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LOS ALAMOS SCIENTIFIC LABORATORY
OF THE UNIVERSITY OF CALIFORNIA ○ LOS ALAMOS NEW MEXICO

TA-10 BAYO CANYON CLEANUP

May 1963

SCANNED



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LOS ALAMOS SCIENTIFIC LABORATORY
OF THE UNIVERSITY OF CALIFORNIA LOS ALAMOS NEW MEXICO

REPORT WRITTEN: July 1963

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TA-10 BAYO CANYON CLEANUP

May 1963

by

W. Clarence Courtright

Contract W-7405-ENG. 36 with the U. S. Atomic Energy Commission

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OFFICE MEMORANDUM

TO : Roy Reider, Safety Director

DATE: July 10, 1963

FROM : W. C. Courtright, Safety Engineer

SUBJECT: TA-10 BAYO CANYON CLEANUP

SYMBOL : H-3

When the decision was made to abandon TA-10 as a Laboratory facility, several meetings were held during February and March, 1963, regarding the steps necessary to clean up the area. Attendees at these different meetings included representation from ENG-DO, ENG-3, ENG-4, GMX-DO, GMX-5, H-DO, H-1, H-3, LASL, and Project Support Branch, LAAO.

It was agreed that an attempt should be made to return the entire site to its original condition, if possible, in order to be able to allow the public access to the area with no restrictions.

One of the hazards that existed was the possibility of undetonated explosives lying on the ground around the firing pads that had been used for experiments involving explosives. It was suggested by E. E. Wingfield, Project Support Branch, LAAO, that Indian Forest Fire Fighting Crews be obtained through the Forest Service to search the area for any undetonated explosives. Indian crews had been used recently quite successfully by the local AEC for searching old military firing ranges for potentially hazardous items.

It was agreed that the area should be searched, that Indian crews would be used, and the LASL Safety Group, H-3, would be in charge of this portion of the cleanup. This was done as outlined in the attached report.

The conclusions reached as a result of the search activity are:

1. The possibility of any loose explosives and explosive items still existing in the area searched is believed to be zero.
2. The number and size of the souvenir type of items in the area was reduced to a level where the public should not be attracted to the area for the purpose of souvenir hunting.
3. Because of excavating work this search did not include the immediate areas around structures TA-10-1, 3, 4, 5 and 21. The rest of the area which was included in this search can be considered free of hazardous levels of radiation for the public.

Roy Reider, Safety Director

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July 10, 1963

4. The areas for 750 foot radius around TA-10-13 and TA-10-15 should be searched again in the spring of 1964 to clear the area of significant metal debris which may be uncovered by the weather.
5. From the standpoint of this operation's responsibility of searching for explosive, radioactive contaminated objects, and other possible hazardous objects on the ground surface, the area can safely be opened to the general public.

W. Clarence Courtright
W. Clarence Courtright
Safety Engineer

WCC:jn

cc: ENG-3 (2)
GMX-DO
H-3
Project Support Branch, LAO
Mail and Records

TA-10 BAYO CANYON CLEANUP

May 1963

The following is a report of the plans, preparation and completion made by W. C. Courtright as the H-3 representative for searching and clearing the ground around the two firing pads, TA-10-13 and TA-10-15 at Bayo Canyon.

1. Visit to the site location indicated that in addition to looking for explosives considerable "shot" debris should also be picked up as it created an "attractive nuisance" for the public to collect as souvenirs (see photograph 4).
2. Discussion with GMX-DO, GMX-5, and inspection of the site resulted in a decision to search and clear an area 2500 feet in radius from both firing points. Calculations indicated and inspections of the sites revealed that the maximum fragment range should be about 2000 feet and it was decided to add 500 feet to cover unknowns.
3. Arrangements were made through the Project Support Branch, LAAO, to obtain the services of two 13-men Indian Fire Fighting Crews. Project Support Branch made the arrangements through the U. S. Forest Service Headquarters in Santa Fe. They were requested for a two-week period starting May 1, 1963. This was later extended one week in order to do a more thorough job.
4. Necessary housing, feeding, bedding, and transportation were arranged for the crews by a work order from ENG-4 to the Zia Company (attachment #1).
5. ENG-3, LASL, made maps of the area to be searched and staked out the 2500 foot boundaries in the field for guide lines (attachment 2).
6. Since the shot debris was considered radioactively contaminated, plans for the search and pickup were coordinated with Group H-1, LASL.
7. After some field tests by H-1, it was agreed that full protective clothing was not necessary. Film badges would be worn by all personnel and gloves would be provided to the workers to protect them against cuts and possible contamination.
8. An SOP was written and approved by H-3, H-1, GMX-DO, GMX-5, ENG-3 and ENG-4 (see attachment 3). These procedures later proved to be quite adequate and were followed without known deviation.
9. A meeting was held with H-3, H-1, Project Support Branch and the Zia Field Superintendent to coordinate all the needed equipment and supplies. Zia furnished gloves, canteens, water cans, burlap bags, four-foot stakes, flagging, and a four wheel drive power wagon.

10. The following arrangements were made for taking care of the Indian crews:
 - a. Sleeping bags from U. S. Forest Service (they were dry-cleaned before they were returned).
 - b. Housing in old dorm at 1392 Iris Street.
 - c. Breakfast and dinner at Pierotti's Soda Bar and a sack lunch provided by the Soda Bar.
 - d. Transportation to and from pueblos by Zia Company bus approved by SP-DO.
 - e. Transportation to and from TA-10 by Zia Bus.
 - f. Paying them in cash at the end of each work week.
11. The Indian crews arrived at Los Alamos on Monday, April 29, 1963, and spent two days searching the old military firing ranges under the supervision of the local AEC (attachment #4). There were two crews of 12 men and a crew leader. One crew was from the Zia Pueblo headed by Crew Leader Jose A. "Tony" Lucero and the other from the Jemez Pueblo headed by Crew Leader Augustine Toya. The crews were organized into two teams each headed by a straw boss (see attachment #5 for team members).
12. An orientation meeting was held at the LAAO Conference Lounge at 0800, May 1, 1963. This meeting was conducted by H-3 with assistance from H-1, in accordance with Part V of the approved SOP (attachment 3). The crew leader from each pueblo interpreted for the crew members. Samples of explosives, radioactive contaminated objects and general shot debris were shown to the group. Crew members were issued film badges at this time by H-1.
13. The members of the search crews and all supervisors were taken to TA-27 and shown some examples of explosives lying on the ground that had been exposed to the weather.
14. Actual work at TA-10 got under way at 1030, May 1, 1963 and continued until 1500 on May 22, 1963. Eight and one-half hours of time were spent each day at the field location with a one hour break for lunch. Exceptions were the beginning and end of the week when two hours were used for traveling from or to the pueblos. The Indians put in about 2925 man-hours of actual searching and picking up materials (see photographs 3 and 8).
15. The work proceeded very slowly as the amount of shot debris that was encountered was tremendous and very slow, tedious and difficult to pick up. Small copper wires and wood splinters were the most time consuming. The amount of debris reduced as the distance from the firing pad increased and after about 300 feet there was a big reduction in the amount of debris (see photographs 7 and 4).

