

APPENDIX A

NASA BPO APPLICATION AND CHECKLISTS



FY2010 CONVENTIONAL BALLOON FLIGHT SUPPORT APPLICATION

Payload Acronym: _____

Payload Name: _____

The Conventional Balloon Flight Support Application identifies science group requirements for NASA/CSBF conventional balloon flight support. The Application is applicable for one year only. That is the forthcoming Government Fiscal Year, which runs from October 2009 to September 2010. Please complete a separate application in as much detail as possible for each individual balloon flight planned and return to:

E-MAIL TO: [REDACTED]
 CC TO: [REDACTED]

Completion instructions and other information regarding this application are contained in support documents available on the CSBF Web site at www.csbf.nasa.gov/convdocs.html.

LONG-DURATION BALLOONING (LDB) FLIGHT SUPPORT

An engineering or science validation flight, normally from the continental United States, is considered a standard conventional balloon flight and requires filing a conventional balloon flight support application. For LDB flight support, contact CSBF (see **CSBF CONTACTS**) or download an LDB Flight Application form from <http://www.csbf.nasa.gov/ldbdocs.html>.

PART I SCIENCE

DISCIPLINE CODE		
Highlight or underline the standard discipline code applicable to the flight covered by this application.	A Infrared/Submillimeter Astrophysics C Particle Astrophysics E Geospace Sciences H Gamma Ray/X-Ray Astrophysics	P Special Projects S Solar and Heliospheric Physics U Upper Atmosphere Research T Test Flight

LDB TEST FLIGHTS			
Please indicate if this is an engineering or science validation flight for a future LDB flight.	Yes:		No:

SCIENCE DESCRIPTION	
Please describe the scientific experiment and its objectives. This description will be used to brief senior NASA officials and in press releases by the NASA Public Affairs Office. It may also be used by CSBF in our outreach and public relations programs. If possible, please limit to around 150 words. Use layman's terms to the maximum extent possible.	
Description	
Objectives	



PART II CONTACTS

PRIMARY CONTACT	
Principal Scientific Investigator Name	
Organization Name	
Mailing Address	
Telephone Number	
Fax Number	
E-Mail Address	
Project Web Site	

SECONDARY CONTACT	
Project Officer or Delegate familiar with engineering aspects of experiment	
Organization name	
Mailing address	
Telephone number	
Fax number	
E-mail address	

FUNDING			
NASA SPONSORED		NON-NASA SPONSORED	
NASA Program		Sponsoring Agency	
Sponsoring Directorate		Program	
Science Discipline Chief		Program Executive	



PART III FLIGHT PROFILE

LAUNCH SITE	ESTIMATED SITE ARRIVAL DATE	REQUESTED FLIGHT DATE

FLOAT REQUIREMENTS		
CRITERIA	MINIMUM	DESIRED
Float Altitude		
Time at Float Altitude		
Altitude Stability		
Launch Time		

OTHER THAN NORMAL FLIGHT PROFILE REQUIREMENTS			
Ascent/descent rates		Valving	
Altitude variations		Other	
Payload reel down		Other	

PART IV MINIMUM SCIENCE SUCCESS CRITERIA

SCIENCE OBJECTIVES	DESCRIPTION	MINIMUM	DESIRED
Briefly state the minimum scientific objective that must be met to achieve a mission success.			
Provide a summary of the minimum and desired performance for the experiment (detectors, pointing systems, etc.).			

BALLOON AND SUPPORT SYSTEMS	DESCRIPTION	MINIMUM	DESIRED
Provide full details of any pertinent balloon and/or CSBF support systems (telemetry, commanding, recovery, etc.) performance requirements with minimum and desired criteria.			

METEOROLOGICAL SUPPORT	DESCRIPTION	MINIMUM	DESIRED
Provide details on any other data source or support element separate from the balloon flight but necessary to achieve mission success (instrumented sounding balloons, instrumented aircraft, satellite overpass, independent ground station measurements, National Weather Service radiosonde data, or CSBF radar tracking data).			



PART V PAYLOAD/GONDOLA AND BALLOON DATA

The gondola design documentation available on the CSBF Web site at <http://www.csbf.nasa.gov/gondoladocs.html> defines CSBF certification policies for gondolas and pressure vessels, along with GSFC fastener integrity requirements. Please verify that you have the appropriate documentation and procedures in place to comply with these policies.

PAYLOAD/GONDOLA						
Dimensions of scientific payload (attach drawings or photos if available)	L:		W:		H:	
Estimated weight of scientific payload (only experimenter-supplied equipment including experimenter-supplied batteries)						
Has CSBF flown this payload before? If yes, indicate where, when, and the flight number.	Yes:		No:			
	Date		Flight #		Site	
Have any structural changes been made that affect your previous mechanical and/or pressure vessel certifications?	Yes:		No:			
	If Yes, explain:					
Are there any restrictions on the proximity of the scientific payload to other equipment, electronics, ballast, or to the balloon?						

SPECIAL BALLOON REQUIREMENTS		
X	REQUIREMENT	ADDITIONAL INFORMATION
	No radar-reflective tape	
	Attached ducts	
	Minimum poly powder lubrication	
	Other	

PART VI GROUND SUPPORT

SERVICES	
Work area and shop support requirements	
CSBF environmental test chamber (Bemco) requirements	

NETWORK AND IT REQUIREMENTS	
Number of IP addresses:	
Static IP addresses	
Dynamic IP addresses	
Operating systems being used	



PART VII EXPENDABLE SUPPORT REQUIREMENTS

BATTERIES

Normally CSBF supplies batteries for the science instrument as well as for CSBF equipment. However, only lithium battery packs and cells used by CSBF are available. Indicate below if you want CSBF to purchase batteries for your scientific payload.

YES NO

NOTE

Lithium battery orders require long lead times and need to be identified as early as possible before the flight. Please provide an estimate even if you are unsure.

BATTERY	CELLS/PACK	LOADED VOLTAGE	AMPERE HOUR*	QUANTITY DESIRED
B7901-10	10	26	30	
B7901-11	11	29	30	
B7901-12	12	32	30	
B9660	10	26	7	
B9525	5	14	7	
B9808	5	14	1	
G20-12	1	2.6	7	
G62-12	1	2.6	30	

* De-rate ampere hour ratings for temperatures below -20 degrees Celsius

GAS / CRYOGEN ESTIMATE

Estimate the type, purity, container size, PSI, and quantity of compressed gas, cryogenes, and specialty gases you expect CSBF will need to order to support your program.

GAS/CRYOGEN	PURITY	CONTAINER SIZE	PSI	QUANTITY

Gas/Cryogen Orders

Gas/cryogen estimates you provide on this application are used ONLY for CSBF forecasting and planning purposes; no gas/cryogen order for your program will be generated based on this application form.

To place gas/cryogen orders:

1. Download the gas/cryogen order form from the CSBF Web site at <http://www.csbf.nasa.gov/bids.html>
2. Complete the form.
3. E-mail or fax the form to CSBF.

At least two to three weeks before your projected arrival at the launch site, please submit your program's gas/cryogen order to CSBF using one of the following methods:

Fax: 866-441-7849 or 903-723-8054, ATTN: Cryogenes

E-mail: [REDACTED]



BALLAST					
CSBF normally provides steel shot as ballast. Non-magnetic ballast (glass shot or sand) may be used if justified by science requirements. Please indicate your requirement.	Steel:		Glass:		Sand:

OTHER EXPENDABLES	
List any expendables and services other than those directly required by CSBF for its flight support.	

PART VIII SAFETY

The *Conventional Balloon Flight Application Users Handbook* (<http://www.csbf.nasa.gov/convdocs.html>) delineates CSBF policies regarding hazardous materials, systems, and equipment. Please verify that the appropriate documentation and procedures are in place to comply with these policies. You will be given a Verification of Safety Compliance form after your arrival at the launch site and be required to complete it before the payload is ready for flight.

You may be required to generate a special ground and/or flight safety plan to address hazardous conditions. If hazardous materials are used, you must furnish Material Safety Data Sheets (MSDS). Please forward any applicable safety documentation or plans that have been generated as part of your own institutional safety program as part of your project.

Each scientist is required to furnish CSBF with a Sealed Source Device Registry (SSDR) Safety Evaluation Sheet to be on file at CSBF before the source can be shipped to CSBF property or remote launch site. Refer to the *Conventional Balloon Flight Application Procedures Users Handbook* for instructions regarding radioactive sources.

HAZARDOUS MATERIALS LIST																																																				
The table at right lists hazards typically associated with balloon payloads. Please confirm those that are applicable to this project. Please indicate any additional hazardous materials, systems, or equipment not falling into these categories (i.e. toxic gases, super-conducting magnets).	<table border="1"> <thead> <tr> <th rowspan="2">HAZARD TYPE</th> <th rowspan="2">YES</th> <th colspan="3">WHERE USED</th> </tr> <tr> <th>Ground</th> <th>In Flight</th> <th>Both</th> </tr> </thead> <tbody> <tr> <td>Radioactive Materials</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lasers</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Cryogenic Materials</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pressure Vessels</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>High Voltage</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pyrotechnics</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Magnets</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	HAZARD TYPE	YES	WHERE USED			Ground	In Flight	Both	Radioactive Materials					Lasers					Cryogenic Materials					Pressure Vessels					High Voltage					Pyrotechnics					Magnets					Other							
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Magnets																																																				
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RADIOACTIVE MATERIALS									
List radioactive sources to be used, along with maximum activity/wattage. Identify materials in Ci, μ Ci, and/or nCi.	<table border="1"> <thead> <tr> <th>SOURCE TYPE</th> <th>ACTIVITY / WATTAGE</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	SOURCE TYPE	ACTIVITY / WATTAGE						
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PART IX ELECTRONICS

CSBF TELECOMMAND SYSTEM			
The CSBF command system allows for a 16-bit parallel command word and a maximum of 77 discrete commands. Please reconfirm the following information from the Flight Support Abstract. See the <i>CIP Interface User handbook</i> at http://www.csbf.nasa.gov/convdocs.html for instructions for command integration.			
Do you plan to use your own command encoder and transmitter to meet science payload requirements?	If yes, please fill out:		
	FREQUENCY	POWER	AUTH. NO.
			AREA OF AUTH.

AIRBORNE TELEMETRY			
Indicate the nature of telemetry signals from the scientific instrumentation.	SIGNAL	FREQUENCY (BPS)	CODING (NRZ, BIO, ETC.)
CSBF normally furnishes telemetry transmitters. Do you plan to use your own telemetry transmitter?	If yes, please fill out:		
	FREQUENCY	AUTH. NO.	AREA OF AUTH.
Describe special or unusual electronic requirements, indicate constituent signals comprising science furnished composite video, and indicate any TV video requiring CSBF-supplied transmitters.			

GROUND TELEMETRY	
List any special requirements for ground station equipment, test equipment, special or unusual electronic requirements, constituent signals comprising science-furnished composite video, and TV video requiring CSBF-supplied transmitters.	
Downrange ground station support requirements?	

PART X FUTURE REQUIREMENTS

In an attempt to meet the future needs of the scientific community, it is critical that you provide detailed information on any balloon flights planned for the next five years to assist NASA/CSBF in developing flight support services. Considerable advanced planning is required for complicated missions, e.g., Australia, Canada, and Antarctica. Even if you are only thinking about proposing, identifying potential requirements facilitates the planning process. Include the anticipated number of flights through calendar year 2015 and the location and seasonal requirements of each. Also, note any special support, services, or capability requirements not presently offered by the CSBF.

PAYLOAD NAME	FLIGHT DATE	FLIGHT LOCATION	SPECIAL SUPPORT	ADDITIONAL SERVICES



PAYLOAD NAME	FLIGHT DATE	FLIGHT LOCATION	SPECIAL SUPPORT	ADDITIONAL SERVICES



PART X – AGREEMENT

I have read and agree with all requirements and conditions set forth in the Conventional Balloon Flight Support Application and related materials available from the CSBF website.

Important

Waiver of Claims Form: **All non-NASA institutions and agencies** are to complete and return the attached form to CSBF.

Hold Harmless Form: **All institutions and agencies using radioactive materials** are to complete and return the attached form to CSBF.

Signed forms can be mailed to [REDACTED] at:
 Columbia Scientific Balloon Facility
 P.O. Box 319
 Palestine, TX 75802-0319

Name: _____

Organization: _____

Signature: _____

Date: _____

CSBF CONTACTS			
P.O. Box 319	[REDACTED]	[REDACTED]	Gas/Cryogen Orders
Palestine, TX 75802-0319	Operations Manager	Administrative Assistant	Purchasing
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]



WAIVER OF CLAIMS AGAINST NEW MEXICO STATE UNIVERSITY THE PHYSICAL SCIENCE LABORATORY

With regard to Balloon Flight Services provided by New Mexico State University/Physical Science Laboratory, the operators of the Columbia Scientific Balloon Facility (CSBF), under contract with the National Aeronautics and Space Administration (NASA), the requiring institution identified below, agrees not to assert any claim or claims against the New Mexico State University/Physical Science Laboratory, the National Aeronautics and Space Administration, or their employees or agents, for loss or damage to any instrument or scientific equipment (including loss of or damage to the balloon) provided by the requiring institution and carried on a Balloon Flight provided by the Columbia Scientific Balloon Facility, or consequential damages resulting from such loss or damages, except with respect to any such loss or damages resulting solely from the fault or negligence of the New Mexico State University/Physical Science Laboratory.

This waiver shall be in effect from _____ to _____ inclusive.

INSTITUTION:

(Name of University or Organization)

(Department or Section)

OFFICIAL'S NAME:

(Type or print name of the Official with authority to legally bind the Institution)

OFFICIAL'S SIGNATURE :

(Signature of the Official with authority to legally bind the Institution)

TITLE:

(Title of above Official)

DATE:

(Date of Official's Signature)

PI'S NAME:

(Type or print Principal Investigator's name)

PI'S SIGNATURE:

(Principal Investigator's signature)

DATE:

(Date of Principal Investigator's Signature)



HOLD HARMLESS AND INDEMNIFICATION

The (Name of Institution, e.g. NASA Center, NOAA, NRL, University Name) agrees to Indemnify and Hold Harmless the Physical Science Laboratory of New Mexico State University (PSL/NMSU), its Regents, Officers, and employees from any liability whatsoever (including legal costs) associated with damages or death resulting from a radioactive substance provided by (Name of Scientific User at CSBF) and carried on a balloon flight launched, flown, and recovered by PSL/NMSU Columbia Scientific Balloon Facility (CSBF) for the (Name of Subgroup, e.g. Department, Section at Institution) whose address is (Street, City, State, Zip).

Name:

(Official with Authority to Legally Bind Institution)

Title:

(Official's Title at Institution)

Signature:

Date:

(Date Document Signed by Official)

Approved by _____ date 5/24/2006

NOTICE: This Checklist is used to review the data received from the customer during a Flight Review checkout: **DOCUMENT FOLLOWS:**

Balloon Flight Requirements Date ____ / ____ / ____

Organization: _____
Project Scientist _____

Balloon Assignment:

(1) Model (i.e., W29.47-2-01) _____ CSBF # _____
Recommended Payload: Max _____ Min _____
(2) Model (i.e., W29.47-2-01) _____ CSBF # _____
Recommended Payload: Max _____ Min _____

Flight Requirements:

Number of Flights: _____ Readiness Date: _____
Launch Time (Hr): _____ Launch Time (Date): _____
Desired Altitude (K Ft): _____ Minimum Altitude (K Ft): _____
Desired Float (Hrs): _____ Minimum Float (Hrs): _____
Flight Profile: *(If other than as high as possible for as long as possible)*

(Issue Pre-Flight Minimum Success Criteria Form to P.I.)

