

## FUSRAP History of the Chupadera Mesa, NM, Site

The following historical summary is provided to document the inclusion of the Chupadera Mesa, NM, Site into the Formerly Utilized Sites Remedial Action Program (FUSRAP). Although no remedial action was required, the site met eligibility criterion and was included under FUSRAP, under which the final radiological surveys were performed.

Chupadera Mesa is located north and east of the White Sands Missile Range and downwind of the Trinity test site (Figure 1). The Trinity test was the first detonation of a nuclear device. The test occurred on July 16, 1945, at the Trinity Site located within White Sands Missile Range in Central New Mexico. The device was mounted on a 100-foot-tall tower with cables for instruments and timing strung to protective observation shelters 10,000 yards away. Historical records state that weather on the day of the Trinity test began cloudy and windy with scattered showers. At 2:00 a.m., the test was rescheduled from 4:00 a.m. to 5:30 a.m. At 4:00 a.m., the rain stopped, and at 4:45 a.m., a favorable weather forecast indicated the 5:30 a.m. time was acceptable for the test to be performed. Weather remained cloudy after the test, as reported by planes sent to drop airborne sensors during and after the test. The test resulted in deposition and dispersal of radioactive fallout over the area illustrated on the figure below, which was designated the Chupadera Mesa FUSRAP site.

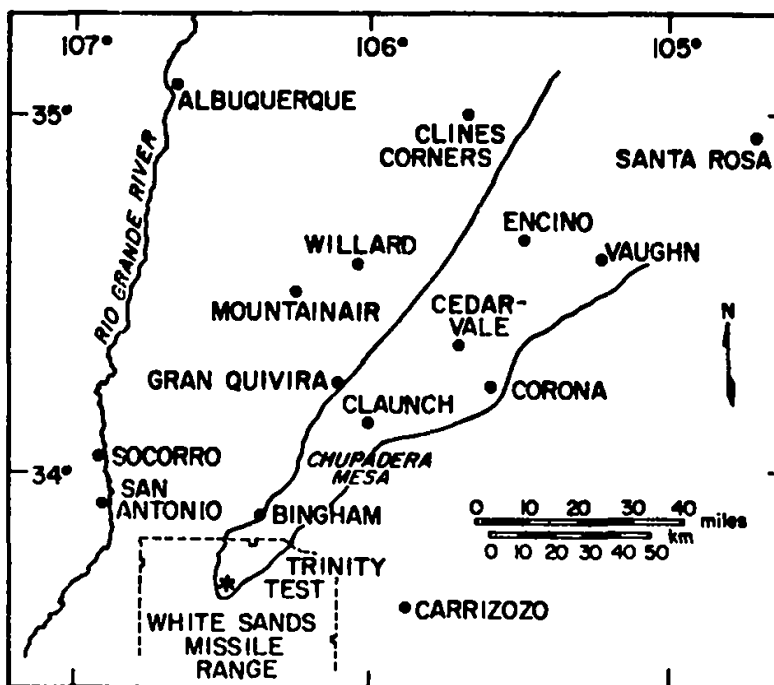


Figure 1. 1945 illustration of the Beta Scan Fallout Zone and Chupadera Mesa

Under FUSRAP, DOE reviewed records to determine if residual radioactive contamination might remain at former Manhattan Engineer District (MED) or U.S. Atomic Energy Commission (AEC) sites across the country. If the radiological conditions were uncertain, a radiometric survey of the area potentially influenced by the site was performed.

Multiple surveys had been performed for the Chupadera Mesa fallout zone. These included surveys immediately after the test in 1945, and studies by University of California, Los Angeles (UCLA) in 1948, 1950, and 1951. In 1973 and 1974, the U.S. Environmental Protection Agency (EPA) carried out an extensive surface soil sampling program for plutonium in the area. The EPA study also included air samples from air sampling stations located on Chupadera Mesa and in the vicinity of Socorro, New Mexico. Starting in 1972 and continuing until 1979, Los Alamos Scientific Laboratory conducted special ecological studies of the movement of cesium-137 and plutonium isotopes on study plots on Chupadera Mesa and near ground zero (GZ). DOE conducted additional sampling and analysis of soils at GZ.