16. No explosives or highly radioactive materials were found close to the firing pads. It was found, however, when several bags of materials were piled together a count could be obtained of from .1 mr to 1 mr. The wooden scrap pieces, such as plywood, had the higher readings (see photograph 13).
17. A significant find (worth the entire operation) was found on the third day, May 3, when 32 MK-43 igniters were found (see photographs 11 and 10). These were found in a slight depression in the ground on the south side of an abandoned road about 150 feet north and 150 feet west of TA-10-11 (see photograph 1). About half of them were completely covered by an inch or more of soil while the others were completely or partially exposed. They had a date of 6-50 stamped on them and possibly were left in an old detonator storage box, which was later removed without the contents. They apparently were used for some blast door closing experiments by J-Division. These were the only explosives found during the search.
18. Twelve pieces of tuballoy were found by the searchers, all at different locations; however, most were found in a general area 300-400 feet south of the firing pad at TA-10-15 (see photograph 12). The total weight of these pieces was 23-1/2 pounds.
19. In the heavily contaminated area, the searchers walked elbow to elbow, and used sticks to probe the ground. This was necessary because of the large number of small pieces of debris and many being partially covered with soil. The material they picked up was placed in burlap bags or on nearby piles (see photographs 7 and 14).
20. In the areas of less debris, the searchers spread out from 5-15 feet between themselves. All of the debris at distances of more than 1000 feet radius was made up of quite large pieces. (See photographs 9 and 8.)
21. The burlap bags of collected material were placed at convenient locations and where they could later be picked up by dump trucks. Items too large for the bags were placed on the piles loose (see photographs 13 and 14). Twelve hundred and fifty burlap bags were used in the operation and some of the bags were used more than once.
22. Coordination was made with the Zia Company labor foreman for the Zia labor crew to gather up the piles of collected debris and haul them away by dump truck (see photograph 15).
23. All collected material was taken to the contaminated dump on Mesita Del Buey and buried (see photograph 16). The material was covered by a tarp during transit for the 10 mile drive from TA-10 to the dump. The total amount of debris gathered up by the Indian crews amounted to about 90 truckloads.

24. The crews were transported from the work area to Building TA-10-1 for lunch and at the end of the work day by pickups. The Zia Company bus delivered them from their dorm to Building 1 and picked them up there at the beginning and end of each day. Their hands and shoes were monitored and they were instructed to wash up before eating. In addition, at the end of the work week their clothes were monitored. No contamination was found during any of these checks.
25. The furthest fragment, or piece of debris, a lead ring from a detector head, weighing about one pound, was found about 2150 feet NNW from TA-10-13 in Barrancas Canyon.
26. After the original pass by the Indian crews near the firing pads a gasoline powered magnet, "Nail Picker", was pulled over the area. It was only moderately successful since it was quite heavy and hard to pull in soft ground, and of course it would not pick up copper or aluminum. When passing over tall grass or shrubs, the collected material would be rubbed off and any ditches or depressions would make the machine high center and also scrape off the collected items. However, on level, solid ground, it would collect considerable amounts of ferrous metal.
27. The materials found beyond about a 1000 foot radius was usually heavy and thus fairly large pieces. Several pieces were found at the upper base of the south cliff of Otowi Mesa, apparently from striking the side of the cliff during flight and falling to the base.
28. An interesting find was two deer heads and antlers tangled together by old firing cable wire. They were found about 800 feet SW of TA-10-15 (see photograph 17).
29. Covering some of the terrain was quite difficult, but all the area within the 2500 foot radius circles (see attachment 1), except the vertical walls of the cliffs, was covered by foot (see photographs 1, 6, 8 and 9).
30. It was found necessary in the area of high debris concentration to go over it more than once. As the ground was disturbed more small pieces of metal debris would appear. One small rain shower occurred one night during the operation and more pieces were uncovered in the area which had been searched. The area of highest concentration, which was about 200 feet south of TA-10-15, was gone over four times.
31. Many people worked on this project and were of considerable assistance. Those closely associated were E. G. McAndrew, H. C. Pickens, Project Support Branch, LAAO, AEC; H. E. Houtz, Jr., GMX-5; A. J. Montoya, H-1; W. C. Courtright, H-3, LASL. Special comment is due the Indian crews. They were very cooperative, followed instructions and did a quite thorough job. A list of most of the personnel involved is shown in attachment 5.
32. The total direct costs for the job totaled \$11,063.00. This does not include the Zia Company's charges for the work of hauling off the collected debris.

Los Alamos Scientific Laboratory
Work Order

For security clearance, coordination & changes on this order the Eng-4 engineer must be contacted.

Date 4-27-63 J. O. NO. _____
 LOCATION & STRUCTURE TA-10, Bayo Canyon LAB JOB NO. 2884-10 WORK ORDER NO. _____
 ENGINEER & PHONE NO. Stallings, 7-4888 ESTIMATE \$ _____ ACCOUNT NO. _____

HEALTH CLEARANCE SAFETY OPERATING PROCEDURE
 N. H. P. H. H. YES NO YES NO PROJECT..NO.

| | |
|------------------|---------|
| Carpenters | 132/182 |
| Floor Crew | |
| Roofers | 132/182 |
| Painters | 133/183 |
| L. M. & R. | 134/184 |
| Ironworkers | |
| Riggers | 135/185 |
| Tinners | 136/186 |
| Fitters | 137/187 |
| Refrig. Crew | 137/187 |
| Insulators | 137/187 |
| Sprinkler Crew | 137/187 |
| Electricians | 138/188 |
| Janitorial | 140/141 |
| Supply & Transp. | |
| Electric Utility | 161/191 |
| W. G. & S. | 162/190 |
| Engineering | 164 |

SUBJECT: Use of Indian crews in the Bayo Canyon cleanup program

Provide the necessary support services to the program of cleaning metal fragments and similar debris from the Bayo Canyon area with Indian crews. This support activity will include such things as bus transportation to the Indian Pueblo, and to and from the work site and Los Alamos, meals for Indians, janitor service for the building housing the Indians, a truck and driver to pick up and return sleeping bags from the Forest Service warehouse, rest room supplies, wood lath, rolls of surveyor's marking ribbon, gloves, replacement of articles of personal clothing or shoes which may become accidentally contaminated to the degree that H-1 will certify they should be destroyed, any similar unforeseen materials and services related to the cleaning program and drivers for LASL furnished trucks.

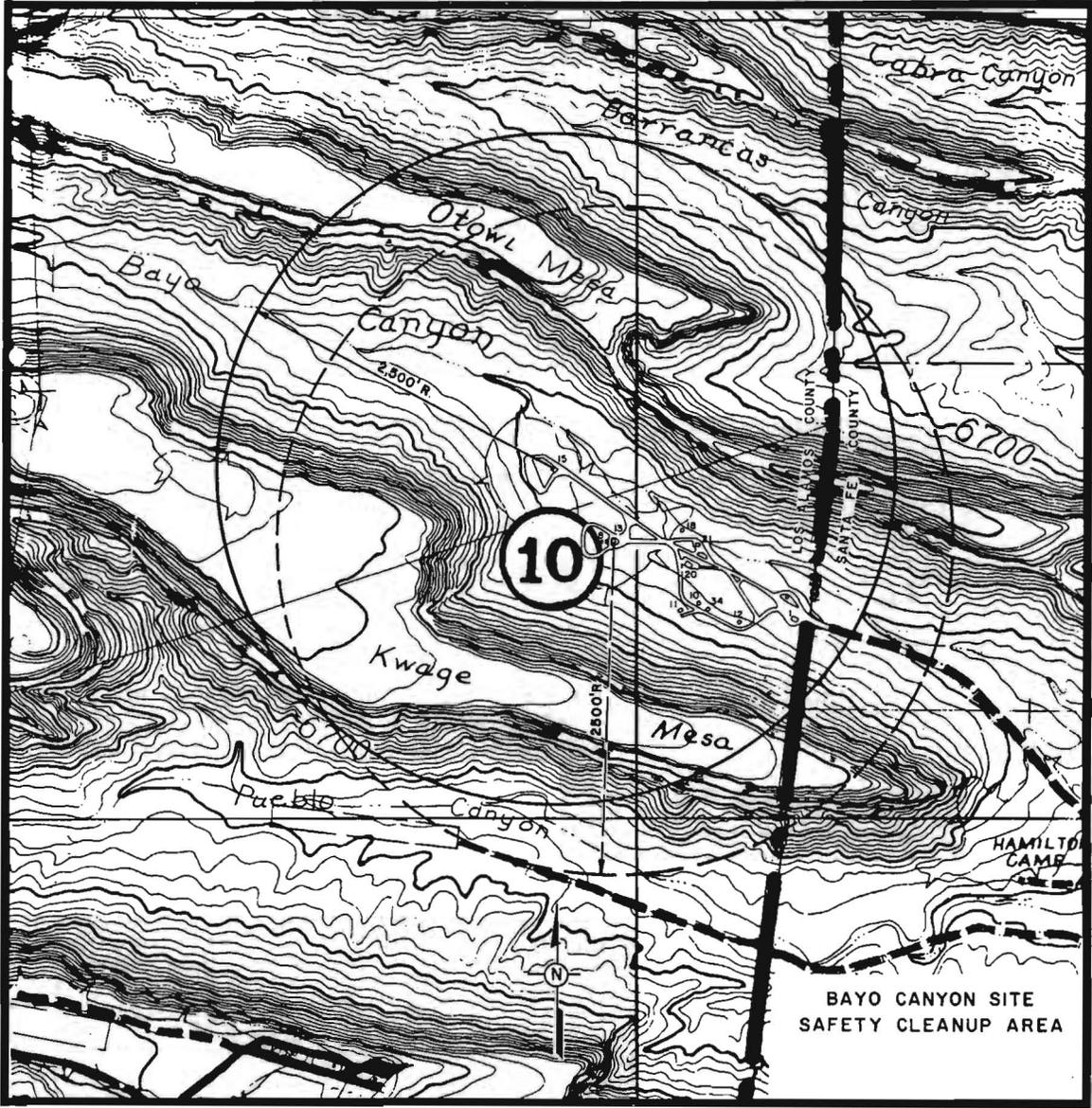
This order also covers payment of the Indians' wages in accordance with the rate schedule of the U. S. Forest Service for organized fire crews which will be furnished.