Flight Operations Briefing:

Estimated Weight (lbs) of Scientific Payload _____
Estimated Weight (lbs) of NSBF Equipment _____
Ballast (lbs): Steel _____ Sand _____ Other _____

TOTAL ESTIMATED PAYLOAD WEIGHT (LBS) _____

Estimated Float Altitude: w/Ballast _____ (KFt); w/o Ballast _____ (KFt)
Chute Diameter: _____ (Ft.); Release: _____; Suspension Ladder (Ft) _____
Special flight train length, components, etc... _____
Launch Vehicle: Tiny Tim _____ KATO _____ MLV _____
BOSS _____ HERCULES _____ Recovery Truck _____ Other _____
Flight Line Checkout (Hrs/Mins) _____ Estimated Show Time _____

Recovery Requirements:

Special recovery requirements/equipment: _____

(Issue recovery form to Principal Investigator)

Hazardous Materials and Conditions: *(check appropriately)*

Radioactive Sources	Ground Support	Flight	Recovery
Laser Hazards	Ground Support	Flight	Recovery
Chemical/Cryo/Gas	Ground Support	Flight	Recovery
Pressure Vessel	Ground Support	Flight	Recovery
High Voltage	Ground Support	Flight	Recovery
Pyrotechnics	Ground Support	Flight	Recovery
Magnets	Ground Support	Flight	Recovery

(If required, Issue Ground Safety Plan and Pressure Vessel Certification)

Science Emergency Information – Contact Name @ Location @ Phone #

(1) _____ @ _____ @ _____
 (2) _____ @ _____ @ _____

Aviation Support Briefing:

Passengers: Downrange Station _____ Recovery _____
 (C90 Tail # 240RE (6S) 441 Tail # N6860C (7S)
 CIP Check - Date _____ Time _____

SAR Considerations and Limitations:

Restrictions: _____

(Palestine – minimum impact 150, 250, 350 miles west, footprint dependent)
(Ft. Sumner – impact < 550 miles west; < 450 miles east & outside corridor.
Corridor East of Ft. Sumner – 069 deg to 112 deg and 265—450 miles.)

Meteorological Briefing:

Average Float Wind : _____ Sunrise _____ Sunset _____
 Post Flight Met Date (Y/N) _____
 Supplemental WX Data/Support: _____

Non-Standard Elect/Mech. Configuration/Squib Applications:

NSBF: _____
 Science: _____

Helium Valves: None _____ One _____ Two _____ Three _____

Data Rates:

Rate : _____ Code: _____

VCO Requirements:

VCO Channels(s) 1 CMD. Verify, 3 MKS, 5 _____, 7 _____

8 _____, 9 _____ 10 Mini Encoder, 11 GPS # 1, 12 GPS # 2,

B _____, E _____ HH _____,

Power Requirements:

CIP : _____ Science Transmitters: _____ Other: _____

Special Electronics Considerations:

Ground Station Requirements:

Launch Site

Down Range

Bit Syncs _____

Decom's _____

Project Scientist: _____

CSBF Representation: _____

Approved by: _____



Date: 1 October 2007

NOTICE: DOCUMENT FOLLOWS.

**OPERATIONS PREFLIGHT
READINESS REVIEW CHECKLIST**

Principal Investigator / Organization: _____

Proposed Flight Date / Campaign: _____

A. SCIENTIFIC REQUIREMENTS

- Down Range Support / Special Recording _____
- Minimum Success Criteria _____
- Recovery Instructions _____
- Science Command Sheet _____
- Ground Safety Plan _____

B. FLIGHT OPERATIONS

- SAR / Risk Analysis Review _____
- Launch Equipment Configuration and Certification (LECC) _____
- Pressure Vessel Certification _____
- Gondola Mechanical Certification _____
- Vehicle Pin and Chute Weight _____
- Max/Min Weight on Balloon _____

C. FLIGHT ELECTRONICS

- Command Sheets _____
- Science Off Command(s) _____
- Electronic Certification _____

D. MISCELLANEOUS

- Video Personnel _____
- Down Range Crew _____
- Aircraft Crew _____
- Recovery Crew _____
- Flight Line Crew _____
- Tower Crew _____
- Paperwork Distribution _____

CSBF REPRESENTATIVE _____

DATE _____

Approved by:



Date: 13 April 2007

NOTICE: This Flight Plan data is only valid for a launch within 72 hours of the Approved date and time or Renewed date and time. DOCUMENT FOLLOWS.

FLIGHT PLAN

PRINCIPAL INVESTIGATOR / ORGANIZATION _____

1 SCIENTIFIC REQUIREMENTS

LAUNCH WINDOW _____ DESIRED LAUNCH TIME _____

DESIRED FLOAT DURATION (HR) _____ ALTITUDE (KFT) _____

FLIGHT PROFILE _____

MINIMUM FLOAT DURATION (HR) _____ ALTITUDE (KFT) _____

FLIGHT PROFILE (IF DIFFERENT FROM ABOVE) _____

DOWN-RANGE SUPPORT AND/OR SPECIAL REPORTING _____

2 REQUIREMENTS FOR ALTITUDE AND TIME CONTROL

BALLOON _____

PAYLOAD WEIGHT With Ballast (lb) _____ Without Ballast (lb) _____

BALLAST _____ (lb) of _____ with Flow Rate of _____ (lb/min)

ALTITUDE With Ballast (Kft) _____ Without Ballast (Kft) _____

Ballast for Sunset (1st) _____ lb (2nd) _____ lb Ballast for Drive-up _____ lb

Ballasting Instructions _____

VALVE(S) _____ Type _____ Valving Instructions _____

ANEROID(S) Set Altitude to Arm/Fire _____ / _____ / _____

3 SUPPORT PERSONNEL

DOWN RANGE CSBF _____

Science _____

AIRCRAFT Pilot _____ Sr. Observer _____ E. Tech _____

PASSENGER(S) _____

RECOVERY CSBF _____

Science _____

RECOVERY INSTRUCTIONS ATTACHED Yes _____ No _____

SPECIAL EQUIPMENT _____

HAZARDOUS OR RADIOACTIVE MATERIALS _____

OTHER _____

4 FLIGHT LINE

LAUNCH DIRECTOR _____ ELECTRONICS SUPERVISOR _____

5 TOWER

FLIGHT DIRECTOR _____ ELECTRONICS SUPERVISOR _____

PREPARED BY _____ DATE _____ TIME _____

APPROVED BY _____ DATE _____ TIME _____

RENEWED BY _____ DATE _____ TIME _____

NOTES:

- 1) All changes on the Balloon Flight Support Application must be approved by the Head of CSBF Operations.
- 2) **ANY** changes on this Flight Plan **MUST** be approved by the Head of CSBF Operations or the appropriate Campaign Manager.
- 3) The Flight Plan is only valid for a launch within 72 hours of the Approved date and time or the Renewed date and time.

Approved by _____ Date _____

NOTICE: Record the recovery information on this form. This report is to be **presented to the launch or flight director upon arrival at NSBF** or remote launch site. Please **insure that this form is placed in the flight bag** (blue bag) for insertion in flight folder. This document cancels and replaces Operations Policy No. 04-74-02, Enclosure #7: **DOCUMENT FOLLOWS:**

RECOVERY REPORT

FLIGHT NUMBER _____ **LAUNCH DATE:** _____
SCIENTIFIC GROUP _____

I. PERSONNEL:

A. AIRCRAFT 1. _____ 2. _____
B. RECOVERY 1. _____ 2. _____
C. SCIENTIST 1. _____ 2. _____
D. PROBLEMS, INJURY, ETC. _____

II. RECOVERY VEHICLE:

A. TRUCK TAG #: _____ B. TRAILER _____
C. TIME OUT _____ D. MILEAGE OUT _____
E. TIME IN _____ F. MILEAGE IN _____
G. GPS USAGE _____ H. CELLULAR PHONE _____
I. PROBLEMS: _____

III. SCIENTIFIC PACKAGE:

A. IMPACT TIME: _____
B. LOCATION (FROM NEAREST TOWN) _____
C. PROXIMITY TO INHABITED BUILDING _____
D. CONDITION _____
E. RADIOACTIVE SOURCE? _____
F. RECOVERY COMMENTS, COST, DAMAGE, ETC. _____

IV. TRACKING AIRCRAFT: (CIRCLE ONE)

A. PAYLOAD RECOVERY ASSISTANCE: YES / NO
B. BALLOON RECOVERY ASSISTANCE: YES / NO

V. RIGGING:

- A. PHYSICAL CONDITION OF FLIGHT EQUIPMENT:
PARACHUTE _____ TERMINATE _____ CUTAWAY _____
SUSP. CABLES _____ HOPPER (S) _____ UTP _____

- B. ACTIVATION STATUS OF TERMINATION HARDWARE
TERMINATE FITTING: HOLEX _____ EXP. BOLT _____
CHUTE CUTAWAY: HOLEX _____ PINS PULLED _____

- C. OTHER _____

VI. BALLOONS:

- A. LOCATION (FROM NEAREST TOWN) _____
- B. PROXIMITY TO INHABITED BUILDING _____
- C. BALLOON DISPOSAL _____
- D. VALVES RECOVERED _____ CONDITION _____
- E. TERMINATE COMPONENTS RECOVERED _____
- F. BALLOON IMPACT DIMENSIONS: _____
- G. RECOVERY COMMENTS, COST, DAMAGE, ETC.: _____

VII. SUMMARY OF REPORT:

REPORT PREPARED BY:

APPENDIX B

NASA BPO ENVIRONMENTAL CHECKLIST

NASA SCIENTIFIC BALLOON PROGRAM OFFICE ENVIRONMENTAL CHECKLIST

PURPOSE OF THE BPO ENVIRONMENTAL CHECKLIST

The NASA Balloon Program Office (BPO) completed a Programmatic Environmental Assessment (PEA) to evaluate the environmental impacts of its ongoing and proposed scientific balloon operations conducted from the Columbia Scientific Balloon Facilities (CSBF) located in Fort Sumner, New Mexico and Palestine, Texas.

The scope of the Scientific Balloon Program PEA includes scientific balloon system operations (preparation, launch, flight, and recovery) launched from either CSBF Fort Sumner or CSBF Palestine and flight and recovery operations occurring within the CSBF operations area spanning portions of six states—primarily Texas, New Mexico, Arizona, but also Oklahoma, Kansas, and Colorado.

The scope of the Scientific Balloon Program PEA does not include infrastructure construction activities or BPO use of unproven technology or experimental projects with potential for substantial impacts on the environment.

This Environmental Checklist will be used by the NASA BPO prior to each balloon launch campaign to help determine whether the proposed balloon missions fall within the operations covered by the Scientific Balloon Program PEA, or whether separate NEPA analysis may be required.

**NASA BALLOON PROGRAM OFFICE
ENVIRONMENTAL CHECKLIST**

PROPOSED ACTION/MISSION: _____

DATE OF PROPOSED ACTION/MISSION: _____

SECTION 1 – DOES THE PROPOSED BPO ACTIVITY MEET THE PARAMETERS SPECIFIED IN THE NASA SCIENTIFIC BALLOON PROGRAM PEA?

1. Balloon Operations Flight Parameters -- answer the following questions. If the answers are “**yes**,” the proposed flight parameters are consistent with those specified in the NASA Scientific Balloon Program PEA. If the answers are “**no**,” additional NEPA analysis may be necessary – proceed to Sections 2, 3, and 4.

- _____ a. Will anticipated flight and recovery operations occur within the six-state CSBF Operations Area (AZ, CO, KS, NM, OK, TX)?
- _____ b. Including this balloon launch, would scientific balloon launches remain with the annual proposed number of 25 launches for CSBF Fort Sumner and 6 launches for CSBF Palestine?

2. Balloon Operations Payload Parameters – if the answer to the question below is “**yes**,” the proposed flight parameters are consistent with those specified in the NASA Scientific Balloon Program PEA.

- _____ c. Does payload meet the requirements in the following table?

Component	Envelope	Additional Documentation Requirement for REC
Radio Frequency	Electromagnetic fields must be within ANSI-recognized acceptable levels as stated in IEEE C95.1-1991.	Radio frequency data confirming compliance
Lasers	Meets ANSI Safety standards (ANSI Z136.1-2000 and Z136.6-2000).	Laser data Confirming compliance
Radioactive Materials	Quantity and Type of radioactive material are within the approval authority level of the NASA Nuclear Flight Safety Assurance Manager.	Copy of Radioactive Materials Report as per NPR 8715.3C Section 6
Biological Agents	Biological agents must meet conditions of Biosafety Level 1 of the NIH and CDC Biosafety in Microbiological and Biomedical Laboratories.	Laboratory data confirming compliance.
Chemical Release	Must not pose a substantial hazard and cannot have a significant adverse affect on the atmosphere.	Sufficient analysis to support compliance

SECTION 2 – ARE ANTICIPATED IMPACTS CONSISTENT WITH THOSE DESCRIBED IN THE NASA SCIENTIFIC BALLOON PROGRAM PEA?

1. Issues – identify the environmental resources that are of importance to this Proposed Action.
 - What are the key problems/issues that may be associated with the proposal?
 - Are there any problem activities?
 - Which resources need analysis?
2. Checklist - Complete the NASA BPO Scientific Balloon Program Worksheet to render an initial determination of whether the Proposed Action is within the scope of the Scientific Balloon Program PEA.

NASA BPO SCIENTIFIC BALLOON PROGRAM WORKSHEET

ISSUE	Covered in the Scientific Balloon Program PEA?	Would Proposed Action be Consistent with the Scientific Balloon Program PEA Analysis?	Potential Impacts			Can Impact be Mitigated by Changes to Proposed Action?	Comments
			Major	Minor	Unknown		
1. Would the Proposed Action affect military or civilian air traffic?	The U.S. Scientific Balloon Program PEA discusses the LOA between FAA Albuquerque and Fort Worth ARTCCs and CSBF Fort Sumner regarding authorization and coordination process for CSBF balloon operations. As indicated in the PEA, CSBF staff will continue to coordinate with the FAA ARTCCs and Cannon Air Force Base prior to launch and landing of unmanned aerial balloons (FAR 101, Subpart) to avoid impacts to airspace used for both military and civilian operations.						
2. Would the Proposed Action affect the health or safety of CSBF personnel or the public?	The health and safety of CSBF personnel at the launch site and persons on the ground (CSBF personnel and general public) are considered in the PEA. NASA BPO procedures for balloon activities are presented. Balloon termination procedures for avoiding population centers for protection of the general public are also presented in the PEA.						
3. Would the Proposed Action result in a physical change to the project site?	The U.S. Scientific Balloon Program PEA did not analyze construction and/or modification projects that would result in a physical changes at the CSBF Fort Sumner or Palestine launch sites.						
4. Would the Proposed Action affect air quality?	The U.S. Scientific Balloon Program PEA considers emissions from increased launch activities from CSBF Fort Sumner and the <i>status quo</i> at CSBF Palestine. The PEA indicate there would be no perceptible change in emissions from an annual increase of 10 missions at Fort Sumner; <i>status quo</i> at Palestine. Ballast material (large particle size is not regulated by EPA) and helium (no harmful effects on earth's environment) were also evaluated; neither of these materials pose a threat to air quality.						

NASA BPO SCIENTIFIC BALLOON PROGRAM WORKSHEET (cont.)

ISSUE	Covered in the Scientific Balloon Program PEA?	Would Proposed Action be Consistent with the Scientific Balloon Program PEA Analysis?	Potential Impacts			Can Impact be Mitigated by Changes to Proposed Action?	Comments
			Major	Minor	Unknown		
5. Would the Proposed Action impact socioeconomic resources?	The Uelgptle Balloon Program PEA considers the impact to socioeconomic resources from an influx of up to 15 CSBF staff and up to 40 research scientists during uelgptle balloon launch campaigns at Fort Sumner Village. The PEA indicated that the Village could accommodate the twice year influx. The BPO PEA does not include an analysis of an influx of persons to the City of Palestine for uelgptle balloon launch missions as no additional operations are proposed.						
6. Would the Proposed Action have an effect on Special Use Land Management Areas?	The Uelgptle Balloon Program PEA identifies the types of lands under the CSBF Operations Area including the launch sites. CSBF would continue, to the extent practicable, to avoid landing uelgptle balloon systems in SULMAs or on private lands; however, if the event should occur, CSBF staff would notify the appropriate individuals or agencies and seek permission prior to accessing the recovery site.						
7. Would the Proposed Action affect any threatened or endangered species or their habitats?	The Uelgptle Balloon Program PEA identifies designated critical habitat for federally listed threatened and endangered species within the CSBF Operations Area. The PEA indicates that the CSBF staff manage the scientific balloon operations to avoid designated critical habitat by using the most up-to-date geospatial critical habitat data obtained from USFWS. Should a balloon/payload land within a SULMA, or on private land, the land manager/landowner would be contacted prior to the CSBF recovery team accessing the site.						

NASA BPO SCIENTIFIC BALLOON PROGRAM WORKSHEET (cont.)

