log books or other records may be obtained.*

NAME		
Don Griffith		
AFFILIATION		PHONE NUMBER
same		
STREET ADDRESS		
CITY	STATE	ZIP CODE

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.

8. SAFETY AND ENVIRONMENT

- [ ] YES [X] NO — Has an Environmental Impact Statement, Federal or State been filed? If yes, please furnish a copy as applicable.
- [X] YES [ ] 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.
- [X] YES [ ] 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	CERTIFICATION: I certify that the above statements are true, complete and correct to the best of my knowledge and belief.		
Don Griffith			
AFFILIATION	SIGNATURE		
North American Weather Consultants			
STREET ADDRESS	OFFICIAL TITLE		
8160 South Highland Dr., Suite A-2	President		
CITY / STATE / ZIP CODE	DATE	PHONE NUMBER	
Sandy / UT / 84093	12/03/2002	942-9005	

NOAA FORM 17-4A
(4-81)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Form Approved OMB No. 0648-0025
Expires 10/31/2001

INTERIM ACTIVITY REPORTS AND FINAL REPORT

This report is required by Public Law 92-205; 85 Stat. 735; 145 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.

NOAA FILE NUMBER
03-1177

[ ] INTERIM REPORT [X] FINAL REPORT

Complete in accordance with instructions on reverse and forward one copy to:
National Oceanic and Atmospheric Administration
Office of Oceanic and Atmospheric Research
1315 East-West Highway SSMC-3 Room 11554
Silver Spring, MD 20910

REPORTING PERIOD
FROM 12/01/2002 TO 03/31/2003

MONTH	(a) NUMBER OF MODIFICATION DAYS	(b) NUMBER OF MODIFICATION DAYS PER MAJOR PURPOSE				(c) HOURS OF APPARATUS OPERATION BY TYPE		(d) TYPE AND AMOUNT OF AGENT USED				
		INCREASE PRECIPITATION	ALLEVIATE		OTHER	AIRBORNE	GROUND	SILVER IODIDE	CARBON DIOXIDE	UREA	SODIUM CHLORIDE	OTHER
			HAIL	FOG								
JANUARY	2	2					176	1,408				
FEBRUARY	6	6					389	3,112				
MARCH	8	8					446	3,568				
APRIL												
MAY												
JUNE												
JULY												
AUGUST												
SEPTEMBER												
OCTOBER												
NOVEMBER												
DECEMBER	7	7					583	4,664				
TOTAL	23	23	0	0	0	0	1,594	12,752	0	0	0	0
TOTALS FOR FINAL REPORT	23	23	0	0	0	0	1,594	12,752	0	0	0	0

DATE ON WHICH FINAL WEATHER MODIFICATION ACTIVITY OCCURRED *(For Final Report only.)*

CERTIFICATION: I certify that all statements in this report on this weather modification project are complete and correct to the best of my knowledge and are made in good faith.

NAME OF REPORTING PERSON
Don Griffith

AFFILIATION North American Weather Consultants

SIGNATURE

STREET ADDRESS 8160 S. Highland Dr., Suite A-2

OFFICIAL TITLE
President

CITY Sandy | STATE UT | ZIP CODE 84093

DATE 04/17/2003

NOAA FORM 17-4A (4-81)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Form Approved OMB No. 0648-0025
Expires 10/31/2001

INTERIM ACTIVITY REPORTS AND FINAL REPORT

This report is required by Public Law 92-205; 85 Stat. 735; 145 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.

NOAA FILE NUMBER
03-1777 Cache County, Utah

[X] INTERIM REPORT [ ] FINAL REPORT

Complete in accordance with instructions on reverse and forward one copy to:
National Oceanic and Atmospheric Administration
Office of Oceanic and Atmospheric Research
1315 East-West Highway SSMC-3 Room 11554
Silver Spring, MD 20910

REPORTING PERIOD
FROM 12/01/2002 TO 12/31/2002

MONTH	(a) NUMBER OF MODIFICATION DAYS	(b) NUMBER OF MODIFICATION DAYS PER MAJOR PURPOSE				(c) HOURS OF APPARATUS OPERATION BY TYPE		(d) TYPE AND AMOUNT OF AGENT USED				
		INCREASE PRECIPITATION	ALLEVIATE		OTHER	AIRBORNE	GROUND	SILVER IODIDE	CARBON DIOXIDE	UREA	SODIUM CHLORIDE	OTHER
			HAIL	FOG								
JANUARY												
FEBRUARY												
MARCH												
APRIL												
MAY												
JUNE												
JULY												
AUGUST												
SEPTEMBER												
OCTOBER												
NOVEMBER												
DECEMBER	7	7					583	4,664				
TOTAL	7	7	0	0	0	0	583	4,664	0	0	0	0
TOTALS FOR FINAL REPORT												

DATE ON WHICH FINAL WEATHER MODIFICATION ACTIVITY OCCURRED *(For Final Report only.)*

CERTIFICATION: I certify that all statements in this report on this weather modification project are complete and correct to the best of my knowledge and are made in good faith.