The coordination and supervision for above work will be by Homer C. Pickins of AEC and/or W. C. Courtright of H-3, LASL.

Pending availability of Indian crews schedule this work to begin 5-1-63.

H & S: Work to follow special S.O.P. written for this job, and which will be provided by LASL H-3 prior to start of work.

| | | | | | | | | | | |
|------------------|--|--|--|--|--|--|--|--|--|-------------------|
| Date | | | | | | | | | | Approved |
| Cost Center | | | | | | | | | | <i>CAETAKU</i> |
| Hrs. Approved | | | | | | | | | | Dispatched |
| Actual | | | | | | | | | | 4-24-63 |
| Authority | | | | | | | | | | Work Order Number |
| Overrun Approval | | | | | | | | | | 6-5504-64 |
| Type | | | | | | | | | | |



IASL

Groups H-3 and H-1

STANDARD OPERATING PROCEDURE COVERING THE LOCATING AND REMOVAL OF
SCRAP EXPLOSIVES AND RADIOACTIVE CONTAMINATED OBJECTS FROM TA-10,
BAYO CANYON SITE

I. SCOPE

This procedure covers the work of searching, locating, collection and removal of foreign material from TA-10, Bayo Canyon Site. The material will include pieces of scrap explosives, pieces of radioactive materials, items contaminated with explosives and/or radiation and other items foreign to the natural state of the area. The purpose of this activity is to remove all hazardous items from the area and all other items that attract interest to the area. The results will make the area safe to the general public as well as remove the interest for curiosity seekers.

II. AREA OF COVERAGE

The area to be covered is within the normal fenced and accepted area of TA-10 and an area encompassed by a circle 2,500 feet radius from Control Buildings TA-10-15 and TA-10-13.

III. LIMITSA. Personnel

The number of personnel engaged in conducting the search will be limited to thirty-five (35). The number of personnel engaged in loading and hauling the collections of hazardous materials from TA-10 will be limited to five (5). The personnel limit for any operations at Building TA-10-11 will be five (5).

B. Explosives

1. Building TA-10-11 (Magazine): 100 pounds.
2. Collection Points in Search Area: 10 pounds.
3. Individual Searchers: five pounds or two hours collection (whichever is lower).

C. Radioactive Materials

1. Two hours collection.

IV. EQUIPMENT

A. Protective

1. All searchers and handlers will wear leather palmed gloves.
2. Every two searchers will have one plastic bag and one cloth bag. (Plastic for explosives, cloth for other foreign items.)
3. Those personnel handling and removing explosives from the collection points to the storage magazine and from TA-10 will wear eye protection.
4. Film badges will be worn by all personnel.
5. All personnel will wash hands thoroughly before eating and/or leaving the area.

B. Other

1. Four-foot stakes and flags
2. Cardboard boxes
3. Explosive truck (furnished by LASL)
4. Radioactive trash truck (furnished by LASL)
5. Counters (furnished by LASL)

V. PREPARATION

- A. An orientation meeting will be conducted by Groups H-3 and H-1 in the Conference Room of HRL Building prior to beginning the job.

Other groups to be represented

1. Searchers and immediate supervisors (Indian crews)
2. GMX-DO and GMX-5
3. ENG-3
4. ENG-4
5. Project Support Branch, AEC, LAAO

Items to be Covered

1. Scope, purpose and procedure of the job.
2. Description and samples of items to look for and pick up.
3. How to cover the area.
4. How to handle the hazardous material that is found.
5. Smoking.
6. Clean-up and decontamination of personnel.
7. Removing material from collection points.

VI. PROCEDURE

A. Searching

1. The searchers will start at a given point and use a systematic method of completely covering the area described in Paragraph II above and shown on the map entitled "Bayo Canyon Site Safety Clean-up Area." The exact method will be determined in the field.
2. Areas covered and locations where breaks are taken for lunch, overnight or other reasons will be marked with temporary stakes or other markings.
3. Careful searching will be done for any pieces of explosives.
4. All items, whether metal, plastic, wood or wire, foreign to the natural state of the area will be picked up.

B. Pickup

1. Any located pieces of explosives will be picked up and placed in a plastic bag. No other material will be placed in the same bag with explosives.
2. All pieces of other material will be placed in a cloth bag.
3. Items that are questionable will be marked by a temporary stake and a LASL person contacted for a decision.
4. Items that are too heavy or bulky to place in the bags will be marked by a temporary stake and the location noted for later pickup.

5. Convenient collection points will be established by IASL personnel where the bags of collected materials can be deposited as they are filled. The materials should be left in the bags and the collection points will be so located that a truck can drive to the location. The two types of collected materials will be kept separate.

C. Removing Collected Material

1. Each workday's collection of explosives will be picked up from the collection points and taken to Building TA-10-11 for temporary storage. When the load limit of Building 11 is reached and/or when the entire search has been completed GMX-3 will be requested by GMX-5 to remove and destroy all explosives in Building TA-10-11.
2. All other material will be picked up from the collection points by the Zia Company under the supervision of H-1 when convenient and taken to the contaminated burial pits on Mesita del Buey for disposal.
3. All temporary stakes will be removed when the job is finished.

D. Monitoring Personnel and Equipment

1. All searchers and handlers will be monitored before lunch or eating and at the end of each workday by H-1.
2. Trucks and other equipment will be monitored periodically and at the completion of the job by H-1.

E. Records

Engineering-3, IASL, will make permanent records of the areas searched and the types and general quantity of material picked up and removed. A copy of any report made regarding this job by any participating group shall be furnished to Group ENG-3, IASL.

F. Supervision

A representative of Group H-1 or H-3, IASL, will be present and supervise the search activities at all times.