ISSUE	Covered in the Scientific Balloon Program PEA?	Would Proposed Action be Consistent with the Scientific Balloon Program PEA Analysis?	Potential Impacts			Can Impact be Mitigated by Changes to Proposed Action?	Comments
			Major	Minor	Unknown		
8. Would the Proposed Action affect any water resources, wetlands, or aquatic habitats?	The Uelgville Balloon Program PEA discusses the various surface and ground water resources and wetlands found within the CSBF Operations Area. The PEA indicates that the CSBF staff avoid water bodies; disturbance in wetlands would be minimized to the extent practicable to include possibly using a helicopter for recovery of the balloon system.						
9. Would the Proposed Action affect other protected species or their habitats?	The Uelgville Balloon Program PEA includes a discussion of migratory birds; the PEA indicates no adverse impact to migratory bird populations. The Scientific Balloon Program PEA does not include a discussion of marine mammals as balloon operations do not occur in the marine environment.						
10. Would the Proposed Action impact any site or structure of historic or archaeological importance?	The Uelgville Balloon Program PEA identifies Indian Reservations and NHRP-listed properties within the CSBF Operations Area. The PEA indicates that CSBF staff manage scientific balloon operations to avoid Indian Reservations and culturally significant areas by using up-to-date Bureau of Indian Affairs and NRHP data obtained from national and state historic properties databases. CSBF would continue to avoid all known culturally significant areas, with landing and recovery efforts being cognizant that these resources could always be discovered. CSBF standard procedure is to contact the tribal police and to notify a tribal representative for direction on recovery activities if landing a payload within an Indian Reservation boundary is unavoidable; adherence to this procedure would continue.						

NASA BPO SCIENTIFIC BALLOON PROGRAM WORKSHEET (cont.)

ISSUE	Covered in the Scientific Balloon Program PEA?	Would Proposed Action be Consistent with the Scientific Balloon Program PEA Analysis?	Potential Impacts			Can Impact be Mitigated by Changes to Proposed Action?	Comments
			Major	Minor	Unknown		
11. Would the Proposed Action include use of hazardous materials or systems?	The Scientific Balloon Program PEA describes in general terms the types of hazardous materials or systems that could be used during balloon flight preparation or flight operations. The PEA indicates that BPO Safety assesses materials proposed for each flight on a case-by-case basis to determine risk to the public and environment. Approval by BPO Safety is required prior to each scientific balloon launch. Appropriate material handling and spill response equipment is available to balloon recovery teams.						
12. Would the Proposed Action have an effect on existing transportation systems?	The Scientific Balloon Program PEA discusses the influx of privately owned vehicles at Fort Sumner Village during scientific balloon mission campaigns and the use of recovery vehicles. The PEA indicates that the impact on transportation systems within the vast CSBF Operations Area is negligible.						
13. Would the Proposed Action result in long-term changes in noise levels?	The Scientific Balloon Program PEA does not include a detailed noise analysis. The PEA does however indicate that noise from launch and recovery activities would be minor and localized, would not permanently alter the noise levels at any one location, and would be short-term in nature.						
14. Would the Proposed Action have the potential to affect geological features or soil conditions?	The Scientific Balloon Program PEA does not include a detailed analysis for geology and soils. The PEA does however indicate that no construction activities will occur at the launch sites or within the CSBF Operations Area. Soil compaction and the potential for spill of hazardous materials could occur during scientific balloon system landing and/or recovery.						

NASA BPO SCIENTIFIC BALLOON PROGRAM WORKSHEET (cont.)

ISSUE	Covered in the Scientific Balloon Program PEA?	Would Proposed Action be Consistent with the Scientific Balloon Program PEA Analysis?	Potential Impacts			Can Impact be Mitigated by Changes to Proposed Action?	Comments
			Major	Minor	Unknown		
15. Would the Proposed Action affect visual resources?	Visual resources are not analyzed in detail in the Scientific Balloon Program PEA. The PEA does indicate that removal of all balloon system during recovery creates no visual impact. In addition, the PEA states that visual sighting of the balloons in flight are short-term and rates of occurrence render an inconsequential impact.						
16. Would the Proposed Action have the potential to disproportionately impact minorities or children?	Impacts to low-income populations, minorities, or children are not analyzed in detail in the Scientific Balloon Program PEA. The PEA does indicate that no aspect of the NASA scientific balloon program adversely or disproportionately impacts the health or safety of either of these communities or persons. Should a change in operations occur at the CSBF launch sites, NASA BPO would reevaluate the balloon program at those sites in consideration of Executive Order 12898.						
17. Would the Proposed Action impact Global Climate Change?	While not analyzed in detail, the Scientific Balloon Program PEA does indicate that CSBF balloon mission activities contribute an extremely small amount to the inventory of greenhouse gases.						
18. Are there potential indirect, secondary or cumulative effects from the Proposed Action?	The Scientific Balloon Program PEA includes a discussion of cumulative impacts from scientific balloon program activities on the various resources carried forward for detailed analysis. The PEA indicates that the cumulative impact from scientific balloon program activities ranges from no impacts to minor impacts.						
Summary:							

**NASA BALLOON PROGRAM OFFICE
ENVIRONMENTAL CHECKLIST**

SECTION 3 – IF ANTICIPATED IMPACTS ARE DIFFERENT FROM THOSE DESCRIBED IN THE SCIENTIFIC BALLOON PROGRAM PEA, ADDITIONAL NEPA ANALYSIS MAY BE REQUIRED

1. Categorical Exclusion (CatEx)

NASA NEPA Regulations at 14 CFR § 1216.305 designate a wide variety of classes of categorically exclusive actions that neither individually or cumulatively would have a significant effect on the environment.

_____ Does the Proposed Action fit one of these CatExs?

If **yes**, which CatEx? _____

If **no**, proceed to 2. *Environmental Assessment*

2. Environmental Assessment (EA)

An EA is a concise public document that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact (FONSI), and to aid agency compliance with NEPA, and to facilitate preparation of an EIS. NASA BPO actions or activities that would likely require an EA are located at 14 CFR § 1216.305.

_____ Does the Proposed Action likely require an EA?

If **no**, proceed to 3. *Environmental Impact Statement*

3. Environmental Impact Statement (EIS)

An EIS is a detailed written statement as required by NEPA (40 CFR § 1502.3). NASA BPO actions that would be anticipated to have a significant effect on the human environment, thereby requiring an EIS are defined at 14 CFR § 1216.305.

SECTION 4 – WHAT IS THE CONCLUSION FOR THIS PROPOSED ACTION?

- _____ This action is within the scope of the NASA Scientific Balloon Program PEA and no further analysis is required
- _____ This action is outside the scope of the NASA Scientific Balloon Program PEA and qualifies for Categorical Exclusion
- _____ This action is outside the scope of the NASA Scientific Balloon Program PEA and requires an Environmental Assessment
- _____ This action is outside the scope of the NASA Scientific Balloon Program PEA and requires an Environmental Impact Statement

WFF NEPA PROGRAM MANAGER

DATE

PROJECT MANAGER

DATE

APPENDIX C
INITIAL AGENCY COORDINATION LETTER
AND RESPONSES

National Aeronautics and
Space Administration

**Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337**



Reply to Attn of: 250.W

October 9, 2009

U.S. Department of the Interior
Bureau of Indian Affairs
1849 C Street N.W.
Washington, DC 20240

Dear Sir or Madam:

In accordance with the National Environmental Policy Act of 1969, as amended, the National Aeronautics and Space Administration (NASA) is preparing an Environmental Assessment (EA) to analyze potential impacts associated with an increase in conventional suborbital scientific balloon missions. For over 25 years, NASA has operated conventional, suborbital balloon launches from the Columbia Scientific Balloon Facility (CSBF) located in Fort Sumner, New Mexico and Palestine, Texas. NASA proposes to increase the number of conventional balloon missions from CSBF Fort Sumner from 15 launches to 25 launches annually. Conventional suborbital scientific balloons launched from the CSBF Palestine would continue at approximately 6 balloon missions per year.

Conventional suborbital balloons are used to conduct scientific studies. The balloon system includes a helium-filled balloon, a parachute, and payload. Scientific balloons can reach altitudes of 42 kilometers (26 miles), carry payloads up to 3,600 kilograms (8,000 pounds), and stay aloft for up to 36 hours. The balloon and payload are monitored throughout the duration of the mission by CSBF staff. Once the scientific data is collected, a radio command is sent from the ground station to separate the payload from the balloon. The payload, with an attached parachute, descends back to the ground. The balloon is terminated and descends separately. A team consisting of 3 to 4 CSBF personnel and 1 to 2 scientists is dispatched to collect the balloon, parachute, and payload. The enclosed figure provides a 10-year history of balloon and payload collection points for launches from both Fort Sumner and Palestine.

NASA is requesting input from other federal and state agencies on the proposal. We respectfully request that you provide comments or concerns by November 9, 2009; however, we will consider comments received at any time during the environmental process to the extent possible.

Please contact me at (757) 824-2319 or Ms. Shari Silbert at (757) 824-2327 if you have any questions or require any additional information.

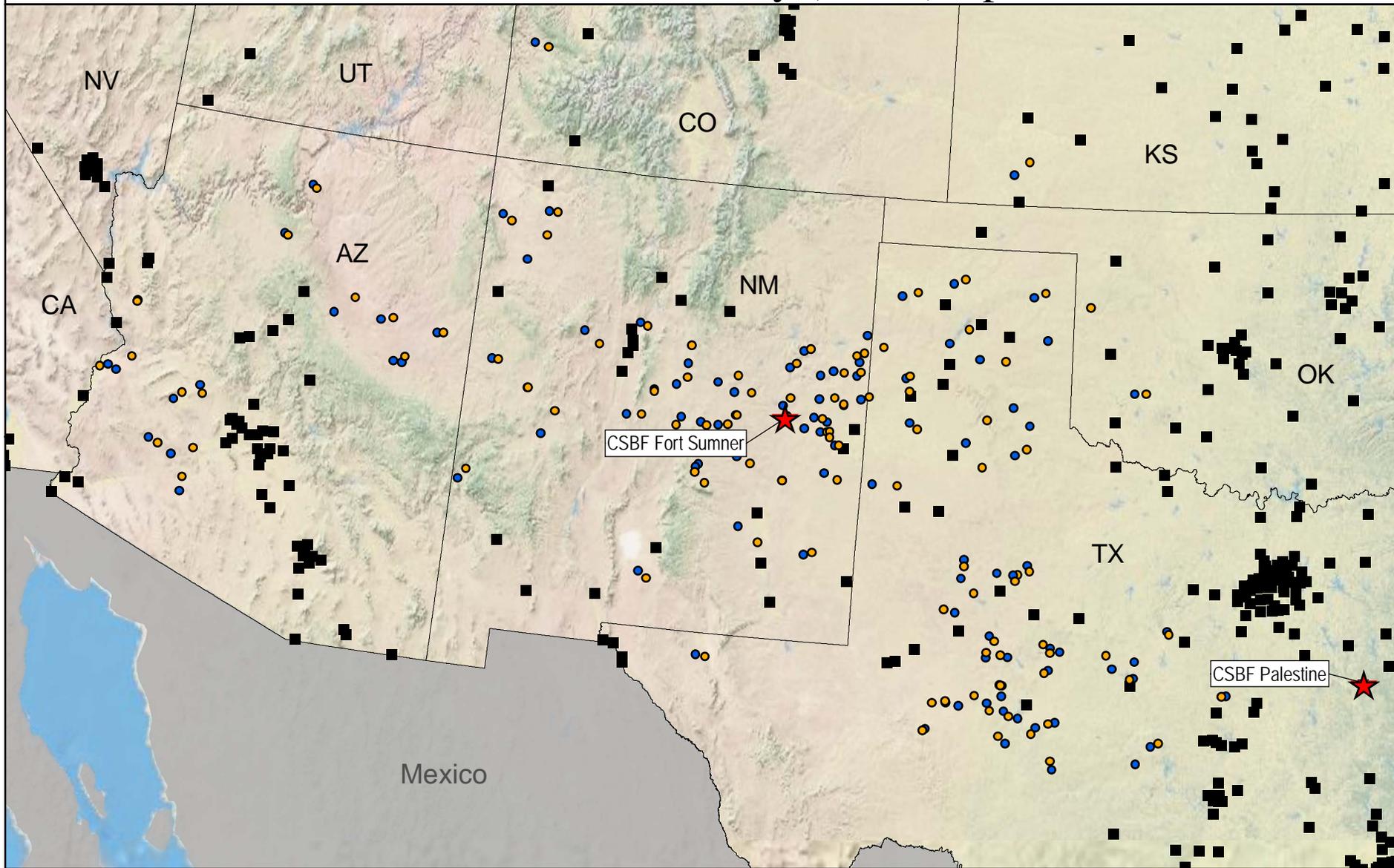
Sincerely,

A handwritten signature in black ink, appearing to read 'Joshua A. Bundick', with a long horizontal flourish extending to the right.

Joshua A. Bundick
Lead, Environmental Planning

Enclosure

Columbia Scientific Balloon Facility (CSBF) Operational Areas



- ★ NASA Launch Facility
- Major Cities/Towns
- Balloon Collection Points
- Payload Collection Points

10-Year History

100 50 0 100 200 Miles



National Aeronautics and
Space Administration

**Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337**



Reply to Attn of: 250.W

March 22, 2010

Dr. Jeffrey Blythe
THPO
Jicarilla Apache Nation
P.O. Box 507
Dulce, NM 87528-0507

Dear Dr. Blythe:

In accordance with the National Environmental Policy Act of 1969, as amended, the National Aeronautics and Space Administration (NASA) is preparing an Environmental Assessment (EA) to analyze potential impacts associated with an increase in conventional suborbital scientific balloon missions. For over 25 years, NASA has operated conventional, suborbital balloon launches from the Columbia Scientific Balloon Facility (CSBF) located in Fort Sumner, New Mexico and Palestine, Texas. NASA proposes to increase the number of conventional balloon missions from CSBF Fort Sumner from 15 launches to 25 launches annually. Conventional suborbital scientific balloons launched from the CSBF Palestine would continue at approximately 6 balloon missions per year.

Conventional suborbital balloons are used to conduct scientific studies. The balloon system includes a helium-filled balloon, a parachute, and payload. Scientific balloons can reach altitudes of 42 kilometers (26 miles), carry payloads up to 3,600 kilograms (8,000 pounds), and stay aloft for up to 36 hours. The balloon and payload are monitored throughout the duration of the mission by CSBF staff. Once the scientific data is collected, a radio command is sent from the ground station to separate the payload from the balloon. The payload, with an attached parachute, descends back to the ground. The balloon is terminated and descends separately. A team consisting of 3 to 4 CSBF personnel and 1 to 2 scientists is dispatched to collect the balloon, parachute, and payload. The enclosed figure provides a 10-year history of balloon and payload collection points for launches from both Fort Sumner and Palestine.

As balloons and payloads have infrequently descended onto tribal lands (Enclosure 1), NASA is requesting input from local tribal officers on the proposal. We respectfully request that you provide comments or concerns by April 22, 2010; however, we will consider comments received at any time during the environmental process to the extent

possible. Additionally, to facilitate an expeditious recovery of a balloon or payload from tribal lands, we request that you provide a point of contact for future coordination.

Please contact me at (757) 824-2319 or Ms. Shari Silbert at (757) 824-2327 if you have any questions or require any additional information.