In 1985, DOE evaluated historical files and special studies for the Trinity Site under FUSRAP. The evaluation concluded that the Chupadera Mesa site satisfied the criteria for inclusion into FUSRAP but no remedial action is required.

### **Documentation for Inclusion of the Chupadera Mesa, NM, Site into FUSRAP**

In addition to the November 1985 report mentioned above, the following correspondence documents the history of the inclusion of the Chupadera Mesa site into FUSRAP. The documents are attached to this summary:

- A 1978 letter from UCLA (signature page unavailable) to Jack R. Roeder, DOE Albuquerque Operations Office included Chupadera Mesa as a FUSRAP Site.
- In a 1980 letter from Andrew Wallo III to Dr. William E. Mott, Mr. Wallow indicates the Chupadera Mesa site was contaminated with radioactive residues resulting from the MED/AEC Trinity Test at White Sands Missile Range.
- In 1984, Wayne Hanson, of Environmental Surveillance, wrote to E. L. Keller, of the DOE Technical Support Division, stating that a 1984 survey was sponsored by the DOE FUSRAP program.
- A 1987 listing of the FUSRAP sites indicates that remedial action was determined to not be necessary at the Chupadera Mesa Site.
- In the 1997 Memorandum of Understanding between DOE and the U.S. Army Corps of Engineers, Chupadera Mesa is included as a completed FUSRAP site.

### **Conclusion:**

The Chupadera Mesa, NM, Site is a FUSRAP site that required no further action.

## Summary of FUSRAP Inclusion Determination Conducted in November 1985

The following is excerpted from Los Alamos National Laboratory, *Radiological Survey and Evaluation of the Fallout Area from the Trinity Test: Chupadera Mesa and White Sands Missile Range, New Mexico*; LA-10256-MS, June 1985, FUSRAP Document Number NM.04-3:

In order to determine if a site can be considered for remedial action the Department of Energy assesses each site on the basis of five questions. The following is a summary of the Department of Energy FUSRAP questions and answers to those questions concerning the Chupadera Mesa, NM Site:

1. *Was the site or operation owned by a DOE predecessor or did a DOE predecessor have significant control over the operations?*

Though not owned by any DOE predecessor, the Chupadera Mesa and surrounding areas were contaminated as a result of the Trinity Atomic Bomb test which was conducted by the Manhattan Engineer District (MED) a DOE predecessor. The MED had complete control and responsibility for the test.

2. *Was a DOE predecessor responsible for maintaining or ensuring the environmental integrity of the site?*

Yes. The MED was responsible for the test and safety issues associated with it.

3. *Is the waste, residue, or radioactive material on the site the result of DOE predecessor-related operations?*

Yes. While fallout from other nuclear tests was identified on the Mesa areas, an increment of the radioactive material identified was related to the MED test.

4. *Is the site in need of further clean up and was the site left in unacceptable condition as a result of DOE predecessor-related activity?*

No. All radiation levels and concentrations of radioactive material for the Chupadera Mesa Site were determined to be within those limits allowed under applicable standards and guidelines. Associated doses and risks from the residual radioactive material were within the condition known to be As Low As is Reasonably Achievable (ALARA).

5. *Did the present owner accept responsibility for the site with knowledge of its contaminated condition and that additional clean up or remedial measures would be needed to make the site acceptable for nonrestricted use by the general public?*

Not Applicable. The site does not require remedial measures or further clean up as determined by the results of the previous investigative activities.

In summary, the Department has found that there is authority under the Atomic Energy Act of 1954 as amended to conduct any needed remedial actions at this site; however, none appear warranted.