Approved by: Roy Reider Date: April 26, 1963
H-3

Leo H. Chelina Date: April 26, 1963
H-1

Tom Make Date: 26 April 1963
GMX-DO

Thomas Godfrey Date: April 26, 1963
GMX-5

SE Ruson Date: April 26, 1963
ENG-3

EQ Reynolds Date: April 26, 1963
ENG-4

Distribution:

- (1) GMX-DO
- (1) GMX-5
- (4) H-1
- (2) H-3
- (4) ENG-3
- (1) ENG-4
- (2) SP-2, Dwight Clayton
- (2) Mail & Records
- (1) Dr. T. L. Shipman, H-DO
- (4) Project Support Branch, AEC, LAAO
- (6) Zia Tech Division, Henry Peabody

THURSDAY, MAY 2, 1963 PAGE 3



WORLD WAR II RELIC--A practice 2.36 (bazooka) rocket shell found in Rendija Canyon is explained by 1st Lt. Donald J. Westmaas, kneeling, right, of Ft. Bliss, to Jose Lucero, kneeling, left, Zia Pueblo crew leader, during semi-annual sweep of old firing ranges here. The old shell was harmless. Looking on as the different projectiles and missiles are explained are, left to right, Edward G. McAndrew, AEC safety engineer, Homer Pickens, AEC conservation division, S/6 James P. Smith and Sgt. Timothy Elmer, of Ft. Bliss, and Augustine Toya, Jemez Pueblo crew leader. Members of the group hold fragments of other shells picked up during sweep. (Staff Photo)

Truckload Of Scrap

No Explosives Found By Demolition Searchers

A half-truck load of shell fragments, shrapnel and one or two harmless practice shells were found by an Army demolition crew and two parties of Zia and Jemez Indians here this week, but no live missiles were turned up by the searchers.

The group of 26 Indians and three Army men swept through the known impact areas of World War II firing ranges here in Pajarito Canyon, on Barranca Mesa and Rendija Canyon.

Fragments of 60mm and 80mm mortar shells, 37mm anti-tank shells and 2.36 (bazooka) rockets were located -- in addition to pounds and pounds of various other pieces of scrap metal.

The search is a semi-annual affair instituted by the AEC after the explosion of an old bazooka shell killed one child and injured four others here last July.

Headed by 1st Lt. Donald J. Westmaas, the Army detail included Sgt. Timothy Elmer and S/6 James P. Smith. The men were from the 133d Ordnance Detachment (Explosive Disposal) of Ft. Bliss.

The Zia Pueblo searchers were led by Jose Lucero and those from Jemez by Augustine Toya.

Lt. Westmaas, who, like his men, is a graduate of the crack Army demolition disposal school, had several warnings for Los Alamos residents.

The officer noted that the three areas searched are the ranges here. These sites, he said, were largely determined from the memories of employees who worked here during Army days at Los Alamos. It is possible, Westmaas said, there are other ranges whose locations have been forgotten.

And, he cautioned, recovery of all missiles from any given area is unlikely. "We hope to get the majority of them," he said, "but we can't get them all." He said many are buried and might lie undetected for years.

"These projectiles are not a hazard simply because they are there," Lt. Westmaas told the Monitor, "the hazard arises with people finding them and picking them up. If an ordnance relic--shell, bomb, rocket, anything that looks like it might have been fired out of a weapon, or could be exploded--is found, 'LEAVE IT ALONE.'"

Lt. Westmaas said any relics of this type should be turned over to local police who in turn will notify the Ft. Bliss detachment if necessary.

Police and firemen here have received schooling on demolition practices from Westmaas and his group on earlier visits here.

The three-day search concluded Wednesday and the Army detail returned to Ft. Bliss today.

Edward G. McAndrew, AEC safety engineer, and Homer Pickens, AEC conservation, accompanied the searching parties.

LOS ALAMOS, NEW MEXICO THURSDAY, MAY 2, 1963

Indian Searchers

A crew of 26 Zia and Jemez Pueblo Indians sweep through Rendija Canyon, over an old World War II impact area, here Tuesday. The Indians were led by an Army demolition disposal team from Ft. Bliss during the three day search of Pajarito, Rendija and Barranca Mesa, all old firing ranges. The quest for dangerous, explosive relics turned up only a truckload of scrap metal and harmless practise shells. A semi-annual affair, the search of known impact areas was instituted by the AEC last July after the fatal explosion of an old bazooka shell. See story on page 3. (Staff photo)



Personnel Involved or Directly Assisting in Cleanup of TA-10

Bayo Canyon

May, 1963

LASL

ENG-DO: J. Bolton

ENG-3 : S. E. Russo
J. A. Sizer
B. E. Williams
H. A. Hidy
L. C. Speer
H. E. Williams, Jr.

ENG-4 : C. A. Reynolds
J. C. Konrad
C. C. Stallings

GMX-DO: R. W. Drake

GMX-5 : D. W. Mueller
T. N. K. Godfrey
H. E. Houtz, Jr.

GMX-7 : J. G. White, Jr.

H-DO : T. L. Shipman

H-1 : D. D. Meyer
C. D. Blackwell
A. J. Montoya
F. Babich
B. B. Riebe

H-3 : R. Reider
C. A. Burch
W. C. Courtright

SP-2 : R. G. Harvey

W-3 : D. L. Winchell

ZIA COMPANY

W. P. Junge
E. L. Lujan
H. Peabody
J. J. Gutierrez
E. V. Chavez
T. J. Cook
C. C. Carmichael

LOS ALAMOS AREA OFFICE, AEC

E. E. Wingfield
E. G. McAndrew
A. C. Pickens

JEMEZ PUEBLO

A. Toya
P. Sabaque
J. F. Armijo
J. P. Gachupie
L. Tsosie
R. Toya
W. J. Sandia
G. W. Casiquito
T. Gachupin
A. Fragua
F. F. Fragua
G. A. Toya
J. R. Loretto
Albert Yepa
Alonza Yepa
J. R. Gauchupin
J. Toledo

ZIA PUEBLO

B. R. Pino
J. A. Lucero
F. Delgarito
T. Shiye
A. Galvan
J. Galvan
T. Gachupin
P. Salas
B. Salas
D. Galvan
J. I. Medina
J. H. Shiye
R. Shiye

UNIVERSITY OF CALIFORNIA
LOS ALAMOS SCIENTIFIC LABORATORY
(CONTRACT W-7403-ENG-36)
P.O. Box 1663
LOS ALAMOS, NEW MEXICO

IN REPLY
REF ~~Dia~~

July 18, 1963

Mr. C. C. Campbell
Area Manager
Los Alamos Area Office, A.E.C.
Los Alamos, New Mexico

Dear Mr. Campbell:

The return of Bayo Canyon to AEC jurisdiction presents some problems which do not exist in many other areas. As you are aware, this Site, TA-10, was used from the very early days of the Laboratory until about two years ago as a firing site. During this period there were numerous HE detonations, most of which contained in the explosive assembly a lanthanum-140 source. In the more recent years these sources not infrequently amounted to several thousand curies. Although lanthanum has a relatively short life, all of these sources contained a small but unavoidable amount of contamination with strontium-90. It is easy to see that much of the canyon area became very slightly contaminated with this beta-emitting material.

In the early days these sources were prepared in the canyon in what was known as the Chem Shack. Much of this building, several surrounding buildings, much of the plumbing, and a number of waste pits were more heavily contaminated, principally with strontium-90.

The decision to discontinue all Laboratory operations in Bayo Canyon and to clean the area up so that it could be returned to AEC without restriction was made last spring. I will not go into the details of the cleanup operation at this time except to point out that most of the work was done by Zia workmen with supervision from the Laboratory's Engineering Department and from the Health Physics and Safety groups of the Health Division. At one period a crew of over 25 Indians from Zia and Jemez Pueblos was used in a sort of scavenger hunt. They crossed and crisscrossed the area picking up all exposed objects which they could find, which surprisingly enough amounted to a total of 90 dump truck loads of trash.

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The cleanup process is now complete. All structures have been completely removed with the exception of the cement pad on which rested an uncontaminated machine shop. All underground piping was removed and contaminated waste pits and contaminated burial pits were completely dug up with the material removed to the contaminated burial area on Mesita del Buey. In excess of 550 dump truck loads were removed in this part of the operation. Digging around these underground structures was continued until approval to stop was given by group H-1. All excavations were backfilled and the area in general was bulldozed smooth. A few small uncontaminated wooden structures were burned. All concrete structures connected with the firing pads had to be dynamited. All in all there was a very definite attempt to return the entire area as closely as possible to the condition it was in before we took it over.