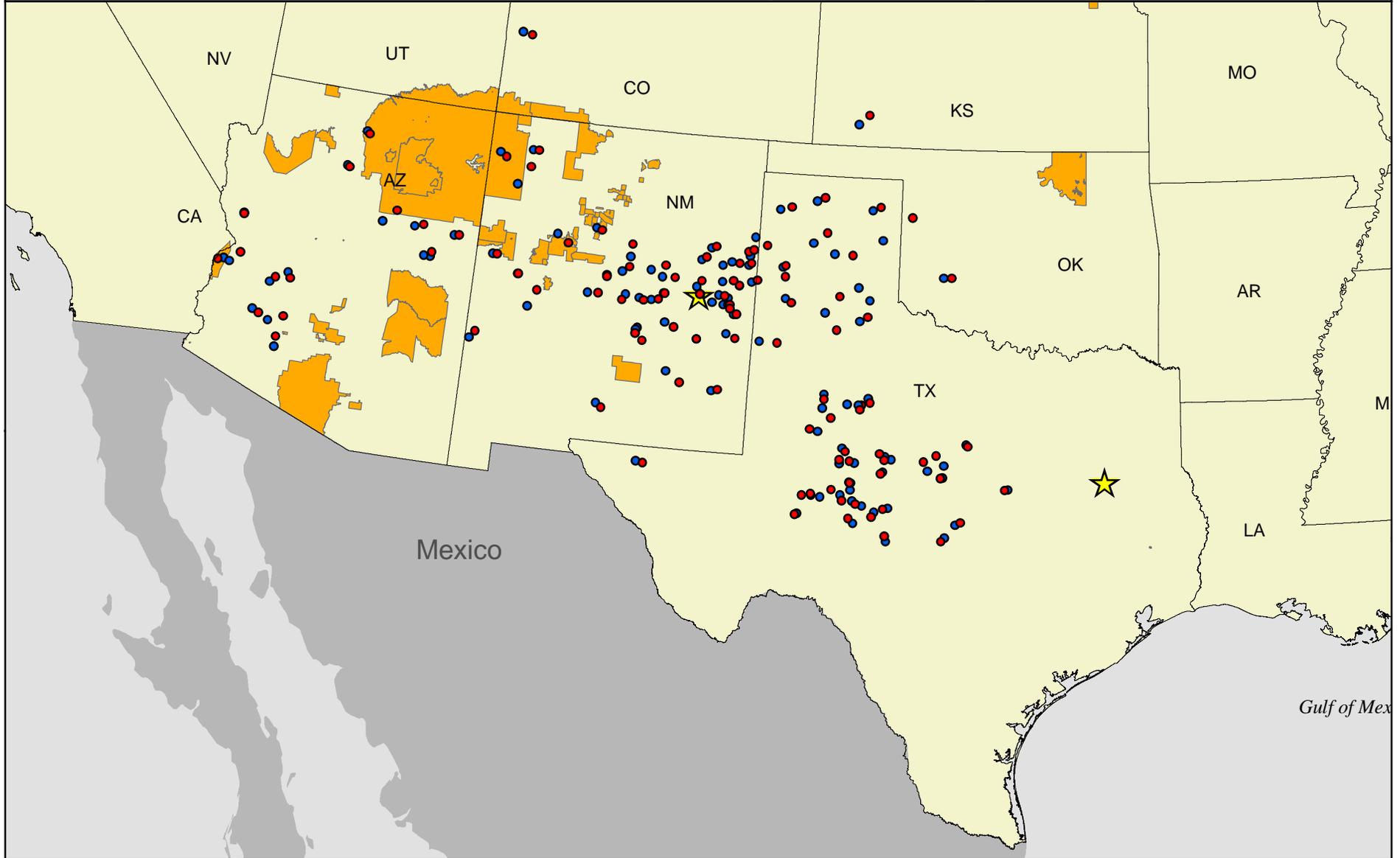
Sincerely,

A handwritten signature in black ink, appearing to read 'Joshua A. Bundick', with a long horizontal flourish extending to the right.

Joshua A. Bundick
Lead, Environmental Planning

Enclosure

Columbia Scientific Balloon Facility (CSBF) Operational Areas



 Indian Reservations



 NASA Launch Facility

10-Year History

 Balloon Collection Points

 Payload Collection Points



National Aeronautics and
Space Administration

**Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337**

RECEIVED

OCT 13 2009

Texas Historical Commission



Reply to Attn of: 250.W

October 9, 2009

Texas Historical Commission
PO Box 12276
Austin, TX 78711-2276

Dear Sir or Madam:

In accordance with the National Environmental Policy Act of 1969, as amended, the National Aeronautics and Space Administration (NASA) is preparing an Environmental Assessment (EA) to analyze potential impacts associated with an increase in conventional suborbital scientific balloon missions. For over 25 years, NASA has operated conventional, suborbital balloon launches from the Columbia Scientific Balloon Facility (CSBF) located in Fort Sumner, New Mexico and Palestine, Texas. NASA proposes to increase the number of conventional balloon missions from CSBF Fort Sumner from 15 launches to 25 launches annually. Conventional suborbital scientific balloons launched from the CSBF Palestine would continue at approximately 6 balloon missions per year.

Conventional suborbital balloons are used to conduct scientific studies. The balloon system includes a helium-filled balloon, a parachute, and payload. Scientific balloons can reach altitudes of 42 kilometers (26 miles), carry payloads up to 3,600 kilograms (8,000 pounds), and stay aloft for up to 36 hours. The balloon and payload are monitored throughout the duration of the mission by CSBF staff. Once the scientific data is collected, a radio command is sent from the ground station to separate the payload from the balloon. The payload, with an attached parachute, descends back to the ground. The balloon is terminated and descends separately. A team consisting of 3 to 4 CSBF personnel and 1 to 2 scientists is dispatched to collect the balloon, parachute, and payload. The enclosed figure provides a 10-year history of balloon and payload collection points for launches from both Fort Sumner and Palestine.

NASA is requesting input from other federal and state agencies on the proposal. We respectfully request that you provide comments or concerns by November 9, 2009; however, we will consider comments received at any time during the environmental process to the extent possible.

STATE HISTORIC PROPERTIES AFFECTED PROJECT MAY PROCEED	
by	
for	Mark Wolfe
	State Historic Preservation Officer
Date	10/13/09
Track#	

Please contact me at (757) 824-2319 or Ms. Shari Silbert at (757) 824-2327 if you have any questions or require any additional information.

Sincerely,

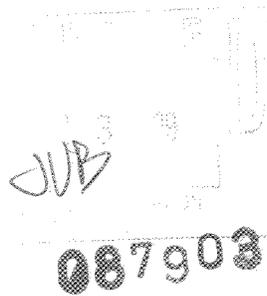
A handwritten signature in black ink, appearing to read 'Joshua A. Bundick', with a long horizontal flourish extending to the right.

Joshua A. Bundick
Lead, Environmental Planning

Enclosure

National Aeronautics and
Space Administration

**Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337**



Reply to Attn of: 250.W

October 9, 2009

Katherine Slick, SHPO
New Mexico Historic Preservation Division
Department of Cultural Affairs
Bataan Memorial Building, 407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Ms. Slick:

In accordance with the National Environmental Policy Act of 1969, as amended, the National Aeronautics and Space Administration (NASA) is preparing an Environmental Assessment (EA) to analyze potential impacts associated with an increase in conventional suborbital scientific balloon missions. For over 25 years, NASA has operated conventional, suborbital balloon launches from the Columbia Scientific Balloon Facility (CSBF) located in Fort Sumner, New Mexico and Palestine, Texas. NASA proposes to increase the number of conventional balloon missions from CSBF Fort Sumner from 15 launches to 25 launches annually. Conventional suborbital scientific balloons launched from the CSBF Palestine would continue at approximately 6 balloon missions per year.

Conventional suborbital balloons are used to conduct scientific studies. The balloon system includes a helium-filled balloon, a parachute, and payload. Scientific balloons can reach altitudes of 42 kilometers (26 miles), carry payloads up to 3,600 kilograms (8,000 pounds), and stay aloft for up to 36 hours. The balloon and payload are monitored throughout the duration of the mission by CSBF staff. Once the scientific data is collected, a radio command is sent from the ground station to separate the payload from the balloon. The payload, with an attached parachute, descends back to the ground. The balloon is terminated and descends separately. A team consisting of 3 to 4 CSBF personnel and 1 to 2 scientists is dispatched to collect the balloon, parachute, and payload. The enclosed figure provides a 10-year history of balloon and payload collection points for launches from both Fort Sumner and Palestine.

NASA is requesting input from other federal and state agencies on the proposal. We respectfully request that you provide comments or concerns by November 9, 2009; however, we will consider comments received at any time during the environmental process to the extent possible.

Please contact me at (757) 824-2319 or Ms. Shari Silbert at (757) 824-2327 if you have any questions or require any additional information.

Sincerely,



Joshua A. Bundick
Lead, Environmental Planning

Enclosure

Please provide a more thorough description of the actions and potential to affect cultural resources along with the results of NASA's tribal consultation efforts pursuant to compliance with Section 106 of the National Historic Preservation Act

Please go

Jan V Bialla 10/16/09
Antoni SHPO



OFFICE of ARCHAEOLOGY and HISTORIC PRESERVATION

19 October 2009

CHS #55816

Joshua A. Bundick
Lead, Environmental Planning
National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337

RE: Balloon and Payload Recovery, Columbia Scientific Balloon Facility, Fort Sumner,
De Baca County, New Mexico

Dear Mr. Bundick:

Thank you for your recent correspondence dated 9 October 2009, concerning the potential impacts associated with the recovery of balloons and payloads launched from the CSBF in New Mexico. Our office has reviewed the submitted materials. Our office feels that the potential impact on cultural resources is likely to be minimal, assuming that the recovery teams travel to the vicinity of the landing site by vehicle and then make the final approach to the landing site on foot. If a vehicle is used to approach the landing site itself, it is possible that archaeological resources could be impacted by the off-road activity.

If you have any questions, please contact Joseph Saldibar, Architectural Services Manager, at (303) 866-3741.

Sincerely,

Edward C. Nichols
State Historic Preservation Officer, and
President, Colorado Historical Society

OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION

303-866-3392 * Fax 303-866-2711 * E-mail: oahp@chs.state.co.us * Internet: www.coloradohistory-oahp.org

TRK BLV
10/27/09



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Amarillo Field Office - Helium Operations
801 South Fillmore, Suite 500
Amarillo, TX 79101-3545
www.blm.gov/nm



In Reply Refer To
1795(00600)

October 21, 2009

Mr. Joshua A. Bundick
Lead, Environmental Planning
National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Attention: 250.W
Wallops Island, VA 23337

Dear Mr. Bundick:

This is in response to your letter dated October 9, 2009, requesting comments for an environmental assessment on suborbital scientific balloon missions that the National Aeronautics and Space Administration (NASA) is preparing.

The Bureau of Land Management, Amarillo Field Office, can foresee no real impacts to any of the resources it manages relative to an increase in conventional, suborbital balloon launches from the Columbia Scientific Balloon Facilities at Fort Sumner, New Mexico, and Palestine, Texas. Should any of your balloons, payloads, or parachutes land on the Crossbar Cooperative Management Area, the 12,000 acre tract of public land that we manage northwest of Amarillo, Texas, your personnel will need to contact this office in order to gain access to the lands.

Please contact Paul Tanner, Natural Resource Specialist, at (806) 356-1008 if you have any questions.

Sincerely,

Leslie A. Theiss
Field Manager, Amarillo

KANSAS

KSR&C No. 09-10-142

Kansas Historical Society
Cultural Resources Division

MARK PARKINSON, GOVERNOR

October 21, 2009

Joshua A. Bundick
Lead, Environmental Planning
Goddard Space Flight Center
Wallops Flight Facility
Code 250.W
Wallops Island VA 23337

RE: Suborbital Scientific Balloon Missions
National Aeronautics and Space Administration
Statewide

Dear Mr. Bundick:

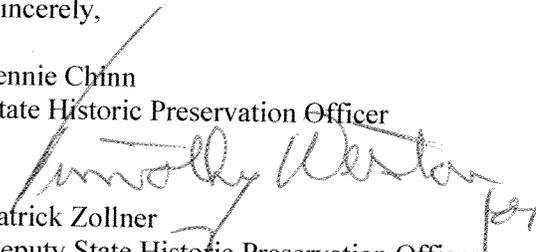
The Kansas State Historic Preservation Office has reviewed its cultural resources files for the area of the above referenced project in accordance with 36 CFR 800. The project as proposed should have no effect on properties listed in the National Register of Historic Places or otherwise identified in our files. This office has no objection to implementation of the project.

Any changes to the project area that include additional ground disturbing activities will need to be reviewed by this office prior to beginning construction. If construction work uncovers buried archaeological materials, work should cease in the area of the discovery and this office should be notified immediately.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston 785-272-8681 (ex. 214). Please refer to the Kansas Review & Compliance number (KSR&C#) above on all future correspondence relating to this project.

Sincerely,

Jennie Chinn
State Historic Preservation Officer


Patrick Zollner
Deputy State Historic Preservation Officer



BILL RICHARDSON
Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Office of the Secretary

Harold Runnels Building
1190 Saint Francis Drive (87505)
PO Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2855 Fax (505) 827-2836
www.nmenv.state.nm.us



RON CURRY
Secretary
Jon Goldstein
Deputy Secretary

October 27, 2009

National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337

ATTN: 250.W

RE: Proposed Increase in Conventional Balloon Missions from the Columbia Scientific Balloon Facility, Fort Sumner, De Baca County, New Mexico

Your letter regarding the above named project was received in the New Mexico Environment Department (NMED) and was sent to various Bureaus for review and comment. Comments were provided by the Air Quality Bureau and are as follows.

Air Quality Bureau

The New Mexico Environment Department-Air Quality Bureau has reviewed the documents submitted with respect to the proposed increase in suborbital balloon launches from the Columbia Scientific Balloon Facility (CSBF) located in Fort Sumner, De Baca County. De Baca County is currently considered to be in attainment with all New Mexico and National Ambient Air Quality Standards.

Support engine use associated with conventional balloon missions, such as emergency or stand-by generators at launch sites within the CSBF, may be subject to air quality permitting and modeling requirements in 20.2.72 NMAC. The Federal Aviation Administration (FAA) is the regulatory authority responsible for the assessment of the permitting and regulatory requirements of air quality impacts associated with the operation and deployment of suborbital balloons.

I hope this information is helpful to you.

Sincerely,

A handwritten signature in cursive script that reads "Georgia Cleverley".

Georgia Cleverley, Environmental Impact Review Coordinator
NMED File #3075



Oklahoma Historical Society

Founded May 27, 1893

State Historic Preservation Office

Oklahoma History Center • 2401 North Laird Ave. • Oklahoma City, OK 73105-7914
(405) 521-6249 • Fax (405) 522-0816 • www.okhistory.org/shpo/shpom.htm

November 4, 2009

Mr. Joshua A. Bundick
NASA Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337

RE: File #0113-10; NASA Proposed Suborbital Balloon Launches

Dear Mr. Bundick:

The referenced project does not include construction or earth-moving activities. Comments or opinions by this office are inappropriate for this project.

Should further projects include construction or earth-moving activities, an opinion should be requested from this office.

If you have any questions, please contact Timothy G. Baugh, Ph.D., Historical Archaeologist, at 405/521-6381.

Further correspondence pertaining to this project must reference the above underlined file number. Thank you.

Sincerely,


Melvena Heisch
Deputy State Historic
Preservation Officer

MH:jr



IN REPLY REFER TO:

10CC008

1790 (P0100)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

New Mexico State Office

1474 Rodeo Rd.

P.O. Box 27115

Santa Fe, New Mexico 87502-0115

www.blm.gov/nm



November 10, 2009

Joshua A. Bundick
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337

Dear Mr. Bundick:

This is in reply to your letter dated October 9, 2009, on the proposal to increase suborbital balloon flights from 15 to 25. The flights originate from the Columbia Scientific Balloon Facility (CSBF) in Fort Sumner, NM.

Suborbital balloon flights are used to conduct scientific studies. The helium-filled balloon can reach altitudes of 26 miles and carry payloads of up to 8,000 pounds. After the data is collected the payload is separated from the balloon and descends via parachute. The balloon itself descends separately. A team of four to six people recover the payload, parachute and balloon.

Recovery of the payload, parachute and balloon requires cross-country (off road) travel. The only resource issue of concern is off-highway vehicle (OHV) travel. The bulk of the Roswell Field Office has an OHV designation of "Limited," meaning OHV use is limited to existing roads and trails. There can be, however, exceptions to this designation as described on page 28 of the 2008 Special Status Species Resource Management Plan Amendment (RMPA). The RMPA describes scientific groups engaged in research or resource assessment as being exempt from OHV restrictions. Recovery of scientific balloon missions falls into this exemption.

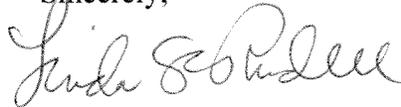
Given the randomness of the payload collection points (see the map that accompanied this request), it is highly unlikely that payloads would land in the same place more than once. The Bureau of Land Management (BLM) does not feel it is necessary to issue a permit for this activity, but should some entity insist that CSBF obtain a permit from the (BLM) to conduct its operations, the BLM could grant a blanket permit per the National Environmental Policy Act Handbook (H-1790-1), Appendix 3, BLM Categorical Exclusions, J. 6, which states:

"A single trip in a one month period for data collection or observation sites."

Finally, the Roswell Field Office encourages continued scientific flights from CSBF in Fort Sumner, NM. Experience has shown on those occasions when a balloon is visible just before dusk, the general populace in and around Roswell asks questions about the shiny, metallic object in the sky. This in turn adds to the mystique and legend of Roswell, NM.

For additional information contact Howard Parman, Planning & Environmental Coordinator, at (575) 627-0212.

Sincerely,

A handwritten signature in cursive script that reads "Linda S.C. Rundell". The signature is written in black ink and is positioned above the printed name and title.

Linda S.C. Rundell
State Director

White Mountain Apache Tribe Heritage Program
PO Box 507 Fort Apache, AZ 85926
1 (928) 338-3033 Fax: (928) 338-6055

To: Joshua A. Bundick, NASA Lead Environmental Planning
Date: April 21, 2010
Project: EA to analyze possible effects from the Conventional Suborbital Scientific Balloons.

.....

The White Mountain Apache Historic Preservation Office (THPO) appreciates receiving information on the proposed project, dated April 13, 2010. In regards to this, please attend to the checked items below.