# Los Alamos

Los Alamos National Laboratory  
Los Alamos, New Mexico 87545

DATE: April 19, 1984  
IN REPLY REFER TO: HSE8-84-271  
MAIL STOP: K490  
TELEPHONE: (505) 667-5021

E. L. Keller, Director  
Technical Support Division  
Oak Ridge Operations  
U.S. Department of Energy  
P.O. Box E  
Oak Ridge, TN 37830

Dear Lee:

Enclosed for your review and comment is a draft report on the radiological survey results for Trinity Site and Chupadera Mesa, New Mexico. The report discusses the radiological significance of measurements made of the fallout zone residual from the Trinity test in central New Mexico. The work was sponsored by the Department of Energy Formerly Utilized Sites Remedial Action Program (FUSRAP).

Any comments you have can be forwarded to me by May 20, 1984. If you have any questions, please call me at FTS 843-5021 or (505) 667-5021.

Sincerely,



Wayne R. Hansen  
Group Leader  
Environmental Surveillance

WRH:les  
Enc. a/s

Cy: Arthur J. Whitman  
Division of Remedial Action Programs  
NE-24  
U.S. Department of Energy  
Washington, DC 20545

Skip Harrell  
SWFTL-R  
U.S. Army Corps of Engineers  
P.O. Box 17300  
Ft. Worth, TX 76102

Commander  
McAfee U.S. Army Health Clinic  
Attn: George Wenz  
White Sands Missile Range  
New Mexico 88002

J. Aragon, HSE-DO, MS P228  
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J. C. Rodgers, LS-6, MS K495

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THE AEROSPACE CORPORATION



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7848-02.80.aw.05  
6 February 1980

Dr. William E. Mott  
Director  
Environmental Control Technology  
Division  
U.S. Department of Energy  
Germantown, Maryland 20767

Dear Dr. Mott:

STATUS - NOTIFICATION OF NEED OF REMEDIAL ACTION

This is to indicate for the record that Aerospace has submitted all back-ground material necessary for the transfer of a total of 17 sites from the FUSRAP survey activity to the remedial action activity. The sites and their status are:

- Gillman Hall - NE notified
- Conserve, Inc. - Draft notification prepared
- Gardinier, Inc. - Draft notification prepared
- Palos Park, Site A/Plot M - NE notified
- Mallinckrodt, Inc. - Draft notification prepared
- St. Louis Airport Site - NE notified
- E.I. Dupont & Co., Chambers Works - Draft notification prepared
- Kellex Corp. - NE notified
- Middlesex Landfill - Draft notification prepared
- Middlesex Sampling Plant - NE notified
- Bayo Canyon - Draft notification prepared
- Ashland Oil Co. - NE notified
- Linde Air Products - Draft notification prepared
- Seaway Industrial - NE notified
- Seneca Army Depot - Draft notification prepared
- Guterl Special Steel Corp. - Draft notification prepared and
- Clecon Metals, Inc. - NE notified

Presently, these 17 sites are the only ones where sufficient data exists for NE notification.

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GENERAL OFFICES LOCATED AT: 2580 EAST EL SEGUNDO BOULEVARD, EL SEGUNDO, CALIFORNIA

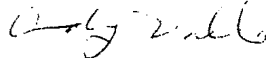
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However, materials have been submitted to Dr. Whitman of your staff showing that preliminary results and surveys indicated the following 13 sites are contaminated with radioactive residues resulting from MED/AEC activities:

The Former Blockson Chemical Co., Joliet, Illinois  
The Illinois National Guard Armory, Chicago, Illinois  
The University of Chicago, Chicago, Illinois  
Iowa State University, Ames, Iowa  
The Davidson Chemical Division, W. R. Grace & Co.,  
Curtis Bay, Maryland  
The Former Metals Hydrides Corporation (Ventron  
Corp.), Beverly, Massachusetts  
The Shpack Landfill, Norton, Massachusetts  
The Watertown Arsenal, Watertown, Massachusetts  
Acid/Pueblo Canyon, Los Alamos, New Mexico  
Chupadera Mesa, White Sands Missile Range, New Mexico  
The Harshaw Chemical Company, Cleveland Ohio  
The Albany Metallurgical Research Center, Albany,  
Oregon, and  
Universal Cyclops, Inc., Aliquippa, Pennsylvania

It is my understanding that in order to expedite legislation, NE is to be notified of these preliminary findings by a letter from you to Mr. Ramsey, but that the notification procedure previously followed is to be continue for these sites. Aerospace will, therefore, continue to prepare the required background data for NE notification as it is available. If you have any questions or additional guidance regarding this subject, please contact me.