Realizing that no cleanup operation of this sort could give a guarantee of 100% perfection, I named a group to inspect the area and report back to me. This inspection was carried out on Tuesday, July 16, 1963. The inspection party consisted of Thomas L. Shipman, Health Division Leader; Robert W. Drake, CMR-DO; Henry Heyman, D-DO, W. T. Aldrich, D-4; John Bolton, Engineering Department Head; and C. A. Reynolds, Eng-4. They were accompanied by Mr. E. G. McAndrew, Project Support Branch, LTRD. It is the opinion of this group that this area may now be returned to the AEC with no restrictions whatsoever as to the use that may be made of it in the future. There is no reason to feel that it cannot be used as a picnic ground, for home sites, or any other purpose. It should be pointed out, however, that this by no means implies that the area is 100% free of artifacts left behind by CMR-10 and GMX-5. The heavy rain of ten days ago uncovered a number of objects which previously had been completely buried under the sand and had escaped detection.

For the most part these objects are small bits of torn and twisted metal which can be found in the area surrounding the firing pads. If one should gather together a bushel or two of these things it would be possible to detect a very slight amount of radioactivity with a sensitive instrument, but the amount of radioactive contamination piece by piece is too small for detection. These would not represent hazards if picked up and taken home by a child.

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In the vicinity of the waste pits, 15 feet or so below the surface, detectable activity can also be found, but as there is no subsurface water motion in the entire area this obviously presents no problem. No water wells will ever be drilled in this area unless someone is prepared to go down many hundreds of feet.

It is our considered opinion that any further attempts to clean the area would represent a waste of time and money. If complete cleaning up, practically to the point of sterility, were demanded, it is questionable whether we could ever turn the area back. We realize the fact that there is a mathematical risk that a child might cut himself on a piece of scrap metal, but it seems obvious that this is not nearly as great as the natural risks which are inherent in the area, such as falling from trees, or cliffs, or being bitten by a rattlesnake. It would seem prudent, however, at the time of the transfer of this Site to issue a press release to the effect that we are well aware of the fact that small bits of trash can still be found in many parts of the Site and that these are no more dangerous than any sharp object, such as pieces of broken glass.

The passing of TA-10 into history leaves many of us with mixed emotions. The work done in that area made a very real contribution to the Laboratory's weapon program, while at the same time posing many problems of health and safety. I feel, however, that we can return it to the AEC in its present condition with a perfectly clear conscience.

Very truly yours,

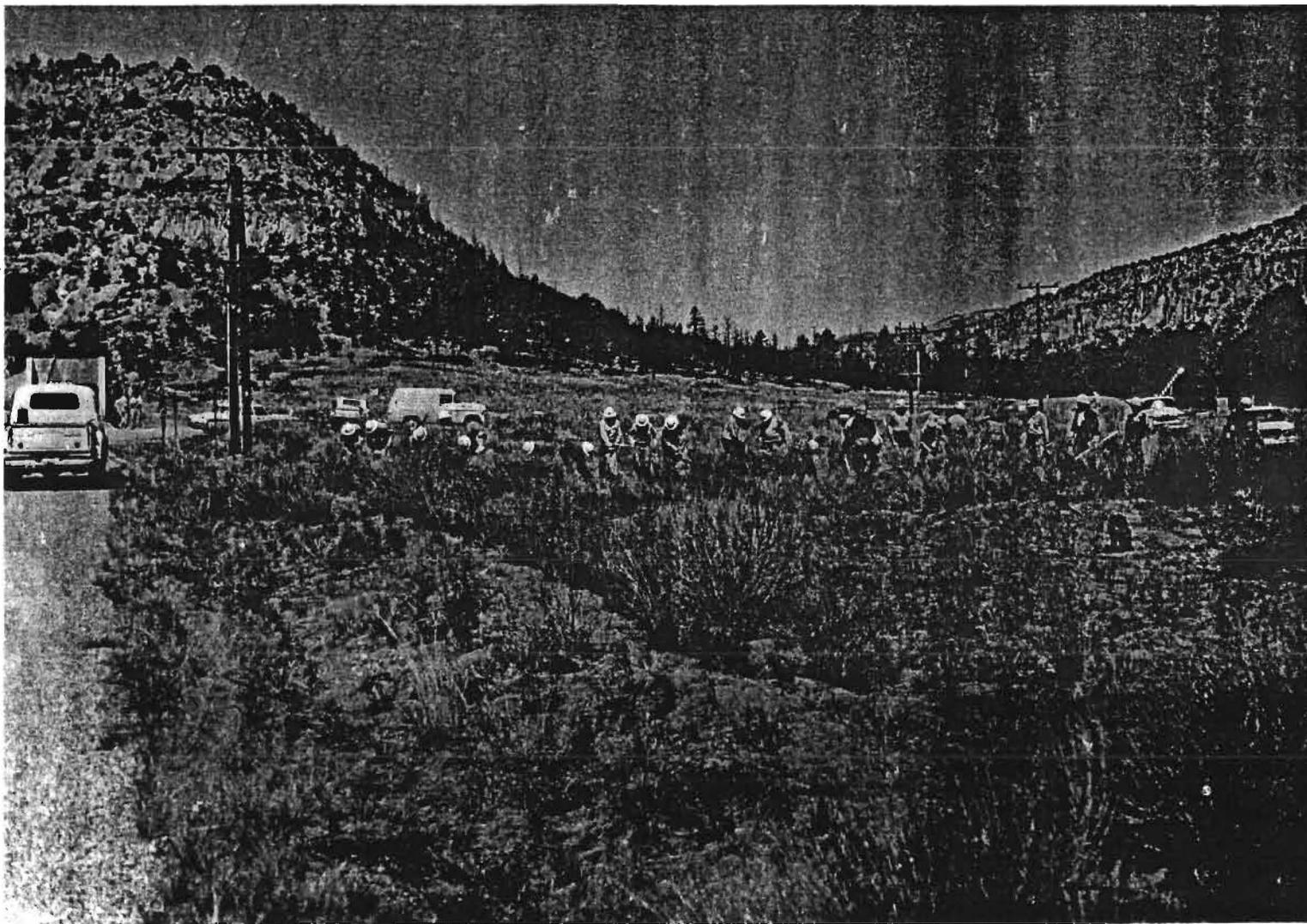
M. E. Bradbury
Director



1. General view of TA-10, Bayo Canyon, looking east from "Point Weather". Firing Point TA-10-13 is in center foreground. Firing Point TA-10-15 is out of the picture at lower left. TA-10-1 can be seen as the large building in the background at upper right. The MK-43 igniters were found at the base of the second group of fallen trees to the right of the slightly visible trail running vertically in right center of the picture.



2. View of looking south from top of Otowi Mesa at a portion of TA-10, Bayo Canyon. TA-10-20, Machine Shop, can be seen at left center and Firing Point TA-10-13 is at right center.