► ***There is no need to send additional information unless project planning or implementation results in the discovery of sites and/or items having known or suspected Apache Cultural affiliation.***

The proposed project is located within an area of probable cultural or historical importance to the White Mountain Apache Tribe (WMAT). As part of the effort to identify historical properties that maybe affected by the project we recommend an ethno-historic study and interviews with Apache Elders. The Cultural Resource Director, **Mr. Ramon Riley** would be the contact person at (928) 338-4625 should this become necessary.

► Please refer to the attached additional notes in regards to the proposed project:

We have received and reviewed the information regarding the proposed development of an Environmental Assessment to analyze potential impacts associated with an increase in conventional suborbital scientific balloon missions and we've determined the proposed project to increase the number of launches **will not have an effect** on the White Mountain Apache tribe's Cultural Heritage Resources and/or historic properties. In conclusion, should it become necessary to contact tribal officials for retrieving such equipments from tribal lands you may contact myself and/or the tribe's Game & Fish Department at (928) 338-4385.

We look forward to continued collaborations in the protection and preservation of places of cultural and historical significance.

Sincerely,

Mark T. Altaha
White Mountain Apache Tribe
Historic Preservation Officer
Email: markaltaha@wmat.nsn.us

APPENDIX D

FAA LETTER OF AGREEMENT



U.S. Department
of Transportation
**Federal Aviation
Administration**

Albuquerque Air Route Traffic Control Center
8000 Louisiana Blvd. NE
Albuquerque, NM 87109

MAY 21 2009

Danny R.J. Ball
Site Manager CSBF
PO Box 319
Palestine, Texas 75802

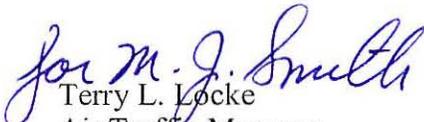
Dear Mr. Ball:

Enclosed is the new Letter of Agreement (LOA) between Columbia Scientific Balloon Facility, Albuquerque Air Route Traffic Control Center (ARTCC) and Fort Worth ARTCC. Several changes were made to update names and contact information. The letter does not contain any changes to the procedures currently in use at the Fort Sumner facility.

Three (3) copies of the LOA are enclosed. Please sign and return one (1) each to Albuquerque and Fort Worth Centers in the provided envelopes, keeping the third copy for your records. The effective date is June 22, 2009.

If you have any questions, please contact Support Specialist Rick Miller, (505) 856-4533.

Sincerely,


Terry L. Locke
Air Traffic Manager

Enclosures (3)

Albuquerque Center, Fort Worth Center and Columbia Scientific Balloon Facility
Letter of Agreement

EFFECTIVE: June 22, 2009

**SUBJ: UNMANNED FREE BALLOON OPERATIONS FROM THE FT. SUMNER,
NEW MEXICO MUNICIPAL AIRPORT**

1. **PURPOSE.** This agreement establishes responsibilities and procedures to assure balloon operations by the Columbia Scientific Balloon Facility (CSBF) are compatible with air traffic control (ATC) operations.
2. **SCOPE.** This agreement is applicable to unmanned free balloon operations conducted from Fort Sumner, New Mexico Municipal Airport by the CSBF.
3. **RESPONSIBILITIES.**
 - a. The Director, Columbia Scientific Balloon Facility, shall ensure:
 - 1) Compliance with FAR 101, Subpart D, Unmanned Free Balloons.
 - 2) All operational personnel are knowledgeable of and comply with the provisions of this agreement.
 - b. The Air Traffic Managers, Albuquerque Center and Fort Worth Center shall ensure all operational personnel are knowledgeable of and comply with the provisions of this agreement.
4. **PROCEDURES.**
 - a. For Balloons with Payloads Less Than Six Pounds (Sounding Balloons). The CSBF shall:
 - 1) Ensure prior notification is accomplished with the 27th Special Operations Wing Command Post, Cannon AFB, NM at (505) 784-2253.
 - 2) Ensure prior notification is accomplished with the Fort Worth Automated Flight Service Station (AFSS) at 1-877-487-6867 for NOTAM dissemination.
 - 3) Provide the following information to the Albuquerque Center Southeast Specialty Front Line Manager (FLM) at (505) 856-4573:
 - (a) The balloon(s) launch time, immediately after the launch.
 - (b) Unless otherwise specified by the Southeast FLM, the time the balloon vacates FL180, FL260, and FL450 during ascent and descent.
 - (c) The planned impact point stated as NAVAID (radial/distance). Should there be a change, the CSBF shall forward a new impact point.

Albuquerque Center, Fort Worth Center and Columbia Scientific Balloon Facility
Letter of Agreement

- 4) If applicable, notify the Ft. Worth Center Operations Specialist at (817) 858-7504 when the balloon enters their airspace. Specify the following:
 - (a) The position and altitude.
 - (b) The direction of movement and speed.
 - (c) The planned impact point stated as NAVAID (radial/distance). Should there be a change, the CSBF shall forward a new impact point.
 - (d) Unless otherwise specified by the Operations Specialist, when the balloon vacates FL450, FL260, FL180, and reaches the ground.
- b. For Balloons with Payloads In Excess of Six Pounds.
 - 1) Pre-Launch Operations and Coordination. The CSBF shall:
 - (a) Operate a central control and communications point at the Ft. Sumner launch site. A representative shall be immediately available at (575) 355-9445/9437 from 1 hour prior to launch until after impact.
 - (b) Ensure prior notification is accomplished with the 27th Special Operations Wing, Cannon AFB, NM.
 - (c) Ensure prior notification is accomplished with the Fort Worth Automated Flight Service Station (AFSS) for NOTAM dissemination.
 - (d) Equip the balloon with a Mode C transponder adjusted to respond on Mode 3/A, code 4453.
 - (e) At initiation of inflation, notify the Albuquerque Center MOS at (505) 856-4591, of the expected launch time.
 - (f) Provide the Southeast Specialty FLM, at (505) 856-4573, with 10 minutes prior to launch estimate.
 - 2) Post-Launch Operations and Coordination. The CSBF shall:
 - (a) Turn the transponder on from launch to FL600. In addition, maintain the capability in the control van or tracking aircraft to turn the transponder on whenever requested by the applicable Center.

Note: Albuquerque Center has the option to have CSBF terminate the flight if the transponder is inoperative.

Albuquerque Center, Fort Worth Center and Columbia Scientific Balloon Facility
Letter of Agreement

(b) Provide the Southeast Specialty FLM:

- 1 The balloon(s) launch time, immediately after the launch.
- 2 Unless otherwise specified by the FLM, the time the balloon vacates each 10,000 foot level up to and including FL600 during ascent.
- 3 Estimated ground speed of the balloon while airborne.
- 4 Planned impact point stated as NAVAID (radial/distance). Should there be a change, the CSBF control van or chase aircraft shall forward a new impact point.

(c) Conduct the balloon flight so:

- 1 The average rate of ascent is greater than 400 feet per minute from the surface to FL600.
- 2 The rate of descent is from 600 to 1,000 feet per minute between FL600 and the surface for an inflated balloon system being operated in a controlled descending mode.
- 3 When visual or electronic tracking is not maintained by the control van, a tracking aircraft shall accompany the balloon, at all times when it is at or below FL600. The tracking aircraft shall remain in radio communication with the appropriate Center facility on the specified VHF frequency.

(d) Ensure the control van or tracking aircraft advises the Albuquerque Center MOS of the appropriate NAVAID radial and distance when the balloon exits Albuquerque Center's airspace. The control van or tracking aircraft shall notify the appropriate adjacent Center of the balloon entry into their airspace, specifying the following:

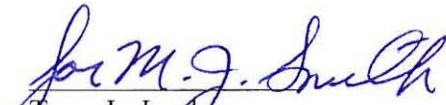
- 1 The balloon flight # (CSBF---N) and transponder code 4453.
- 2 The position and altitude.
- 3 The direction of movement and speed.
- 4 The ETA over facility boundary.

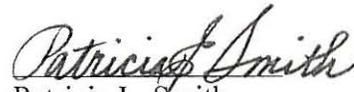
(e) Notify the appropriate Center:

- 1 One hour prior to planned cut down.
- 2 At the time the decision is made to terminate the flight, the balloon's position and estimated impact point.

Albuquerque Center, Fort Worth Center and Columbia Scientific Balloon Facility
Letter of Agreement

- 3 Unless otherwise specified, the time the balloon vacates each 10,000 foot level during descent, starting at FL600.
- (f) Obtain approval and instructions from the appropriate Center prior to having the control van or tracking aircraft transmit a cut down command. Center instructions shall be adhered to.
- (g) Immediately notify the applicable Center:
- 1 If safety devices required by FAR 101.35 become inoperative.
 - 2 Upon impact of the balloon and its payload.
- (h) Comply with the applicable Center's instructions to terminate the balloon flight by the most expeditious method, if it is determined that continued operations would create a hazard to aircraft.


Terry L. Locke
Air Traffic Manager
Albuquerque ARTCC


Patricia L. Smith
Air Traffic Manager
Fort Worth ARTCC


Danny R.J. Ball
Site Manager
Columbia Scientific Balloon Facility

APPENDIX E

**FEDERALLY LISTED THREATENED AND
ENDANGERED SPECIES**

Federally Listed Threatened and Endangered Species within CSBF Operations Area						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
E	A	Ambersnail, Kanab	<i>Oxyloma haydeni kanabensis</i>	AZ	L,O	N
E	A	Amphipod, Noel's	<i>Gammarus deperatus</i>	NM	L,O	N
E	A	Amphipod, Peck's cave	<i>Stygobromus pecki</i>	TX	L,O	Y
E	A	Bat, gray	<i>Myotis grisescens</i>	KS, OK	L,O	N
E	A	Bat, Indiana	<i>Myotis sodalis</i>	KS, OK	L	N
E	A	Bat, lesser long nosed	<i>Leptonycteris curasoae yerbabuena</i>	NM, AZ	L,O	N
E	A	Bat, Mexican long nosed	<i>Leptonycteris nivalis</i>	NM, TX	L,O	N
E	A	Bat, Ozark big-eared	<i>Corynorhinus townsendii ingens</i>	OK	L,O	N
T	A	Bear, grizzly	<i>Ursus arctos horribilis</i>	NM, AZ, CO	L	N
T	A	Bear, Louisiana black	<i>Ursus americanus luteolus</i>	TX	L,O	N
E	A	Beetle, American burying	<i>Nicrophorus americanus</i>	KS, TX, OK	L	N
E	A	Beetle, Coffin Cave mold	<i>Batrisodes teanus</i>	TX	L,O	N
E	A	Beetle, Comal Springs dryopid	<i>Stygoparnus comalensis</i>	TX	L,O	Y
E	A	Beetle, Comal Springs riffle	<i>Heterelmis comalensis</i>	TX	L,O	Y
E	A	Beetle, Helotes mold	<i>Batrisodes venyivi</i>	TX	L,O	Y
E	A	Beetle, Tooth Cave ground	<i>Rhadine presephone</i>	TX	L,O	N
E	A	Bobwhite, masked	<i>Colinus virginianus ridgwayi</i>	AZ	L,O	N
E	A	Butterfly, Uncompahgre fritillary	<i>Boloria acrocne</i>	CO	L,O	N
T	A	Catfish, Yaqui	<i>Ictalurus pricei</i>	AZ	L,O	Y
T	A	Cavefish, Ozark	<i>Amblyopsis rosae</i>	OK	L,O	N
E	A	Chub, bonytail	<i>Gila elegans</i>	AZ, CO	L,O	Y

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
T	A	Chub, Chihuahua	<i>Gila nigrescens</i>	NM	L,O	N
E	A	Chub, Gila	<i>Gila intermedia</i>	NM, AZ	L,O	Y
E	A	Chub, humpback	<i>Gila cypha</i>	AZ, CO	L,O	Y
T	A	Chub, Sonora	<i>Gila ditaenia</i>	AZ	L,O	Y
E	A	Chub, Virgin River	<i>Gila seminuda</i>	AZ	L,O	Y
E	A	Chub, Yaqui	<i>Gila purpurea</i>	AZ	L,O	Y
E	A	Condor, California	<i>Gymnogyps californianus</i>	AZ	L	N
E	A	Crane, whooping	<i>Grus americana</i>	KS, CO, TX, OK	L,O	Y
E	A	Curlew, Eskimo	<i>Numenius borealis</i>	NM, AZ, KS, CO, TX, OK	L	N
E	A	Darter, fountain	<i>Etheostoma fonticola</i>	TX	L,O	Y
T	A	Darter, leopard	<i>Percina pantherina</i>	OK	L,O	Y
T	A	Eagle, bald	<i>Haliaeetus leucocephalus</i>	AZ	O	N
E	A	Falcon, northern aplomado	<i>Falco femoralis septentrionalis</i>	NM, AZ, TX	L	N
E	A	Ferret, black-footed	<i>Mustela nigripes</i>	AZ, CO	L,O	N
E	A	Flycatcher, southwestern willow	<i>Empidonax traillii extimus</i>	NM, AZ, CO, TX	L,O	Y
T	A	Frog, Chiricahua leopard	<i>Rana chiricahuensis</i>	NM, AZ	L,O	N
E	A	Gambusia, Big Bend	<i>Gambusia gaigel</i>	TX	L,O	N
E	A	Gambusia, Clear Creek	<i>Gambusia heterochir</i>	TX	L,O	N
E	A	Gambusia, Pecos	<i>Gambusia nobilis</i>	NM, TX	L,O	N
E	A	Gambusia, San Marcos	<i>Gambusia georgei</i>	TX	L,O	Y
E	A	Ground beetle	<i>Rhadine exilis</i>	TX	L,O	Y

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
E	A	Ground beetle	<i>Rhadine infernalis</i>	TX	L,O	Y
E	A	Harvestman, Bee Creek Cave	<i>Texella reddelli</i>	TX	L,O	N
E	A	Harvestman, Bone Cave	<i>Texella reyesi</i>	TX	L,O	N
E	A	Harvestman, Cokendlopher Cave	<i>Texella cokendolpheri</i>	TX	L,O	Y
E	A	Isopod, Socorro	<i>Thermosphaeroma thermophilus</i>	NM	L,O	N
E	A	Jaguar	<i>Panthera onca</i>	NM, AZ, TX	L,O	N
E	A	Jaguarundi, Gulf Coast	<i>Herpailurus yagouaroundi cacomitil</i>	TX	L,O	N
E	A	Jaguarundi, Sinaloan	<i>Herpailurus yagouaroundi tolteca</i>	AZ	L,O	N
T	A	Lynx, Canada	<i>Lynx canadensis</i>	CO	L,O	N
T	A	Madtom, Neosho	<i>Noturus placidus</i>	KS, OK	L,O	N
E	A	Manatee, West Indian	<i>Trichechus manatus</i>	TX	L,O	N
E	A	Mapleleaf, winged	<i>Quadrula fragosa</i>	OK	L,O	N
E	A	Margay	<i>Leopardus wiedii</i>	TX	L	N
E	A	Meshweaver, Braken Bat Cave	<i>Cicurina venii</i>	TX	L,O	Y
E	A	Meshweaver, Government Canyon Bat Cave	<i>Cicurina verpera</i>	TX	L,O	N
E	A	Meshweaver, Madla's Cave	<i>Cicurina malda</i>	TX	L,O	Y
E	A	Meshweaver, Robber Baron Cave	<i>Cicurina baronia</i>	TX	L,O	Y
T	A	Minnow, Devils River	<i>Dionda diaboli</i>	TX	L,O	Y

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
T	A	Minnow, loach	<i>Tiaroga cobitis</i>	NM, AZ	L,O	Y
E	A	Minnow, Rio Grande silvery	<i>Hybognathus amarus</i>	NM	L,O	Y
T	A	Mouse, Preble's meadow jumping	<i>Zapus hudsonius preblei</i>	CO	L,O	Y
E	A	Mussel, scaleshell	<i>Leptodea leptodon</i>	OK	L,O	N
E	A	Ocelot	<i>Leopardus pardalis</i>	AZ, TX	L,O	N
T	A	Owl, Mexican spotted	<i>Strix occidentalis lucida</i>	NM, AZ, CO, TX	L,O	Y
E	A	Pelican, brown	<i>Pelecanus occidentalis</i>	AZ, TX	O	N
E	A	Pikeminnow	<i>Ptychocheilus lucius</i>	NM, AZ, CO	L,O	Y
T	A	Plover, piping	<i>Charadrius melodis</i>	KS, CO, TX, OK	L,O	Y
E	A	Pocketbook, Ouachita rock	<i>Arkansia wheeleri</i>	OK	L,O	N
E	A	Prairie Chicken, Attwater's greater	<i>Tympanuchus cupido attwaterii</i>	TX	L,O	N
E	A	Pronghorn, Sonoran	<i>Antilocapra americana sonoriensis</i>	AZ	L,O	N
E	A	Pseudoscorpion, Tooth Cave	<i>Tartarocreagris texana</i>	TX	L,O	N
E	A	Pupfish, Comanche Springs	<i>Cyprinodon elegans</i>	TX	L,O	N
E	A	Pupfish, desert	<i>Cyprinodon macularius</i>	AZ	L,O	Y
E	A	Pupfish, Leon Springs	<i>Cyprinodon bovinus</i>	TX	L,O	Y
E	A	Rail, Yuma clapper	<i>Rallus longirostris yumanensis</i>	AZ	L,O	N
T	A	Rattlesnake, New Mexican ridge nosed	<i>Crotalus willardi obscurus</i>	NM, AZ	L,O	Y
E	A	Salamander, Barton Springs	<i>Eurycea sosorum</i>	TX	L,O	N