Very truly yours,



Andrew Wallo III  
Environmental Controls and  
Analysis Directorate  
Eastern Technical Division

AW:jmp

cc: L. Brazley  
J. Counts  
C. D. Jackson  
D. D. Mayhew  
A. Whitman

bcc: A. D. Abbott  
J. Dock  
F. Hoch  
T. Iura  
R. Johnson  
W. McNulty  
F. Newman  
S. Rosenzweig  
C. Young

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IN REPLY  
REFER TO: H8-78-333  
MAIL STOP: 400

May 4, 1978

Mr. Jack R. Roeder, Director  
Operational Safety Division  
Albuquerque Operations Office  
US Department of Energy  
P.O. Box 5400  
Albuquerque, NM 87115

Dear Mr. Roeder:

In response to your letter of April 25, 1978, we concur with your suggestion that all correspondence and reports on the Formerly Utilized Site Program be transmitted to your office for subsequent transmittal to Aerospace Corporation and, presumably, to ECT personnel at Headquarters. In general, the resurvey projects on the four sites assigned to LASL are in various stages of report preparation, with all field work, sampling, and laboratory analyses completed. The following paragraphs provide a bit more detail and indicate currently anticipated target dates for submitting first-draft reports for DOE review.

Status of FUSRAP Projects at LASL  
as of 1 May 1978

1. Portions of Acid-Sewer Line in Los Alamos Townsite

Approximately 1300 ft of abandoned industrial waste line formerly used to carry radioactively contaminated liquid waste from LASL technical areas to a waste treatment plant were removed in 1977. Some decontamination was necessary particularly in association with manhole structures. The removal and decontamination were carried out with special funding. Four more short sections of abandoned waste line are known to remain under paved roads in the Los Alamos townsite. These sections are scheduled for removal in connection with an approved line-item project to remove other contaminated waste lines on DOE land at LASL, with work anticipated to start in FY 1979.

The report on the work carried out in 1977 is currently undergoing review at LASL, with an anticipated mid-June target for submitting the draft to ALO for DOE field and Headquarters review.

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TO: Mr. Jack R. Roeder

-2-

DATE: May 4, 1978

2. Bayo Canyon (TA-10)

All field work, sampling, in-situ measurements, and laboratory analyses have been completed. Data compilation and evaluation are in final preparation for report appendixes. Interpretation and evaluation are in rough draft form and will receive LASL Health Division review during the next few weeks. It is anticipated that the complete first draft will be submitted to ALO about mid-June for DOE field and Headquarters review.

3. Chupadera Mesa (Trinity Fallout Pattern)

All field work, sampling, in-situ measurements, and laboratory analyses have been completed. A minor amount of computerized spectral analyses performed by Lawrence Livermore Laboratory under subcontract are expected within a couple of weeks. Data compilation and evaluation are nearing completion. Interpretation of results and a rough draft of the report are expected to be completed within about six weeks, to be followed by LASL Health Division review. It is anticipated that the complete first draft will be submitted to ALO about mid-July for DOE field and Headquarters review.

4. Pueblo Canyon (Includes TA-45 and Acid Canyon)

All field work, sampling, in-situ measurements and laboratory analyses have been completed. Preliminary data compilation and evaluation have been completed. Interpretation of results and a rough draft of the report are expected to be completed within about six weeks, to be followed by LASL Health Division review. It is anticipated that the complete first draft will be submitted to ALO about mid-July for DOE field and Headquarters review.

We would like to request clarification on two points in the minutes of the January 31, 1978, meeting.

The first question relates to Action Item 5 on page 3 of the minutes under the "Middlesex and Cannonsburg" discussion. We understood the direction at the meeting to be that no data or information on any resurvey site, including those assigned to us, were to be given out except through ECT. Does the policy apply to all sites, or only to the Middlesex and Cannonsburg locations?