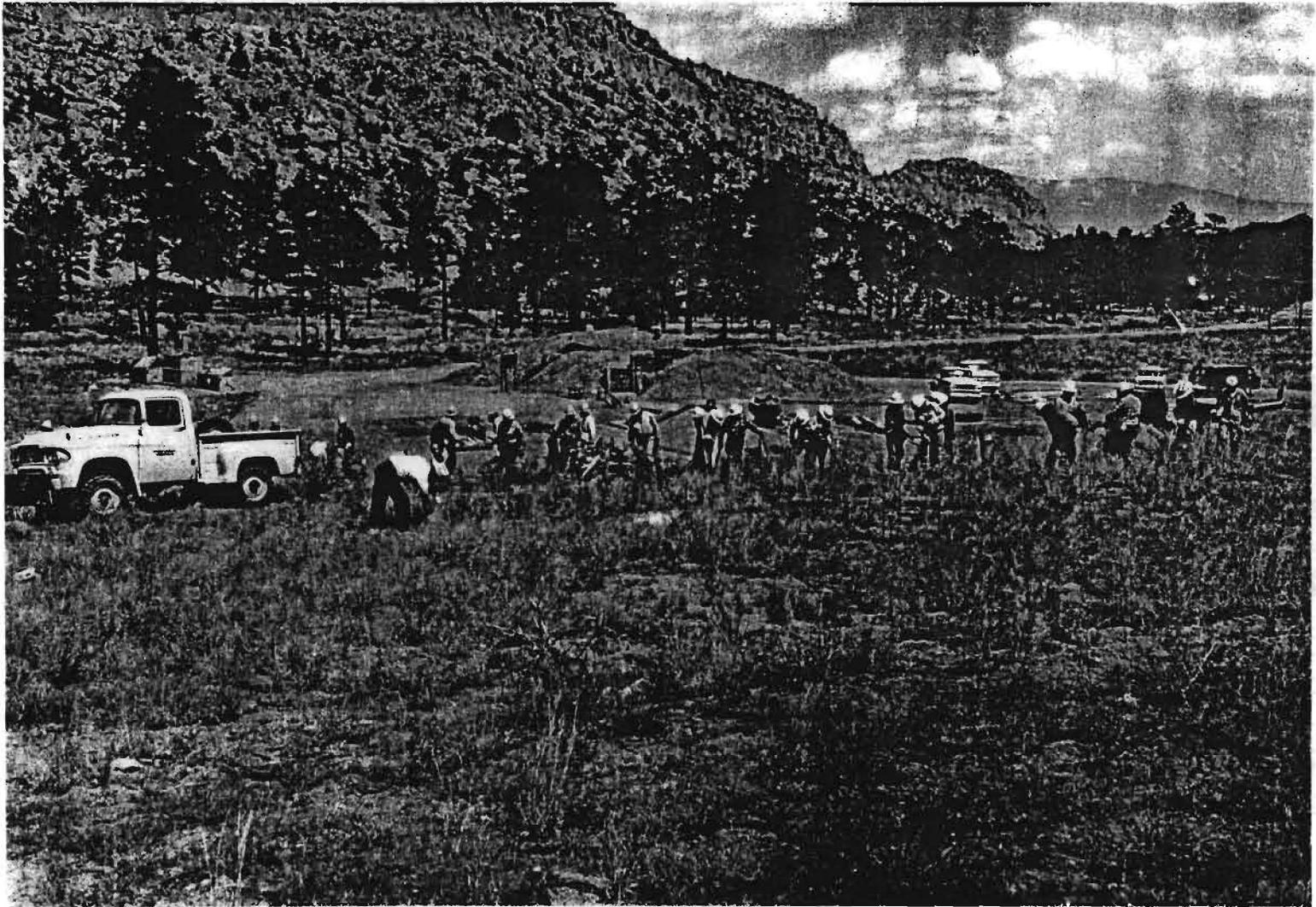
3. Looking west up Bayo Canyon with Indian cleanup crew in foreground. TA-10-13 is at left foreground and TA-10-15 is in background at the right.



4. Looking south at the shot debris covering ground before cleanup just west of TA-10-15.
See Photo #5 for the "after cleanup".



5. Looking at the ground southwest of TA-10-15 after cleanup by the Indian crews.



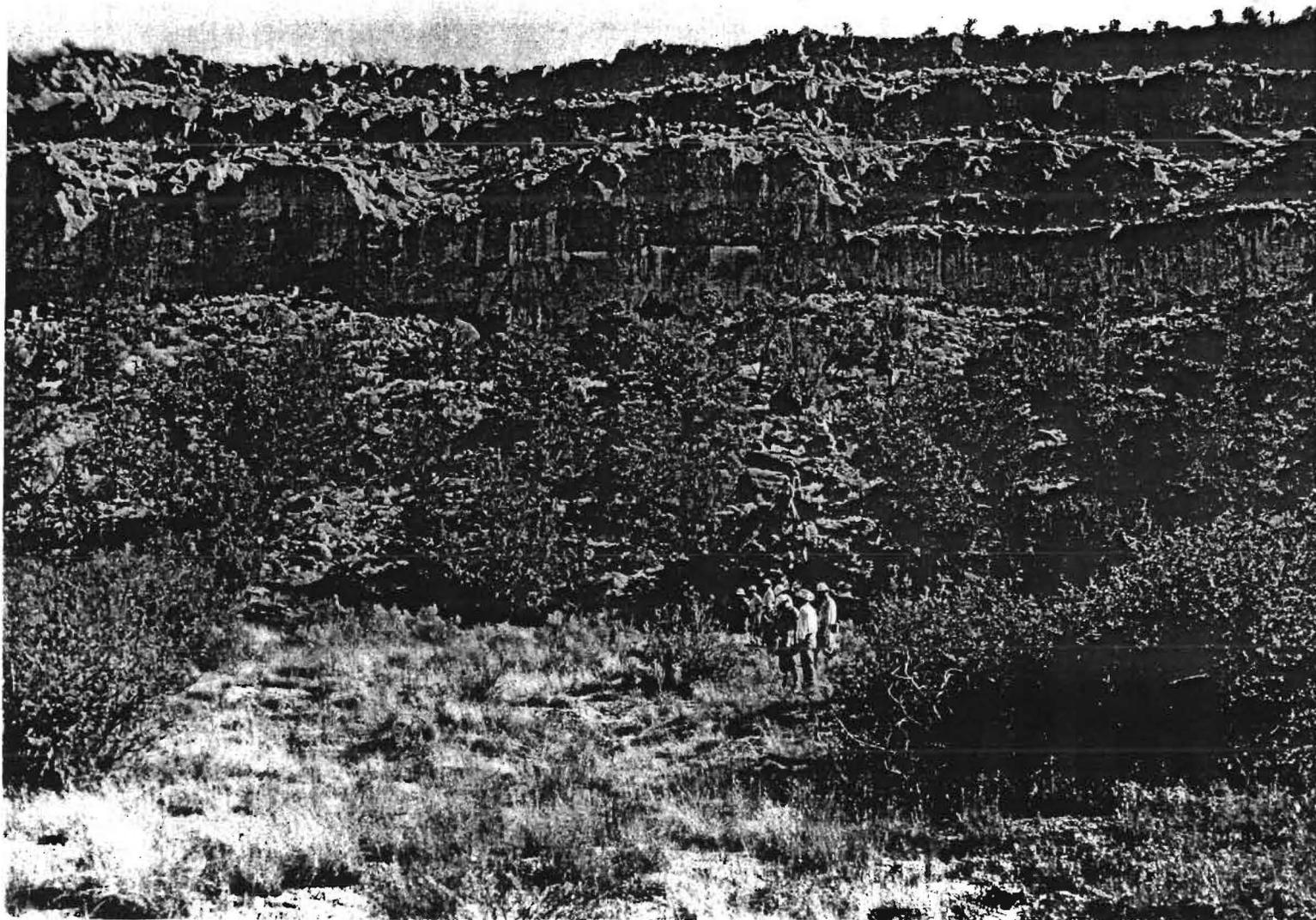
6. Indian cleanup crews working south of TA-10-15. View is looking northeast. This is in the area of heaviest debris.



7. View south of TA-10-15 showing use of sticks by Indian cleanup crew. Note gloves and film badges furnished by LASL.



8. Indian cleanup crew searching the bottom of Bayo Canyon, TA-10. Note pile of collected material in foreground. This is "up canyon" from TA-10-15.



9. Looking north from the Bayo Road east of TA-10. Otowi Mesa in the background. Note search crew spread from base of cliff to the foreground. The top of the mesa as well as the ledges were searched on foot.