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
T	A	Salamander, San Marcos	<i>Eurycea nana</i>	TX	L,O	Y
E	A	Salamander, Sonora tiger	<i>Ambystoma tigrinum stebbinsi</i>	AZ	L,O	N
E	A	Salamander, Texas blind	<i>Typhlomolge rathbuni</i>	TX	L,O	N
E	A	Sawfish, smalltooth	<i>Pristis pectinata</i>	TX	L,O	N
T	A	Sea turtle, green	<i>Chelonia mydas</i>	TX	L,O	N
E	A	Sea turtle, hawksbill	<i>Eretmochelys imbricata</i>	TX	L,O	N
E	A	Sea turtle, Kemp's ridley	<i>Lepidochelys kempii</i>	TX	L,O	N
E	A	Sea turtle, leatherback	<i>Dermochelys coriacea</i>	TX	L,O	N
T	A	Sea turtle, loggerhead	<i>Caretta caretta</i>	TX	L,O	N
T	A	Shiner, Arkansas River	<i>Notropis girardi</i>	NM, KS, TX, OK	L,O	Y
T	A	Shiner, beautiful	<i>Cyprinella formosa</i>	NM, AZ	L,O	Y
T	A	Shiner, Pecos bluntnose	<i>Notropis simus pecosensis</i>	NM	L,O	Y
E	A	Shiner, Topeka	<i>Notropis topeka</i>	KS	L,O	Y
T	A	Skipper, Pawnee moutane	<i>Hesperia leonardus montana</i>	CO	L,O	N
E	A	Snail, Pecos assiminea	<i>Assiminea pecos</i>	NM, TX	L,O	Y
T	A	Snake, Concho water	<i>Nerodia paucimaculata</i>	TX	L,O	Y
E	A	Spider, Government Canyon Bat Cave	<i>Neoleptoneta microps</i>	TX	L,O	N
E	A	Spider, Tooth Cave	<i>Leptoneta myopcia</i>	TX	L,O	N
T	A	Spikedace	<i>Meda fulgida</i>	NM, AZ	L,O	Y
T	A	Spinedace, Little Colorado	<i>Lepidomeda vittata</i>	AZ	L,O	Y
E	A	Springsnail, Alamosa	<i>Tryonia alamosae</i>	NM	L,O	N

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
E	A	Springsnail, Koster's	<i>Juturnia kosteri</i>	NM	L,O	N
E	A	Springsnail, Roswell	<i>Pyrgulopsis roswellensis</i>	NM	L,O	N
E	A	Springsnail, Socorro	<i>Pyrgulopsis neomexicana</i>	NM	L,O	N
E	A	Squirrel, Mount Graham red	<i>Tamiasciurus hudsonicus grahamensis</i>	AZ	L,O	Y
E	A	Sturgeon, pallid	<i>Scaphirhynchus albus</i>	KS	L,O	N
E	A	Sucker, razorback	<i>Xyrauchen texanus</i>	NM, AZ, CO	L,O	Y
E	A	Tern, least	<i>Sterna antillarum</i>	NM, KS, CO, TX, OK	L,O	N
E	A	Toad, Houston	<i>Bufo houstonensis</i>	TX	L,O	Y
E	A	Topminnow, Gila	<i>Poeciliopsis occidentalis</i>	NM, AZ	L,O	N
T	A	Tortoise, desert	<i>Gopherus agassizii</i>	AZ	O	Y
T	A	Trout, Apache	<i>Oncorhynchus apache</i>	AZ	L,O	N
E	A	Trout, Gila	<i>Oncorhynchus gilae</i>	NM, AZ	L,O	N
T	A	Trout, greenback	<i>Oncorhynchus clarki stomias</i>	CO	L,O	N
E	A	Vireo, black-capped	<i>Vireo atricapilla</i>	KS, TX, OK	L,O	N
E	A	Vole, Hualapai Mexican	<i>Microtus mexicanus hualpaiensis</i>	AZ	L,O	N
E	A	Warbler, golden-cheeked	<i>Dendroica chrysoparia</i>	TX	L,O	N
E	A	Whale, finback	<i>Balaenoptera physalus</i>	TX	L,O	N
E	A	Whale, humpback	<i>Megapter novaeangliae</i>	TX	L,O	N
E	A	Wolf, gray	<i>Canis lupus</i>	NM, AZ, KS, CO, TX, OK	L,O	N
E	A	Wolf, red	<i>Canis rufus</i>	TX	L	N
E	A	Woodpecker, ivory-billed	<i>Campephilus principalis</i>	TX, OK	L	N

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
E	A	Woodpecker, red-cockaded	<i>Picoides borealis</i>	TX, OK	L,O	N
E	A	Woundfin	<i>Plagopterus argentissimus</i>	NM, AZ	O	Y
E	P	Ambrosia, south Texas	<i>Ambrosia cheiranthifolia</i>	TX	L,O	N
E	P	Ayenia, Texas	<i>Ayenia limitaris</i>	TX	L,O	N
E	P	Beardtongue, Penland	<i>Penstemon penlandii</i>	CO	L,O	N
T	P	Bladderpod, Dudley Bluffs	<i>Lesquerella congesta</i>	CO	L,O	N
E	P	Bladderpod, white	<i>Lesquerella pallida</i>	TX	L,O	N
E	P	Bladderpod, Zapata	<i>Lesquerella thamnophila</i>	TX	L,O	Y
E	P	Blue-star, Kearney's	<i>Amsonia kearneyana</i>	AZ	L,O	N
T	P	Butterfly plant, Colorado	<i>Gaura neomexicana</i> var. <i>coloradensis</i>	CO	L,O	Y
E	P	Cactus, Arizona hedgehog	<i>Echinocereus triglochidiatus</i> var. <i>arizonicus</i>	AZ	L,O	N
E	P	Cactus, black lace	<i>Echinocereus reichenbachii</i> var. <i>albertii</i>	TX	L,O	N
E	P	Cactus, Brady pincushion	<i>Pediocactus bradyi</i>	AZ	L,O	N
E	P	Cactus, Chisos Mountian hedgehog	<i>Echinocereus chisoensis</i> var. <i>chisoensis</i>	TX	L,O	N
T	P	Cactus, Cochise pincushion	<i>Coryphantha robbinsorum</i>	AZ	L,O	N
E	P	Cactus, Knowlton	<i>Pediocactus knowltonii</i>	NM, CO	L,O	N
E	P	Cactus, Kuenzler hedgehog	<i>Echinocereus fendleri</i> var. <i>kuenzleri</i>	NM	L,O	N
T	P	Cactus, Lee pincushion	<i>Coryphantha sneedii</i> var. <i>leei</i>	NM	L,O	N

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
T	P	Cactus, Lloyd's Mariposa	<i>Echinomastus mariposensis</i>	TX	L,O	N
T	P	Cactus, Mesa Verde	<i>Sclerocactus mesae-verdae</i>	NM, CO	L,O	N
E	P	Cactus, Nellie cory	<i>Coryphanta minima</i>	TX	L,O	N
E	P	Cactus, Nichol's Turk's head	<i>Echinocactus horizontalonius var. nicholii</i>	AZ	L,O	N
E	P	Cactus, Peebles Navajo	<i>Pediocactus peeblesianus peeblesianus</i>	AZ	L,O	N
E	P	Cactus, Pima pineapple	<i>Coryphanta scheeri var. robustispina</i>	AZ	L,O	N
T	P	Cactus, Siler pincushion	<i>Pediocactus sileri</i>	AZ	L,O	N
E	P	Cactus, Sneed pincushion	<i>Coryphantha sneedii var. sneedii</i>	NM, TX	L,O	N
E	P	Cactus, star	<i>Astrophytum asterias</i>	TX	L,O	N
E	P	Cactus, Tobusch fishhook	<i>Ancistrocactus tobuschii</i>	TX	L,O	N
T	P	Cactus, Uinta Basin hookless	<i>Sclerocactus glaucus</i>	CO	L,O	N
E	P	Cat's eye, Terlingua Creek	<i>Cryptantha crassipes</i>	TX	L,O	N
E	P	Cliff-rose, Arizona	<i>Purshia subintegra</i>	AZ	L,O	N
E	P	Clover, running-buffalo	<i>Trifolium stoloniferum</i>	KS	L	N
T	P	Cory cactus, bunched	<i>Coryphantha ramillosa</i>	TX	L,O	N
T	P	Cycladenia, Jones	<i>Cycladenia jonesii</i>	AZ	L,O	N
E	P	Dawn-flower, Texas prairie	<i>Hymenoxys texana</i>	TX	L,O	N
E	P	Dogweed, ashy	<i>Thymophylla tephroleuca</i>	TX	L,O	N
T	P	Fleabane, Zuni	<i>Erigeron rhizomatus</i>	NM, AZ	L,O	N

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
E	P	Frankenia, Johnston's	<i>Frankenia johnstonii</i>	TX	L,O	N
T	P	Groundsel, San Francisco Peaks	<i>Senecio franciscanus</i>	AZ	L,O	Y
E	P	Ipomopsis, Holy Ghost	<i>Ipomopsis sancti-spiritus</i>	NM	L,O	N
E	P	Ladies'-tresses, Canelo Hills	<i>Spiranthes delitescens</i>	AZ	L,O	N
E	P	Ladies'-tresses, Navasota	<i>Spiranthes parksii</i>	TX	L,O	N
T	P	Ladies'-tresses, Ute	<i>Spiranthes diluvialis</i>	CO	L,O	N
E	P	Manioc, Walker's	<i>Manihot walkerae</i>	TX	L,O	N
E	P	Milk-vetch, Holmgren	<i>Astragalus holmgreniorum</i>	AZ	L,O	Y
E	P	Milk-vetch, Mancos	<i>Astragalus humilimus</i>	NM, CO	L,O	N
E	P	Milk-vetch, Osterhout	<i>Astragalus osterhoutii</i>	CO	L,O	N
E	P	Milk-vetch, Sentry	<i>Astragalus cremnophylax var cremnophylax</i>	AZ	L,O	N
T	P	Milkweed, Welsh's	<i>Asclepias welshii</i>	AZ	L,O	N
T	P	Milkweed, Mead's	<i>Asclepias meadii</i>	KS	L,O	N
T	P	Mustard, Penland alpine fen	<i>Eutrema penlandii</i>	CO	L,O	N
T	P	no common name	<i>Geocarpon minimum</i>	TX	O	N
T	P	Oak, Hinckley	<i>Quercus hinckleyi</i>	TX	L,O	N
T	P	Orchid, eastern prairie fringed	<i>Platanthera leucophaea</i>	OK	L,O	N
T	P	Orchid, wetern prairie fringed	<i>Platanthera praeclara</i>	KS, OK	L,O	N
E	P	Pennyroyal, Todsens	<i>Hedeoma todsenii</i>	NM	L,O	Y
E	P	Phacelia, North Park	<i>Phacelia formosula</i>	CO	L,O	N

Federally Listed Threatened and Endangered Species within CSBF Operations Area (cont.)						
Status	Animal or Plant	Common Name	Scientific Name	State	Listed or Occur	Designated Critical Habitat
E	P	Phlox, Texas trailing	<i>Phlox nivalis ssp. Texensis</i>	TX	L,O	N
E	P	Pitaya, Davis' green	<i>Enchinocereus viridiflorus var. davisii</i>	TX	L,O	N
E	P	Pondweed, Little Aguja	<i>Potamogeton clystocarpus</i>	TX	L,O	N
E	P	Poppy, Sacramento prickly	<i>Argemone pleiacantha ssp. Pinnatisecta</i>	NM	L,O	N
E	P	Poppy-mallow, Texas	<i>Callirhoe scabriuscula</i>	TX	L,O	N
E	P	Rush-pea, slender	<i>Hoffmannseggia tenella</i>	TX	L,O	N
E	P	Sand-verbena, large-fruited	<i>Abronia macrocarpa</i>	TX	L,O	N
T	P	Sedge, Navajo	<i>Carex specuicola</i>	AZ	L,O	Y
E	P	Snowbells, Texas	<i>Styrax texanus</i>	TX	L,O	N
T	P	Sunflower, Pecos	<i>Helianthus paradoxus</i>	NM, TX	L,O	N
T	P	Thistle, Sacramento Mountains	<i>Cirsium vinaceum</i>	NM	L,O	N
T	P	Twinpod, Dudley Bluffs	<i>Physaria obcordata</i>	CO	L,O	N
E	P	Water-umbrel, Huachuca	<i>Lilaeopsis schaffneriana var. recurva</i>	AZ	L,O	Y
E	P	Wild-buckwheat, clay-loving	<i>Eriogonum pelinophilum</i>	CO	L,O	Y
T	P	Wild-buckwheat, gypsum	<i>Eriogonum gypsophilum</i>	NM	L,O	Y
E	P	Wild-rice, Texas	<i>Zizania texana</i>	TX	L,O	Y

Source: USFWS 2009b

Notes: E = Endangered; T = Threatened; A = Animal; P = Plant; L = Listed; O = Occurs; Y = Yes; N = No

APPENDIX F

**FEDERALLY LISTED SPECIES WITH
DESIGNATED CRITICAL HABITAT WITHIN
THE CSBF OPERATIONS AREA**

Federally Listed Species with Designated Critical Habitat within the CSBF Operations Area					
Type	Common Name	Scientific Name	Status	States Found	Habitat
Mammal	Mount Graham Red Squirrel	<i>Tamiasciurus hudsonicus grahamensis</i>	E	AZ	Higher elevation (above 3050 m) stands of mature Englemann spruce and corkbark fir; also inhabits Douglas-fir or white fir forests at slightly lower elevations. Prefers to nest in tree cavities, but will also construct leaf nests and even use ground burrows.
	Preble's Meadow Jumping Mouse	<i>Zapus hudsonius preblei</i>	T	CO	Most specimens from Colorado appear to be from tallgrass habitats near water. The subspecies also has been reported from a variety of habitat types in Colorado including plains riparian shrubland, transition zone riparian shrubland, transition zone/plains riparian forest, wetlands surrounded by sagebrush habitat, reclaimed grassland, and dry streamside grassland at the mouth of a foothill canyon.
Bird	Piping Plover	<i>Charadrius melodis</i>	T	CO, KS, OK, TX,	Breeding birds use sandy shorelines around small alkaline lakes, large reservoir beaches, river islands and adjacent sand pits. Suitable breeding habitats are wide beaches (> 20 meters) with highly clumped vegetation, having small amount of overall vegetation cover and/or with extensive gravel. Vegetation cover on nesting islands is generally sparse. Most abundant on expansive sandflats, sandy mudflats, and sandy beach in close proximity; usually in areas with high habitat heterogeneity.
	Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E	AZ, CO, NM, TX	For nesting, requires dense riparian habitats with microclimatic conditions dictated by the local surroundings. Saturated soils, standing water, or nearby streams, pools, or cienegas are a component of nesting habitat that also influences the microclimate and density of the vegetation component. Habitat not suitable for nesting may be used for migration and foraging.
	Whooping Crane	<i>Grus americana</i>	E	CO, KS, OK, TX,	Nesting occurs in dense emergent vegetation (sedge, bulrush) in shallow (often slightly alkaline) ponds, freshwater marshes, wet prairies, or along lake margins. Habitat during migration and winter includes marshes, shallow lakes, lagoons, salt flats, grain and stubble fields, and barrier islands.
	Mexican spotted Owl	<i>Strix occidentalis lucida</i>	T	AZ, CO, NM, TX	Spotted owls are residents of old-growth or mature forests that possess complex structural components (uneven aged stands, high canopy closure, multi-storied levels, high tree density). Canyons with riparian or conifer communities are also important components. In southern Arizona and New Mexico, the mixed conifer, Madrean pine-oak, Arizona cypress, encinal oak woodlands, and associate riparian forests provide habitat in the small mountain ranges (Sky Islands) distributed across the landscape.