NAME OF REPORTING PERSON
Don Griffith

AFFILIATION North American Weather Consultants

SIGNATURE

STREET ADDRESS 8160 S. Highland Dr., Suite A-2

OFFICIAL TITLE
President

CITY Sandy | STATE UT | ZIP CODE 84093

DATE 01/08/2003

North American Weather Consultants, Inc.

Air Quality, Applied Meteorology, Meteorological Research, Weather Modification

8160 South Highland Drive, Suite A-2
Sandy, Utah 84093
Telephone 801-942-9005
Facsimile 801-942-9007
E-Mail nawc@nawcinc.com

December 3, 2002

Karen King
NOAA/Office of Oceanic and Atmospheric Research
Routing Code R/WA
1315 East-West Highway, Room 11216
Silver Spring, MD 20910

Dear Ms. King:

Enclosed are the initial reports for four cloud seeding programs to be conducted this winter season, as follows:

1. Cache County, Utah 03-~~1177~~ 1177
2. Western Uintas, Utah 03-~~1178~~ 1178
3. Santa Barbara County, California 03-~~1179~~ 1179
4. High Uintas, Utah 03-~~1180~~ 1180

If you have any questions, please call me at 801-942-9005.

Sincerely,

Don A. Griffith
President

enclosures

North American Weather Consultants, Inc.

Air Quality, Applied Meteorology, Meteorological Research, Weather Modification

8160 South Highland Drive, Suite A-2
Sandy, Utah 84093
Telephone 801-942-9005
Facsimile 801-942-9007
E-Mail nawc@nawcinc.com

January 8, 2003

Karen King
NOAA/Office of Oceanic and Atmospheric Research
Routing Code R/WA
1315 East-West Highway, Room 11216
Silver Spring, MD 20910

Dear Ms. King:

Enclosed is the final report for the Alta/Snowbird cloud seeding program (NOAA file # 03-1157), as well as interim reports for the following six seeding programs:

1. Cache County, Utah	NOAA file # 03-~~1777~~	1177
2. Western Uintas, Utah	NOAA file # 03-~~1778~~	1178
3. High Uintas, Utah	NOAA file # 03-~~1780~~	1180
4. Central and Southern Utah	NOAA file # 03-1160	
5. Boise River, Idaho	NOAA file # 03-1161	
6. Santa Barbara, California	NOAA file # ~~03-1779~~	1179

I also have some comments regarding a couple of the cloud seeding programs. First, I want to clarify that the Boise River program is in Idaho, not in Utah as listed in your reply letter of October 23. Also, there may be some confusion as to the ground seeding operation times in the Santa Barbara report. This is because the Santa Barbara seeding program utilizes remotely-operated silver iodide flares, which the report form is not designed to accommodate. Each flare burns for about 5 minutes and releases approximately 150 grams of silver iodide. Flares are typically burned 15 minutes apart during storm periods, with each flare intended to cover a 15-minute time interval. For the Santa Barbara reports submitted so far, we have counted only the 5 minutes of actual burn time per flare, which is rounded off to the nearest whole number (hour) in the report form. If less than six flares are burned during a given month, for example, the number of hours will appear as 0. The amount shown for silver iodide release, however, will be representative of the number of flares fired plus any aircraft seeding. If there is a better way to represent the flare seeding time in the report forms, please let me know.

North American Weather Consultants, Inc.

Air Quality, Applied Meteorology, Meteorological Research, Weather Modification

8160 South Highland Drive, Suite A-2
Sandy, Utah 84093
Telephone 801-942-9005
Facsimile 801-942-9007
E-Mail nawc@nawcinc.com

April 17, 2003

Karen King
NOAA/Office of Oceanic and Atmospheric Research
Routing Code R/WA
1315 East-West Highway, Room 11216
Silver Spring, MD 20910

Dear Ms. King:

Enclosed are final reports for four cloud seeding programs:

1. Cache County, Utah	NOAA file # 03-1177
2. Western Uintas, Utah	NOAA file # 03-1178
3. Central and Southern Utah	NOAA file # 03-1160
4. Gunnison County, CO	NOAA file # 03-1187

If you have any questions, please call me at 801-942-9005.