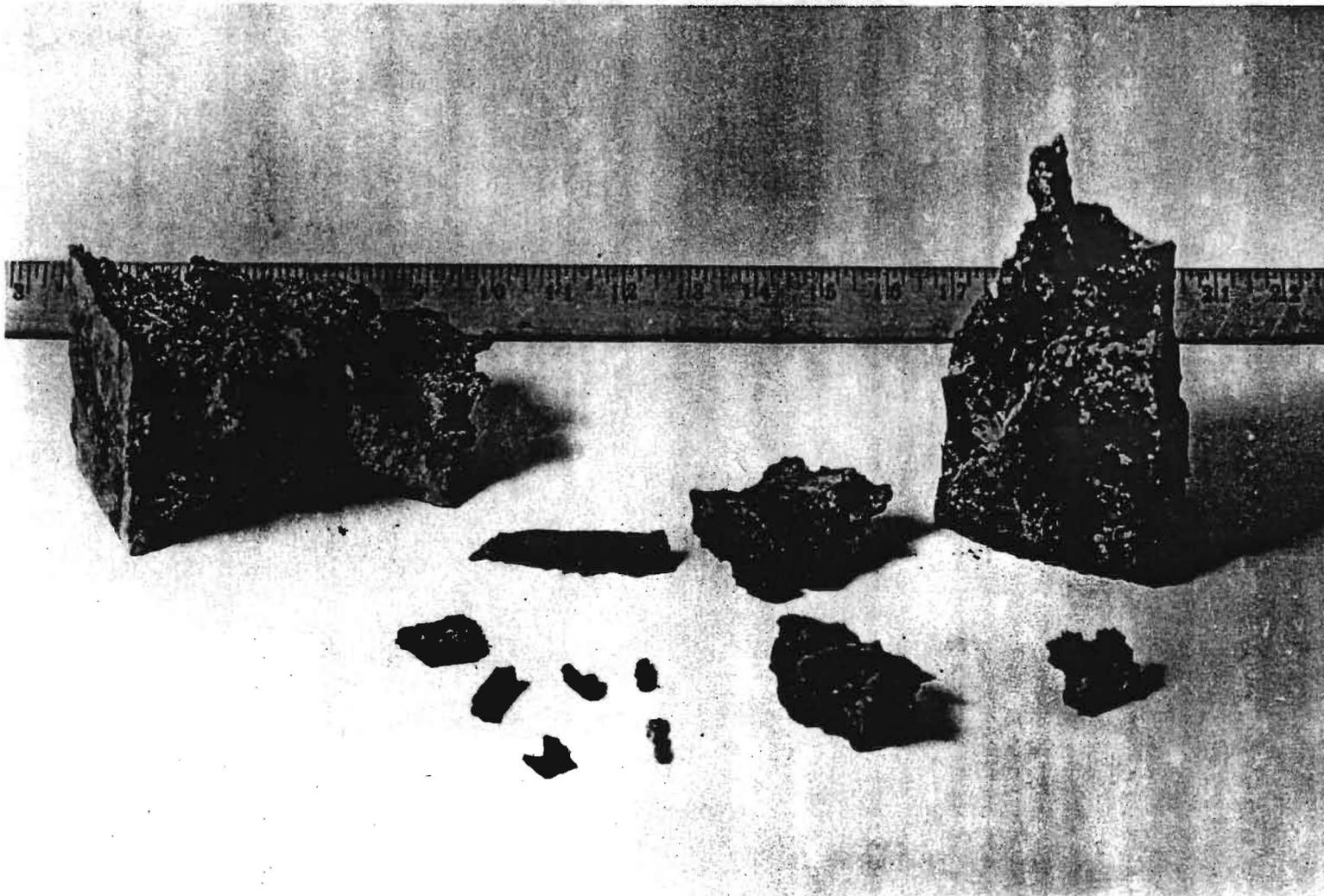


10. Close-up of three of the 32 MK-43 igniters that were found during the search. These had brass cases with a primer initiator and black powder charge as the igniter.