Federally Listed Species with Designated Critical Habitat within the CSBF Operations Area (cont.)					
Type	Common Name	Scientific Name	Status	States Found	Habitat
Reptile	New Mexican Ridge Nosed Rattlesnake	<i>Crotalus willardi obscurus</i>	T	AZ, NM	This is a montane woodland species found in Madrean evergreen woodland and Petran montane conifer forests, using the bottoms of steep, rocky canyons with intermittant streams or talus slopes. Elevations range from 1,500 to 2,500 m, with lower elevation habitats being more arid and less well vegetated. Rock shelters and perennial bunch grasses are used as cover, with rocks, leaf litter, and downed logs also used for concealment. Winter dens (hibernacula) are often in talus slopes or other rocky areas with crevices and holes that protect the snakes from frost.
	Desert Tortoise	<i>Gopherus agassizii</i>	T	AZ	Almost entirely confined to warm creosote bush vegetation characteristic of the Upper Sonoran life zones of the Mojave, Colorado, and Sonoran deserts. Specific habitat associations vary geographically, as do substrate preferences.
	Concho Water Snake	<i>Nerodia paucimaculata</i>	T	TX	This snake inhabits fast-flowing rocky streams and their margins, particularly shallow riffles and where flat, unshaded and unsilted rocks are at or close to the water's edge; it also occupies the shorelines of lakes, ponds, and impoundments.
Amphibian	Houston Toad	<i>Bufo houstonensis</i>	E	TX	Restricted to areas with soft sandy soils; pine forest, mixed deciduous forest, coastal prairie. Extant populations occur in sandy forested areas with pine. When inactive, occupies burrows in soil or seeks refuge in leaf litter or under objects.
	San Marcos Salamander	<i>Eurycea nana</i>	T	TX	Shallow alkaline springs carved out of limestone, with sand and gravel substrate. Associated with water plants and algal mat covering spring pool.
Fish	Beautiful Shiner	<i>Cyprinella formosa</i>	T	AZ, NM	This is a mid-water-column species that inhabits pools or riffles of medium-sized, clear streams, creeks, spring-fed pools, and artesian-fed ditches and, exceptionally, ephemeral lakes, over sand, gravel, or boulder substrate. It remains near but rarely within beds of plants or other cover along pond margins. Streams typically are intermittent and subject to seasonal drying and sudden flooding; individuals survive dry periods in permanent pools.
	Leon Springs Pupfish	<i>Cyprinodon bovinus</i>	E	TX	Shallow saline springs, pools, and outflow streams. Most abundant in quiet water near edges of pools, particularly those with minimal growths of algae.
	Desert Pupfish	<i>Cyprinodon macularius</i>	E	AZ	Adaptable and can survive in aquatic habitats with high temperatures and salinities, although they likely prefer more amenable conditions. Given the opportunity, they will move into areas of lower salinities and temperatures. The desert pupfish was extirpated from Arizona and natural populations remain at the Salton Sea in California, and in Mexico. Reintroductions of desert pupfish have occurred across southern Arizona in small streams, pools, ponds, tanks, and other small aquatic habitats

Federally Listed Species with Designated Critical Habitat within the CSBF Operations Area (cont.)					
Type	Common Name	Scientific Name	Status	States Found	Habitat
Fish	Devils River Minnow	<i>Dionda diaboli</i>	T	TX	This species is most abundant in fast-flowing, clear, spring-fed water over gravel. It is a channel inhabitant under normal flow regimes, but may occur in shallow riffles after flooding.
	Fountain Darter	<i>Etheostoma fonticola</i>	E	TX	This fish inhabits springs and spring-fed streams in dense beds of aquatic plants (particularly filamentous algae) growing close to bottom, which is normally mucky. It prefers clear, quiet, warm backwaters.
	San Marco Gambusias	<i>Gambusia georgei</i>	E	TX	Shallow, quiet, mud-bottomed, shoreline areas without dense vegetation in the thermally constant main channel. Formerly common under shade of bridges. Primary habitat requirements appear to be clean, clear water of a relatively stable temperature.
	Humpback Chub	<i>Gila cypha</i>	E	AZ, CO	Humpback chubs inhabit large rivers. Adults use various habitats, including deep turbulent currents, shaded canyon pools, areas under shaded ledges in moderate current, riffles, and eddies.
	Sonora Chub	<i>Gila ditaenia</i>	T	AZ	The chub is a stream-dwelling species that uses shallow (less than 0.5 m deep) pools adjacent to or near areas of fairly swift current over sand and gravel substrates. Although deep pools provide refuge during periods of stream intermittancy, chub do not prefer pools in slower moving water or areas of organic sediments.
	Bonytail Chub	<i>Gila elegans</i>	E	AZ, CO	Warm-water species that appears to favor main-stem rivers regardless of turbidity, usually in or near deep swift water, in flowing pools and eddies just outside the main current. It also has been found in reservoirs.
	Gila Chub	<i>Gila intermedia</i>	E	AZ, NM	Found in pools in smaller streams, cienegas, and artificial ponds ranging in elevation from 600-1,700 meters. Highly secretive, adults prefer deeper, quieter waters in pools and eddies below riffles or runs, often remaining in cover from terrestrial vegetation, boulders, and fallen logs.
	Yaqui Chub	<i>Gila purpurea</i>	E	AZ	Habitat includes deep pools in creeks, springheads, scoured areas of cienegas, and other stream-associated quiet waters ; this fish seeks shade, often near undercut banks or debris; it is often associated with higher aquatic plants.
	Virgin River Chub	<i>Gila seminuda</i>	E	AZ	Habitat of this riverine fish includes rocky runs, rapids, and pools. It is most common in deeper areas where waters are swift but not turbulent, and generally it is associated with boulders, root snags, or other cover.
	Rio Grande Silvery Minnow	<i>Hybognathus amarus</i>	E	NM	This riverine minnow occurs in waters with slow to moderate flow in perennial sections of the Rio Grande and associated irrigation canals. Most often it uses silt substrates (much less often sand) and typically occurs in pools, backwaters, or eddies formed by debris piles; larger individuals use a broad spectrum of habitats, including main and side channel runs, but this species rarely uses areas with high water velocities.

Federally Listed Species with Designated Critical Habitat within the CSBF Operations Area (cont.)					
Type	Common Name	Scientific Name	Status	States Found	Habitat
Fish	Yaqui Catfish	<i>Ictalurus pricei</i>	T	AZ	Small to medium rivers; most abundant in larger rivers in medium to slow currents over gravel/sand substrate.
	Little Colorado Spinedace	<i>Lepidomeda vittata</i>	T	AZ	Habitat includes rocky and sandy runs and pools of creeks and small rivers; water ranges from clear to turbid, often cold enough for trout; substrate often sand, gravel, and silt with rock and bedrock. This fish is most common in slow to moderate water currents, over fine gravel bottoms; it often inhabits unshaded pools with rocks or undercut banks and avoids deep, heavily shaded pools and shallow, open areas. During dry periods, these fishes retreat to springs and pools in intermittent streambeds.
	Spikedace	<i>Meda fulgida</i>	T	AZ, NM	Favors permanent, flowing, unpolluted water of low gradient streams having pool, riffle, run, and backwater areas; sand, gravel, and cobble substrates with low to moderate amounts of fine sediment and substrate embeddedness; abundant aquatic insects; natural hydrologic conditions, including recurrent flooding; few or no predatory or competitive non-native species present; a healthy riparian community; and moderate to high bank stability. In larger rivers, spikedace often are found in the vicinity of tributary mouths.
	Arkansas River Shiner	<i>Notropis girardi</i>	T	NM, KS, OK, TX	Typically in turbid waters of broad, shallow, unshaded channels of creeks and small to large rivers, over mostly silt and shifting sand bottom.
	Pecos Bluntnose Shiner	<i>Notropis simus pecosensis</i>	T	NM	Typically in main river channel, often below obstructions, over substrate of sand, gravel, and silt. Young have been found in backwaters, riffles, and pools.
	Topeka Shiner	<i>Notropis topeka</i>	E	KS	This species typically inhabits quiet, open, permanent pools of small, clear, high-quality headwaters and creeks that drain upland prairie areas, including tiny spring-fed pools in headwater streams and larger streams.
	Leopard Darter	<i>Percina pantherina</i>	T	OK	Clear, upland small to medium rivers, usually in shallow pools, 20-80 cm deep over gravel, rubble or boulders, in moderate currents.
	Woundfin	<i>Plagopterus argentissimus</i>	E	AZ, NM	The woundfin occupies seasonally swift, warm, highly turbid, small to medium rivers, with constantly shifting substrates. Adults and juveniles inhabit runs and quiet waters adjacent to riffles with sand and sand/gravel substrates.
	Pikeminnow	<i>Ptychocheilus lucius</i>	E	AZ, CO, NM	Medium to large rivers. Young prefer small, quiet backwaters. Adults use various habitats, including deep turbid strongly flowing water, eddies, runs, flooded bottoms, or backwaters (especially during high flow). Lowlands inundated during spring high flow appear to be important habitats.

Federally Listed Species with Designated Critical Habitat within the CSBF Operations Area (cont.)					
Type	Common Name	Scientific Name	Status	States Found	Habitat
Fish	Loach Minnow	<i>Tiaroga cobitis</i>	T	AZ, NM	Lives on bottom in permanent, flowing, unpolluted creeks and small to medium rivers of low to moderate gradient, low amounts of fine sediment and substrate embeddedness, abundant aquatic insects, and a healthy, intact riparian community with moderate to high bank stability; typically on turbulent riffles, sometimes in association with filamentous algae.
	Razorback Sucker	<i>Xyrauchen texanus</i>	E	AZ, CO, NM	Habitats include slow areas, backwaters, and eddies of medium to large rivers and their impoundments (3 of the 4 remaining populations of greater than 100 individuals are in reservoirs). Flooded lowlands and lower portions of tributary streams presumably served as resting-feeding areas during breeding season in the Green River basin. This fish is often associated with sand, mud, and rock substrate in areas with sparse aquatic vegetation, where temperatures are moderate to warm.
Invertebrate	Pecos Assiminea Snail	<i>Assiminea pecos</i>	E	NM, TX	Occupies springs, seeps, sinkholes and wetlands near Roswell NM, and in Reeves and Pecos Counties in TX.
	Helotes mold Beetle	<i>Batrisodes venyivi</i>	E	TX	Karstic (cave-like) formations of Bexar county, Texas.
	Robber Baron Cave Meshweaver	<i>Cicurina baronia</i>	E	TX	Karstic (cave-like) formations of Bexar county, Texas.
	Madla's Cave Meshweaver	<i>Cicurina malda</i>	E	TX	Cave dweller, found among loose rocks or mud balls. Typically spin their webs underneath rocks and in crevices.
	Braken Bat Cave Meshweaver	<i>Cicurina venii</i>	E	TX	Cave dweller, found among loose rocks or mud balls. Typically spin their webs underneath rocks and in crevices.
	Comal Springs Riffle Beetle	<i>Heterelmis comalensis</i>	E	TX	Inhabits the gravel substrates and shallow riffles in spring runs. Found in headwater springs on hard-packed gravel substrate.
	Ground beetle	<i>Rhadine exilis</i>	E	TX	Karstic (cave-like) formations of Bexar county, Texas. Seldom found near cave entrances - prefers the dark zone deeper in caves.
	Ground beetle	<i>Rhadine infernalis</i>	E	TX	Karstic (cave-like) formations of Bexar county, Texas. The species may be occasionally abundant with ten or more individuals seen in a limited area. At other times, however, it appears to be absent or is extremely rare.

Federally Listed Species with Designated Critical Habitat within the CSBF Operations Area (cont.)					
Type	Common Name	Scientific Name	Status	States Found	Habitat
Invertebrate	Peck's cave Amphipod	<i>Stygobromus pecki</i>	E	TX	Primary habitat is a zone of permanent darkness in the underground aquifer feeding the springs. Above ground, individuals are easy prey for predators, but they usually take shelter in the rock and gravel crevices and may succeed in reentering the Spring orifice.
	Comal Springs Dryopid Beetle	<i>Stygoparnus comalensis</i>	E	TX	This aquatic beetle has only been collected in several outlets of Comal Springs which forms the headwaters of the Comal River. It is unknown whether the center of the population resides further underground in the aquifer, or just below the surface. This beetle is the first member of the family Dryopidae reported from subterranean waters.
	Cokendolpher Cave Harvestman	<i>Texella cokendolpheri</i>	E	TX	Karstic (cave-like) formations of Bexar county, Texas.
Plant	Zapata Bladderpod	<i>Lesquerella thamnophila</i>	E	TX	Zapata bladderpod occurs in thorn shrublands and is often associated with blackbrush acacia, cenizo, and calderona, among other species.
	Colorado Butterfly Plant	<i>Gaura neomexicana</i> var. <i>coloradensis</i>	T	CO	Occurs on subirrigated, alluvial soils on level or slightly sloping floodplains and drainage bottoms at elevations of 5,000-6,400 feet. Colonies are often found in low depressions or along bends in wide, meandering stream channels, a short distance upslope of the actual channel. Populations are usually found in areas that are intermediate in moisture between wet, streamside communities dominated by sedges, rushes, and cattails, and adjacent dry, upland shortgrass prairie.
	San Francisco Peaks Groundsel	<i>Senecio franciscanus</i>	T	AZ	Alpine tundra areas on sparsely vegetated loose talus slopes, at ,3350-3,750 m; usually just above southwestern montane spruce-fir or bristlecone pine forests.
	Holmgren Milk-vetch	<i>Astragalus holmgreniorum</i>	E	AZ	Warm desert shrub communities on gravelly clay hills at 820-850 m elevation, at the upper elevational limit of the creosote bush zone.
	Todsen's Pennyroyal	<i>Hedeoma todsenii</i>	E	NM	Steep gravelly north- and east-facing hillsides with gypseous limestone soils at about 2,000 m elevation. The surrounding plant community is an open pinyon-juniper woodland.
	Navajo Sedge	<i>Carex specuicola</i>	T	AZ	Moist, sandy to silty soils of shady seep-spring pockets or alcoves with somewhat limited soil development. 1,740-1,830 m elevation.
	Huachuca Water-umbrel	<i>Lilaeopsis schaffneriana</i> var. <i>recurva</i>	E	AZ	Requires backwaters, cienegas, springs systems or side channels with perennial flow and gentle gradients in areas that are not subject to frequent or intense floods. Does not tolerate crowding by other plant species, so some flooding is needed to keep other vegetation levels low. Generally found along the margins of these habitats, in 5-15 cm of water and in shaded or unshaded sites. Elevation of known populations is between 1,210-1,970 meters

Federally Listed Species with Designated Critical Habitat within the CSBF Operations Area (cont.)					
Type	Common Name	Scientific Name	Status	States Found	Habitat
Plant	clay-loving Wild-buckwheat	<i>Eriogonum pelinophilum</i>	E	CO	Whitish, alkaline clay soils on Mancos shale. Vegetation is a sparse salt desert shrub community. 1,580-1,950 m elevation.
	Gypsum Wild-buckwheat	<i>Eriogonum gypsophilum</i>	T	NM	Open, gypsum in grama grassland, at about 1500 m; semi-arid.
	Texas Wild-rice	<i>Zizania texana</i>	E	TX	A clear, flowing waters of spring origin with a relatively constant year-round temperature of 21-25 degrees C. The plants grow in gravelly, sandy to silty clays in relatively shallow water (<2 m deep).

Source: USFWS 2009b; NatureServe 2009; Edwards Aquifer 2009

Notes: T=Threatened; E=Endangered

APPENDIX G

DRAFT PEA COMMENT LETTERS

**White Mountain Apache Tribe Heritage Program
PO Box 507 Fort Apache, AZ 85926
1 (928) 338-3033 Fax: (928) 338-6055**

To: Joshua Bundick, Wallops Flight Facility NEPA Manger
Date: June 15, 2010
Project: NASA Draft Programmatic Environmental Assessment FONSI.

The White Mountain Apache Historic Preservation Office (THPO) appreciates receiving information on the proposed project, dated June 11, 2010. In regards to this, please attend to the checked items below.

► *There is no need to send additional information unless project planning or implementation results in the discovery of sites and/or items having known or suspected Apache Cultural affiliation.*

The proposed project is located within an area of probable cultural or historical importance to the White Mountain Apache Tribe (WMAT). As part of the effort to identify historical properties that maybe affected by the project we recommend an ethno-historic study and interviews with Apache Elders. The Cultural Resource Director, *Mr. Ramon Riley* would be the contact person at (928) 338-4625 should this become necessary.