Sincerely,

Don A. Griffith
President

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Silver Spring, MD 20910
OFFICE OF OCEANIC AND ATMOSPHERIC RESEARCH

December 11, 2002

Mr. Don A. Griffith
President
North American Weather Consultants, Inc.
8160 South Highland Drive, Suite A-2
Sandy, Utah 84093

Dear Mr. Griffith:

Thank you for your Initial Reports for your weather modification projects. The projects were assigned the following NOAA file numbers:

PROJECT NAME:	NOAA FILE NUMBER:
Cache County, Utah	03-1177
Western Uintas, Utah	03-1178
Santa Barbara County, California	03-1179
High Uintas, Utah	03-1180

Enclosed are updated forms 17-4 and 17-4A. Please use them for all future reports.

As a reminder, please submit a Final Report within 45 days after the project has terminated. This is mandated under Public Law 92-205.

Sincerely,

Karen King

Ms. Karen King, Manager
Weather Modification Activities
Reporting Program

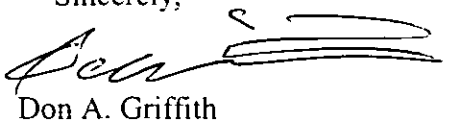
Enclosures

Mr. Griffith,
Please discard previous letter dated 12/11/02. There was a typo under the NOAA File Numbers. Thank you.
Karen King

Printed on recycled paper

If you have any questions, please call me at 801-942-9005.

Sincerely,



Don A. Griffith
President

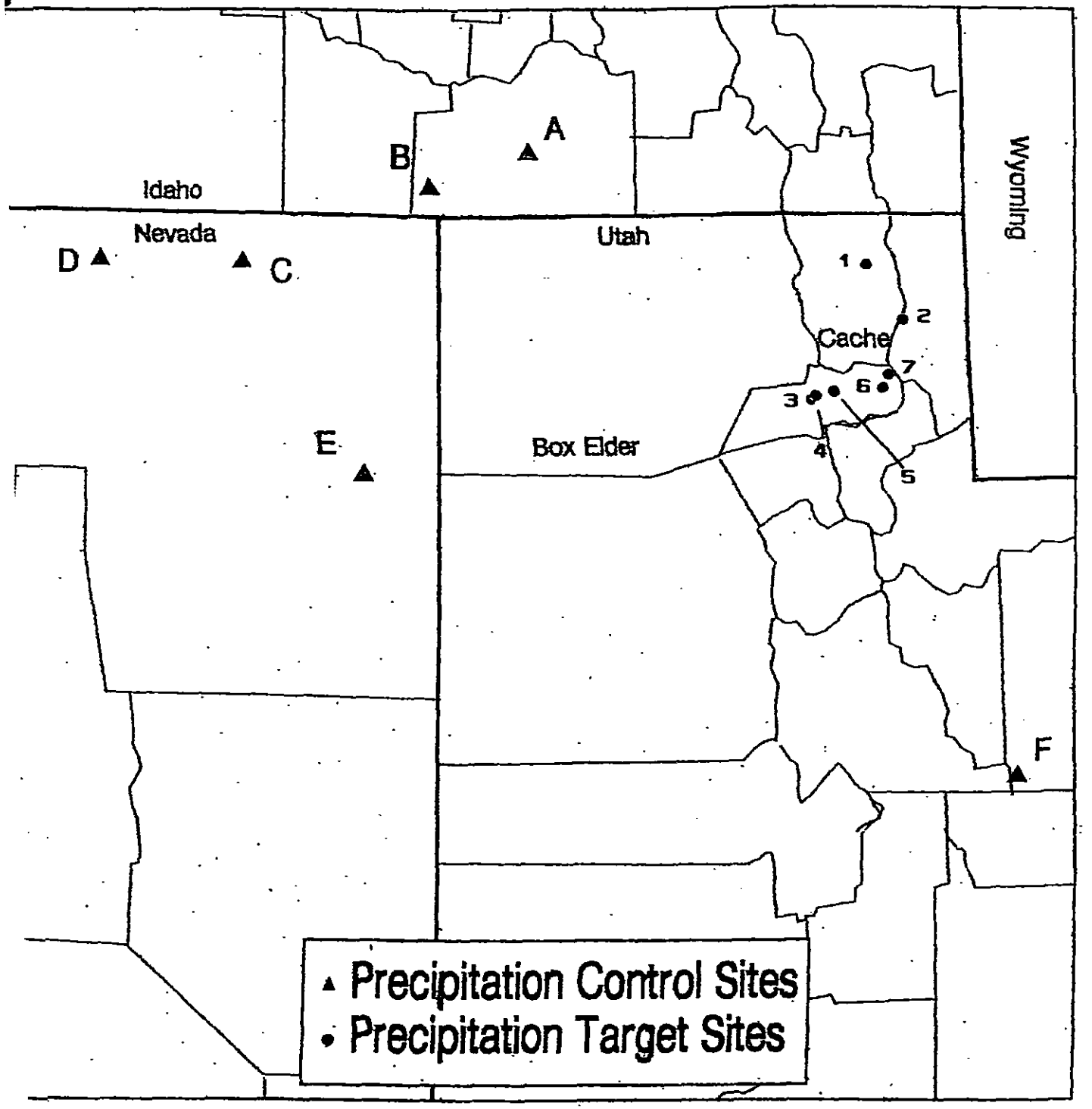


Figure 4.1 · Precipitation Gauge Sites Used in Evaluation.

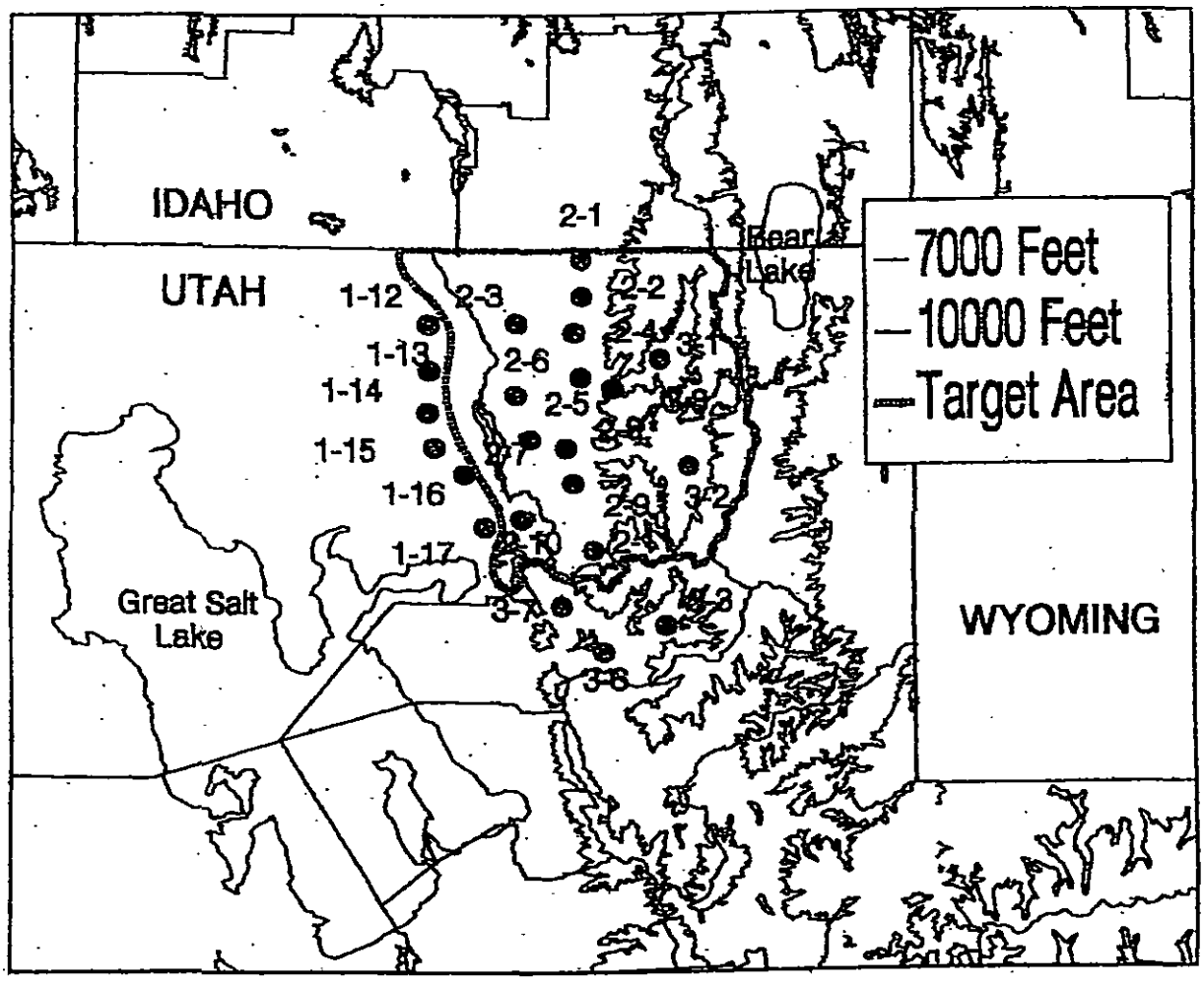


Figure 2.1 **CNG Sites for the Northern Utah Weather Modification Program,**

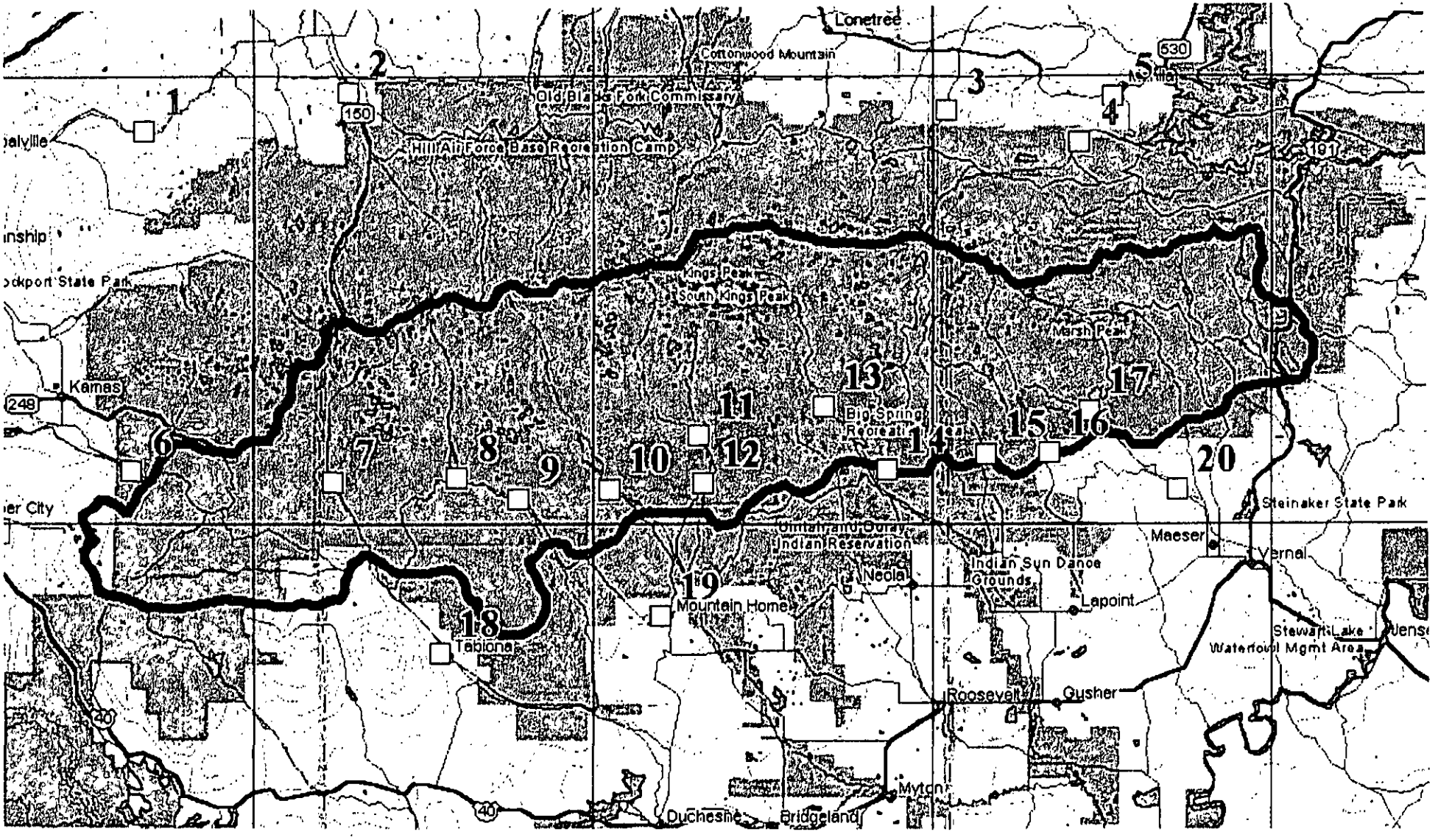


Figure 6 Proposed target area boundary and potential generator locations