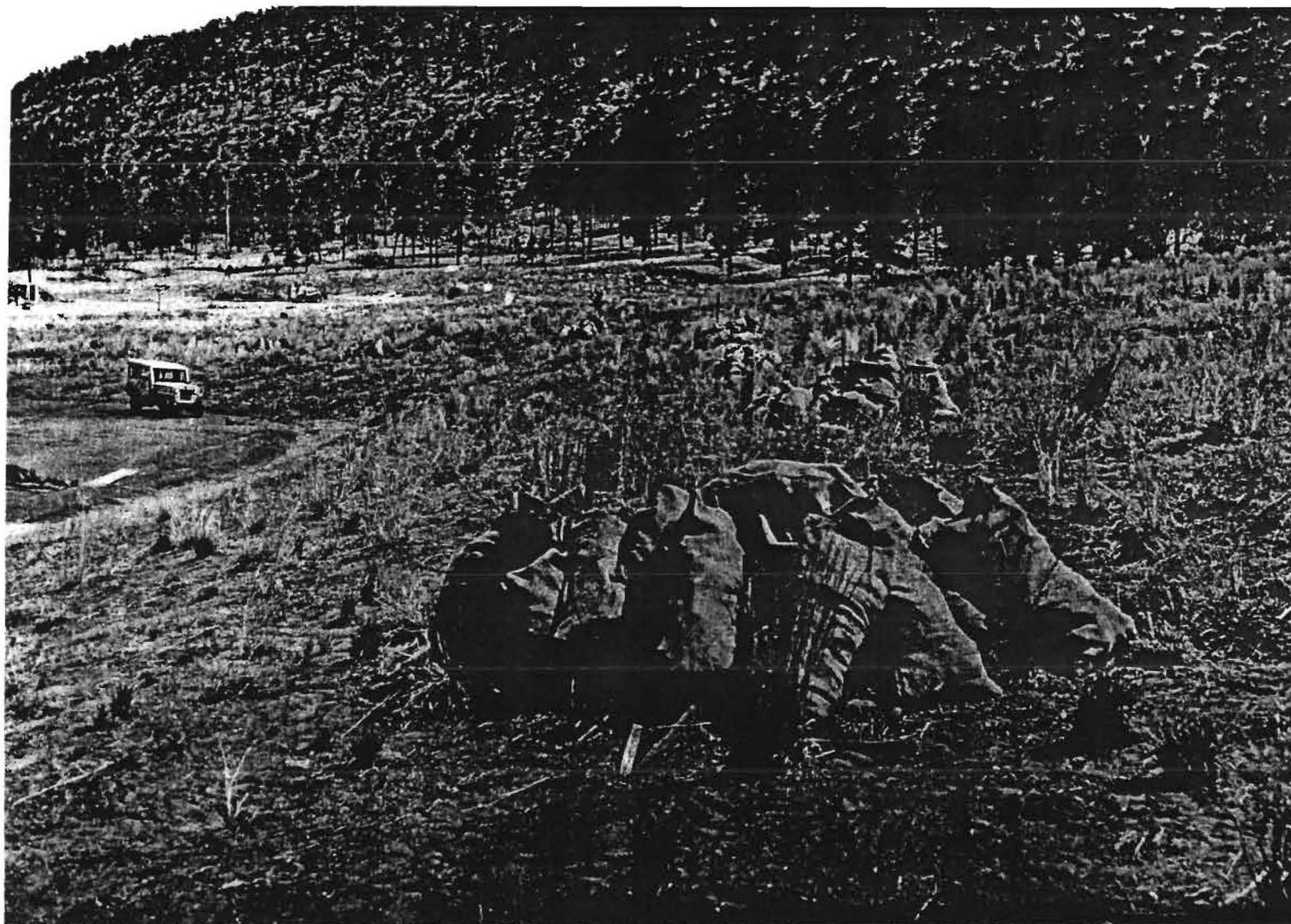


11. Close-up view showing some of the MK igniters on the ground like they were found. The location is shown in Photo #1.

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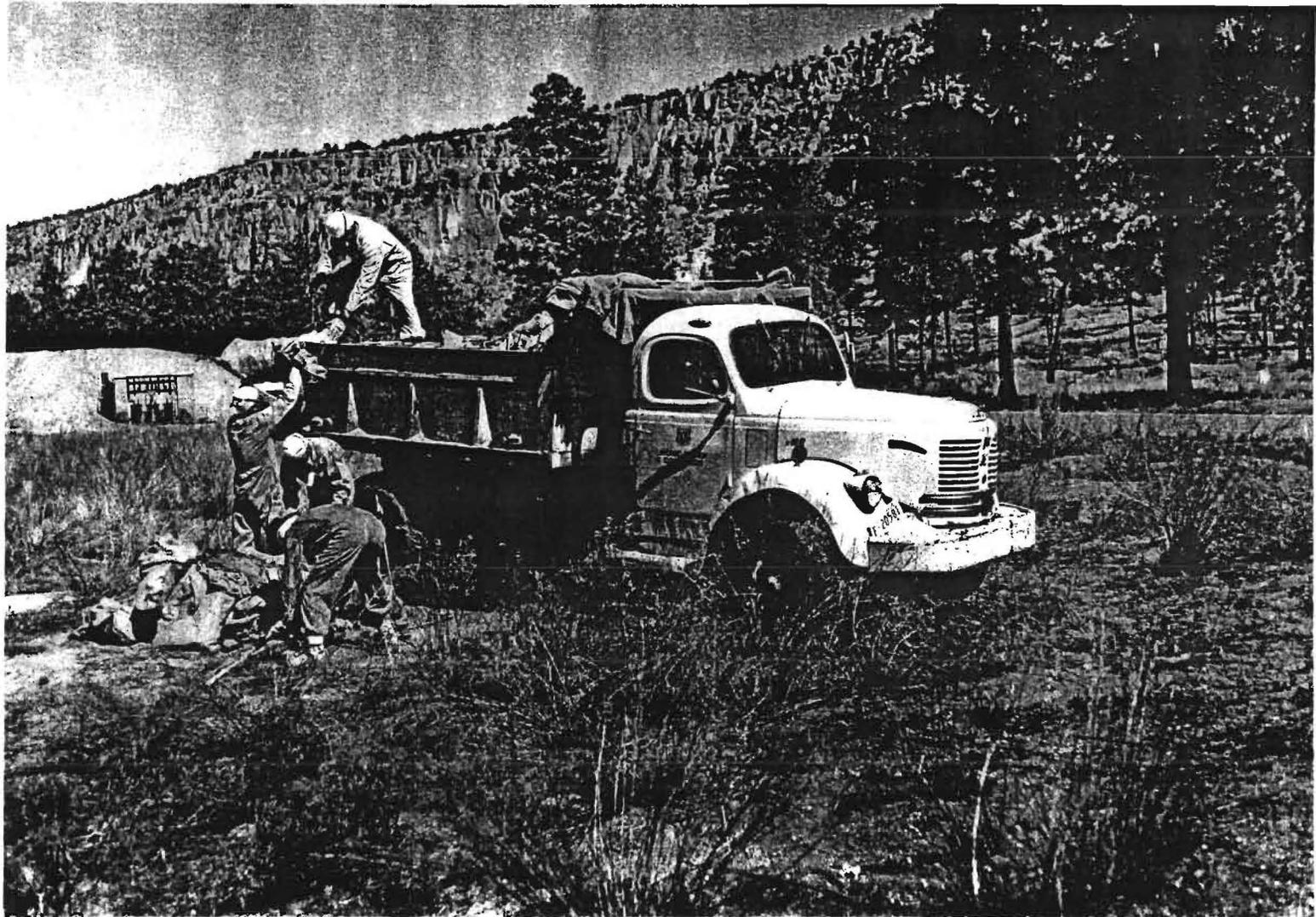
12. Pieces of tuballoy weighing a total of 23 pounds picked up during search of ground area at TA-10. Most were found south of TA-10-15.



13. View looking southeast from TA-10-15 showing sacks of debris at collection points. TA-10-13 can be seen at upper left. The front end loader seen in upper left was used for loading some of the piles into the dump trucks.



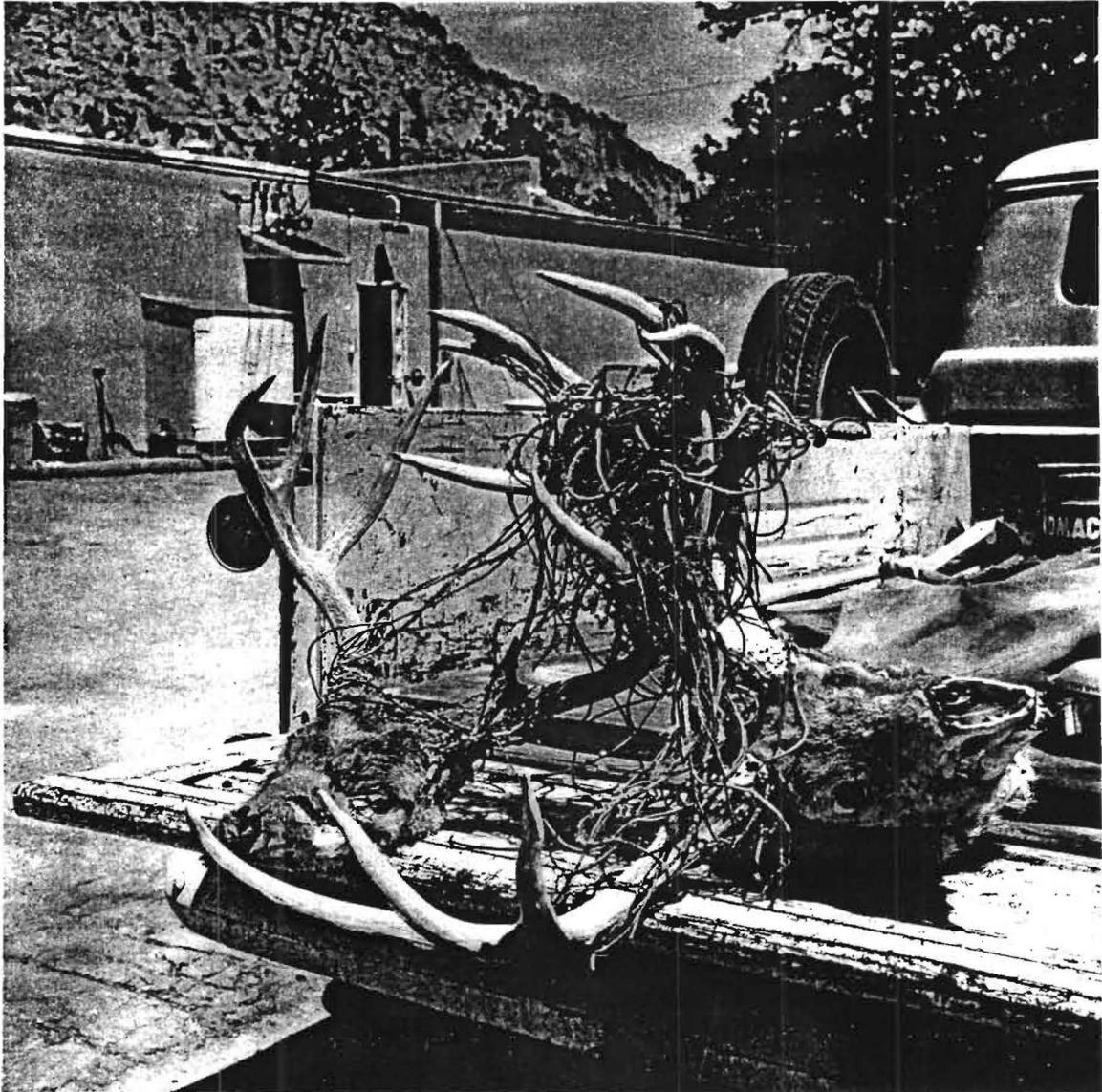
14. Close-up view of a collection point showing various types of debris. View is looking east (down canyon) from a point near TA-10-15. Roof of TA-10-20 can be seen at upper right.



15. Zia Company labor crew loading bags of collected material into dump truck at one of the collection points. TA-10-15 can be seen in the left background.



16. Dump truck unloading collected debris from TA-10 at the contaminated dump at Mesita del Buey.



17. Deer antlers and heads found at TA-10, Bayo Canyon, in May 1963. Note entanglement of firing wire cables, including around the neck of the head on the right.