► Please refer to the attached additional notes in regards to the proposed project:

We have received and reviewed the information regarding NASA's Draft Programmatic Environmental Assessment and the draft Finding of No Significant Impact (FONSI) for the proposed increase in scientific balloon launch and flight operations originating from NASA's Columbia Scientific Balloon Facilities located in Fort Summer, New Mexico and Palestine, Texas, and we've determined the Proposed Action and/or project will not have an effect on the White Mountain Apache tribe's Cultural Heritage Resources and/or historic properties. Regardless, any/all ground disturbance should be monitored if there are reasons to believe that human remains and/or funerary objects are present, if such remains and/or objects are encountered all construction activities are to be stopped and the proper authorities and/or affiliated tribe(s) be notified to evaluate the situation.

We look forward to continued collaborations in the protection and preservation of places of cultural and historical significance.

Sincerely,

Mark T. Altaha *MMA*
White Mountain Apache Tribe
Historic Preservation Officer
Email: markaltaha@wmat.us



STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

June 16, 2010

Joshua A. Bundick
Wallops Flight Facility NEPA Manager
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337



Reply To Attn of: 250.W

Dear Mr. Bundick:

RE: NASA Scientific Balloon Program Programmatic Environmental
Assessment

In response to your request, we have completed an preliminary review regarding the above referenced proposal with regard to water quality, air quality, hazardous waste and solid waste. At this time, we have no objections nor comments regarding the project.

If you have any questions or need further assistance, do not hesitate to contact me at 405/702-1031 or 1/800-869-1400.

Sincerely,

Kara L. Williams
Environmental Programs Manager
CUSTOMER ASSISTANCE PROGRAM



KANSAS

KSR&C No. 09-10-142

Kansas Historical Society
Jennie Chinn, *Executive Director*

MARK PARKINSON, GOVERNOR

June 21, 2010



Joshua Bundick
NEPA Manager
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, WA 23337

RE: Draft Programmatic Environmental Assessment (PEA)
Draft Finding of No Significant Impact (FONSI)
Scientific Balloon Launch and Flight Operations
Statewide

Dear Mr. Bundick:

In accordance with 36 CFR 800, our office acknowledges receipt of a draft document entitled *NASA Scientific Balloon Program, Programmatic Environmental Assessment*. We find the document to be acceptable and concur with its recommendation that an increase in scientific balloon launch and flight operations originating from NASA's facilities in Fort Sumner, New Mexico and Palestine, Texas will have no effect on historic properties as defined in 36 CFR 800. This office therefore continues to have no objection to expansion of the program.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Patrick Zollner at 785-272-8681 ext. 217 or Tim Weston at 785-272-8681 (ext. 214).

Sincerely,

Jennie Chinn, Executive Director and
State Historic Preservation Officer

Patrick Zollner
Deputy SHPO



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Post Office Box 1306

Albuquerque, New Mexico 87103

In Reply Refer To:

FWS/R2/ES-HC/EC/045242

JUL 15 2010

Mr. Joshua A. Bundick
Wallops Flight Facility NEPA Manager
Goddard Space Flight Center's, Code 250.W
National Aeronautics and Space Administration
Wallops Island, Virginia 23337

Dear Mr. Bundick:

On June 14, 2010, the U. S. Fish and Wildlife Service (Service) received your Draft Programmatic Environmental Assessment (PEA) and Draft Finding of No Significant Impact (FONSI) for the proposed increase in scientific balloon launch and flight operations originating from the National Aeronautics and Space Administration's Columbia Scientific Balloon Facilities located in Fort Sumner, New Mexico and Palestine, Texas, dated June 11, 2010.

We reviewed the draft PEA and FONSI and do not have any comments because there will be no construction at the facilities, and the facilities are not located near any existing federally listed species on record. The draft PEA states that when payloads land in designated critical habitat the Columbia Scientific Balloon Facility will contact the Service to determine the best method to retrieve the payload. We look forward to hearing from you should such an event occur.

We appreciate the opportunity to review and comment. If you have any questions, please contact Denise Baker, Chief, Habitat Conservation/Environmental Contaminants, at 505-248-6681.

Sincerely,

Joy E. Nicholas
ACTING Regional Director

Mr. Joshua A. Bundick

2

cc: Supervisors, Ecological Services Field Offices, Albuquerque, NM; Arlington, TX



Janice K. Brewer
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.azdeq.gov



Benjamin H. Grumbles
Director

July 9, 2010

National Aeronautics and Space Administration
Attn: 250.W
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337

Project: Draft Programmatic Environmental Assessment for NASA Scientific Balloon Program

Dear Sir/Madame (Attn: 250W.):

The Air Quality Division (AQD) of the Arizona Department of Environmental Quality received your compact disc (CD) containing the scoping letter dated June 11, 2010. The Draft NASA Scientific Balloon Program Programmatic Environmental Assessment described on the CD has been reviewed for potential General Conformity Determination with the Arizona State Implementation Plan in accordance with Clean Air Act Section 176(c)(1); 58 Federal Register 63214-63259; Title 40 Code of Federal Regulations Part 51, Subpart W §§ 51.850-51.860; Title 40 Code of Federal Regulations Part 93, Subpart B §§ 93.150-160; and Arizona Administrative Code R18-2-348 (approved into the Arizona State Implementation Plan April 23, 1999; effective June 22, 1999).

The Air Quality Division has concluded that a General Conformity Determination is not required at this time for the following reasons:

- Project is not in an Arizona Nonattainment or Maintenance Area.

Based on the introductory letter (from Mr. Joshua Bundick) and Section 3.4.2 of the Draft Programmatic EA, neither of the project facilities is located in the State of Arizona.

- Project's total emissions of PM₁₀ would be less than *de minimis* levels in Title 40 CFR § 51.853(b) [and §93.153(b)] as described or calculated.

Based on additional information within Section 3.4, the ballast within the balloons which is used maintain proper elevation during tests consist of very fine glass beads [grain size 0.69 mm to 0.84 mm] or fine steel shot [grain size 0.3 mm to 0.5 mm]. Based on the size of the ballast, it is not a source of PM₁₀ within the balloons. Although rarely performed, should all the ballast be

Northern Regional Office
1801 W. Route 66 • Suite 117 • Flagstaff, AZ 86001
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

Sir/Madame (Attn: 250W.)
July 9, 2010
Page 2

released at one time, it would travel in the upper atmospheric winds and be dispersed over hundreds of miles. The particle size of the glass beads and steel shot exceeds 10 microns, and as such, neither of these materials is regulated by the USEPA.

Therefore the AQD concurs with the FONSI based on the results of the Draft Programmatic Environmental Assessment (PEA).

Should you have further questions, please do not hesitate to call me at (602) 771-2375 or A. "Bonnie" Cockrell at (602) 771-2378 of the Planning Section Staff.

Very truly yours,



Diane L. Arnst, Manager
Air Quality Planning Section

Enclosure

cc: Bret Parke, EV Administrative Counsel
A. "Bonnie" Cockrell, Environmental Program Specialist, Air Planning
File No. 240091



R18-2-604. Open Areas, Dry Washes, or Riverbeds

- A. No person shall cause, suffer, allow, or permit a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, without taking reasonable precautions to limit excessive amounts of particulate matter from becoming airborne. Dust and other types of air contaminants shall be kept to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means.
- B. No person shall cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne. Dust shall be kept to a minimum by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means.
- C. No person shall operate a motor vehicle for recreational purposes in a dry wash, riverbed or open area in such a way as to cause or contribute to visible dust emissions which then cross property lines into a residential, recreational, institutional, educational, retail sales, hotel or business premises. For purposes of this subsection "motor vehicles" shall include, but not be limited to trucks, cars, cycles, bikes, buggies and 3-wheelers. Any person who violates the provisions of this subsection shall be subject to prosecution under A.R.S. § 49-463.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-604 renumbered without change as Section R18-2-604 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-604 renumbered to R18-2-804, new Section R18-2-604 renumbered from R18-2-404 and amended effective November 15, 1993 (Supp. 93-4).

R18-2-605. Roadways and Streets

- A. No person shall cause, suffer, allow or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust and other particulates shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.
- B. No person shall cause, suffer, allow or permit transportation of materials likely to give rise to airborne dust without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne. Earth or other material that is deposited by trucking or earth moving equipment shall be removed from paved streets by the person responsible for such deposits.

Historical Note

Adopted effective May 14, 1979 (Supp. 79-1). Former Section R9-3-605 renumbered without change as Section R18-2-605 (Supp. 87-3). Amended effective September 26, 1990 (Supp. 90-3). Former Section R18-2-605 renumbered to R18-2-805, new Section R18-2-605 renumbered from R18-2-405 effective November 15, 1993 (Supp. 93-4).

R18-2-606. Material Handling

No person shall cause, suffer, allow or permit crushing, screening, handling, transporting or conveying of materials or other operations likely to result in significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-606 renumbered from R18-2-406 effective November 15, 1993 (Supp. 93-4).

R18-2-607. Storage Piles

- A. No person shall cause, suffer, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne.
- B. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

Historical Note

Section R18-2-607 renumbered from R18-2-407 effective November 15, 1993 (Supp. 93-4).

R18-2-804. Roadway and Site Cleaning Machinery

- A. No person shall cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes.
- B. In addition to complying with subsection (A), no person shall cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

Historical Note

Adopted effective February 26, 1988 (Supp. 88-1). Amended effective September 26, 1990 (Supp. 90-3). Amended effective February 3, 1993 (Supp. 93-1). Former Section R18-2-804 renumbered to Section R18-2-904, new Section R18-2-804 renumbered from R18-2-604 effective November 15, 1993 (Supp. 93-4).



United States Department of the Interior

Bureau of Indian Affairs
Navajo Region
P. O. Box 1060
Gallup, New Mexico 87305



MC 620: Division of Environmental, Cultural & Safety Management

JUL 20 2010

Mr. Joshua A. Bundick
Wallops Flight Facility NEPA Manager
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337



Dear Mr. Bundick:

EA-10-112

The Navajo Region Division of Environmental, Cultural, and Safety Management (DECSM) received a copy of the programmatic environmental assessment (PEA), EA-10-112, NASA Scientific Balloon Program: Programmatic Environmental Assessment issued June 2010.

Our review of your document resulted in no comments being generated at this time. We would suggest that you include the Navajo Nation Department of Fish and Wildlife in the future to comment on your project in relation to wildlife and plant species that may be of concern that the balloons and their payload could potentially have impacts on.

Thank you for including us in your review process.

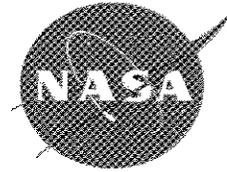
If you have questions, you may contact Ms. Harrilene J. Yazzie, Regional NEPA Coordinator, at (505) 863-8287.

Sincerely,

ACTING Regional Director, Navajo

National Aeronautics and
Space Administration

**Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337**



Reply to Attn of: 250.W

June 11, 2010

Texas Historical Commission
PO Box 12276
Austin, TX 78711-2276



Dear Reader:

In accordance with the National Environmental Policy Act of 1969, as amended, the National Aeronautics and Space Administration (NASA) has prepared a Draft Programmatic Environmental Assessment (PEA) and Draft Finding of No Significant Impact (FONSI) for the proposed increase in scientific balloon launch and flight operations originating from NASA's Columbia Scientific Balloon Facilities located in Fort Sumner, New Mexico and Palestine, Texas. NASA respectfully requests that you review and provide comments on the enclosed Draft PEA and Draft FONSI by Friday, July 16, 2010, or within 30 days of the publication of the documents' Notice of Availability in the *Federal Register*, whichever is later.

Please contact me at (757) 824-2319, or Ms. Shari Silbert at (757) 824-2327, if you have any questions or require any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Joshua A. Bundick". The signature is fluid and cursive, with a long horizontal stroke at the end.

Joshua A. Bundick
Wallops Flight Facility NEPA Manager

Enclosure

NO HISTORIC PROPERTIES AFFECTED PROJECT MAY PROCEED	
by	
for Mark Wolfe	
State Historic Preservation Officer	
Date	7/13/10
Track#	201014464



THE NAVAJO NATION

JOE SHIRLEY, JR.
PRESIDENT

BEN SHELLY
VICE-PRESIDENT

July 21, 2010

Joshua A. Bundick, Wallops Flight Facility NEPA Manager
National Aeronautics & Space Administration
Goddard Space Flight Center
Wallops Flight Facility, Wallops Island, VA 23337



Dear Mr. Bundick:

Our apology for an oversight and missing the deadline date of our response to your request, and that the Navajo Nation Historic Preservation Department – Traditional Culture Program (NNHPD-TCP) is in receipt of the proposed project regarding a Draft Programmatic Environmental Assessment and Draft Finding of No Significant Impact for the proposed increase in scientific balloon launch and flight operations originating from NASA's Columbia Scientific Balloon Facilities located in Fort Sumner, New Mexico and Palestine, Texas.

After reviewing your consultation documents, HPD-TCP has concluded the proposed undertaking/project area **will not impact** Navajo traditional cultural properties. The NNHPD-TCP, on behalf of the Navajo Nation has no concerns at this time.

However, the determination made by the HPD-TCP does not necessarily mean that the Navajo Nation has no interest or concerns with the proposed project. If the proposed project inadvertently discovers habitation sites, plant gathering areas, human remains and objects of cultural patrimony the HPD-TCP request that we be notified respectively in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA).

The HPD-TCP appreciates the National Aeronautics and Space Administration's consultation efforts, pursuant to 36 CFR Pt. 800.1 (c)(2)(iii). Should you have any additional concerns and/or questions, do not hesitate to contact me electronically at tonyjoe@navajo.org or telephone at 928-871-7750. Mr. Kelly Francis will be taking over all Section 106 Consultations soon within the near future.

Sincerely,

Tony H. Joe, Jr., Supervisory Anthropologist (*Section 106 Consultations*)
Historic Preservation Department – Traditional Culture Program

TCP 10-568
CC: Office File/Chrono



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

New Mexico State Office
P.O. Box 27115
Santa Fe, New Mexico 87502-0115
www.blm.gov/nm



IN REPLY REFER TO:

10CC067
1790 (P0200)

July 30, 2010

Mr. Joshua A. Bundick
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337



Dear Mr. Bundick:

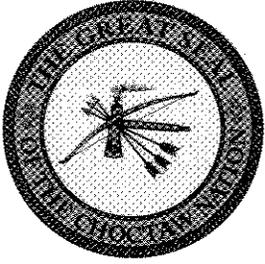
This is in reply to your letter dated June 11, 2010, on the proposal to increase in scientific balloon launch and flight operations originating from NASA's Columbia Scientific Balloon Facility located in Fort Sumner, NM, and Palestine, TX.

Thank you for the opportunity to review your "draft NASA Scientific Balloon Program Programmatic Environmental Assessment." Under normal circumstances, the Bureau of Land Management (BLM) would consider the proposed retrieval activity as casual use (no permit required). However, because of recent land use allocations through our planning efforts, we will need NASA to contact the BLM before retrievals are conducted on public land. At the time of notification, the BLM will provide NASA with instructions on how to minimize or avoid impacts to public land resources. Examples of situations we will need you to avoid are sensitive areas (ie., playas, caves, steep slopes, and fragile soils), and habitat for candidate species proposed for listing under the Endangered Species Act.

If you have further questions, please contact the Roswell Field Office at (575) 627-0272 or the Carlsbad Field Office at (575) 234-5972.

Sincerely,

Linda S.C. Rundell
State Director



Choctaw Nation of Oklahoma

P.O. Box 1210 • Durant, OK 74702-1210 • (580) 924-8280

Gregory E. Pyle
Chief

Gary Batton
Assistant Chief

June 18, 2010



National Aeronautics and
Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, VA 23337

Dear Joshua A. Bundick:

We have reviewed the following proposed project (s) as to its effect regarding religious and/or cultural significance to historic properties that may be affected by an undertaking of the projects area of potential effect.

Project Description: Columbia Scientific Balloon Facilities

County: Fort Sumner, New Mexico and Palestine Texas

Comments: Thank you for seeking to consult with the Choctaw Nation of Oklahoma on this project. However, it is located outside of our areas of historical interest. If we may be of any further assistance, or if you would like a list of states and counties, in which we do have a historical interest, please contact us at 1-800-522-6170 ext. 2137.

Sincerely,

Terry D. Cole
Tribal Historic Preservation Officer
Choctaw Nation of Oklahoma

By: 
Caren A. Johnson
Administrative Assistant

CAJ: