



**US Army Corps
of Engineers**
HUNTSVILLE ENGINEERING
AND SUPPORT CENTER

FINAL VERSION

Defense Environmental Restoration Program
for
Formerly Used Defense Sites

Ordnance and Explosives
Chemical Warfare Materials

**ARCHIVES SEARCH REPORT
VOLUME IV
(SAN JOSE PROGRESS REPORTS)**

FORMER FORT SEGARRA

U.S. VIRGIN ISLANDS

Project Number - I02VI097701

FINAL - 11 MARCH 2002

Prepared by
US ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

I02VI097701_01.02_0010_a

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 61
1 NOVEMBER 1947 THROUGH 31 OCTOBER 1948

149N 13 1046

SAN JOSE PROJECT PROGRESS REPORT

NUMBER 61

1 November 1947 through 31 October 1948

BY San Jose Project Technical Staff

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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

10 November 1948

SUBJECT: San Jose Project Progress Report No. 61
Period 1 November 1947 through 31 October 1948

TO: Chief, Chemical Corps
Department of the Army
Tempo "K"
Washington 25, D. C.
ATTENTION: Project Coordination Committee

1. INTERIM SUMMARY

a. All work of the Technical Branch was brought to an abrupt halt on 23 December 1947 when the project was notified that San Jose Island would have to be evacuated immediately due to the failure of the United States and Panamanian Governments to agree to a renewal of the lease. Between this date and the 28th day of January 1948, when the island was formally returned to the custody of the Panamanian Government, all efforts were directed toward the evacuation of the island. During this month temporary locations in the Canal Zone were found for the equipment and personnel. The move was completed and exploratory trips were made looking for a new home for the project.

b. From the evacuation date until early in May 1948 the technical activities of the project were concentrated in an area at the mouth of the Chagres River on the Fort Sherman Reservation, Canal Zone. All technical personnel were engaged in guarding and rehabilitating the toxic munitions transferred from San Jose Island. The main body of the San Jose Project troops and the San Jose Project Headquarters were during this time located at Fort Clayton, Canal Zone. The only test carried on was the Surveillance Test for Bomb, Particulate, 4-lb., E-1 for Camp Detrick. This is the subject of Report No. 132 listed in paragraph two below.

c. In the latter part of the stay in the Canal Zone all energies were directed toward the move to the project's present home on St. Thomas, Virgin Islands. The work of evacuating from San Jose Island to the Canal Zone and the reshipping from the Canal Zone to the Virgin Islands was performed by personnel of the project.

(SJPPR No. 61)

d. A small advance party was dispatched to the Virgin Islands on 30 March 1948 and was followed by a larger party on 14 April 1948. The mission of these parties was to make the new station habitable for the main body. The greater portion of the equipment of San Jose Project arrived at St. Thomas aboard the Colonel William J. O'Brien on 4 May 1948. Personnel, military, civilian and dependents was airlifted from Panama to Virgin Islands in small implements. The toxic chemicals were towed over on two five hundred ton ocean-going barges arriving at St. Thomas on 21 May 1948. The explosives were brought over in the hold of an FS boat arriving on 27 May 1948 and completing the movement from the Canal Zone.

e. San Jose Project moved into a former U. S. Navy Submarine Base just west of the town of Charlotte Amalie on St. Thomas. There there were barracks, administration buildings, and shops adequate for the main post. However, as should be apparent there were no technical facilities of the peculiar nature needed by the San Jose Project. The Technical Branch has spent nearly all its energies since that time inventorying and rehabilitating its equipment and preparing and planning for further operations. The requirements for technical facilities of the project have been submitted and are under consideration by the higher echelons of the Department of the Army. Since this project has been transferred to St. Thomas an area of over 2,000 acres comprising the western tip of St. Thomas has been taken over for test areas. The only other test areas are located on Water Island, a small island just across the channel from the main post. Water Island is also the site of the Toxic Storage Yard.

f. A small temporary laboratory has been fitted out, a battery-charging room has been improvised and operations by means of temporary expedients will be undertaken shortly. A program of tests has been received containing fifty-five tests. Tests for outside agencies are also being run.

2. STATUS OF REPORTS

a. San Jose Project Report No. 129, Static Test of Three 7.2 Inch Rocket Heads, HQ Filled, During Rain, performed on 30 October 1947, was distributed during the period covered by this report.

b. San Jose Project Report No. 99, Surveillance of VKL, was distributed in October 1948.

(SJPPR No. 61)

c. San Jose Project Report 132, Surveillance Test for Bomb, Particulate, 4-lb., E-1, is in preparation.

d. Interim Report on Test No. 89, Surveillance of Bombs, Chemical, 125 pound, T3, H filled Heresite coated and T3, HD filled not coated, was distributed 2 September 1948.

e. Interim Report on Test No. 99, Surveillance of VKL was distributed 25 August 1948.

3. TEST ON CANISTERS M1 and M2 for COLLECTIVE PROTECTORS UNDER TROPICAL WEATHER CONDITIONS (To be SJPR No. 92 and to be run in connection with Cal G Board Test 744)

a. The equipment for this test has been set up in a small building on the main base. As has always been true before, the principal difficulty has been with the Dickinson meters. These meters have been worked on by the Instrument Engineer of this project, the head of the Instrument Laboratory of Technical Command and are presently being studied by the Laboratory Officer of this project. No positive results have been obtained as yet but there is some indication that the instrument can be made to function. In case this does not prove to be true shortly this project will turn the instrumentation problem over to the Proving Ground Section for solution.

4. STATUS OF TESTS

a. San Jose Project Plan of Test No. 135, Surveillance of Unstabilized OK in M70, M78, and M79 Bombs, has been concurred in and will be initiated as soon as proper sampling bottles are received from the States.

b. San Jose Project Test No. 89, Surveillance of Bombs, Chemical, 125 pound, T3, H filled Heresite coated and T3, HD filled not coated, will be resumed during the month of November.

c. San Jose Project Test No. 136, Static Test of M70 Bomb, H Filled, which is being run to compare conditions on St. Thomas with those on San Jose and elsewhere will be started about 15 November 1948. There are eight sections to this test and it is hoped that they can be run at the rate of one each week.

5. PROGRAM ON G AGENTS

All tests on G agents will be held in abeyance until Test No. 136, Static Test of M70 Bomb, H Filled, is completed.

(SJPPR No. 61)

6. METEOROLOGY

a. Weather summaries for June, July, August, September, and October 1948 for San Jose Project, St. Thomas, Virgin Islands are included in Appendix A. Also included in Appendix A is a weather summary by months from January 1930 through May 1948. These data were obtained from the local Weather Bureau which is a part of the Harbor Master's Office. Coordination between these data and data obtained later by this project may not be perfected.

b. The 6th Air Weather Squadron has established at San Jose Project a Meteorological Observation Station in charge of an Air Weather Sergeant. This station will be in full operation within the month.

7. PERSONNEL

a. Personnel turn-over at this project has been quite heavy. To illustrate this a list is given here showing the incumbents of the various positions on the 31 October 1947 and on 31 October 1948. Those officers who saw duty on San Jose Island are marked with an asterisk.

Col. Lowell A. Elliott	Commanding Officer	Col. Lowell A. Elliott*
Col. Norman D. Gillet	Technical Director	Col. Paul R. Smith
Col. Raymond T. Beurket	Post Inspector	
Lt. Col. Richard Escude	C & P Officer	Maj. William Kittel
Maj. Rura O. Ball	Post Engineer	Maj. Richard T. Clark
Capt. James N. Granade, Jr.	Asst. Post Engineer	
Capt. Jay S. Stockhardt	Executive Officer, Technical Branch	Capt. Jay S. Stockhardt*
Capt. William Bridges	Post Property Officer	Capt. James N. Granade, Jr. *
Capt. Chester Dombrowski	Munitions Development Officer	
Capt. Harry Fogarty	Asst. Property Officer	
Capt. Luke H. West	Technical Branch	Capt. Luke H. West*
Capt. Robert J. Eder	Club Officer	Capt. Lawrence M. Dellinger
Capt. Alvin H. Bowles	Transportation O.	Capt. Alvin H. Bowles*
Capt. Peter J. Ryan	Commanding Officer, Hq. & Hq. Det.	Capt. Clifton O. Duty*
Capt. Clifton O. Duty	Adjutant	1st Lt. Kasmir R. Czarny
	Chaplain	Capt. Donald W. Helm
	Special Services O.	Capt. Douglas P. Hillhouse
1st Lt. Joseph L. Beals	Communications O.	Capt. Edward P. Conners
1st Lt. Henry M. Cook	Post Surgeon	Capt. Henry M. Cook*
	Technical Branch	Capt. Kenneth W. Copeland

(SJPPR No. 61)

1st Lt. William G. Greer	Post Exchange O. Mess Officer	Capt. John K. Jouett 1st Lt. Bruno J. Jaskow
1st Lt. Alois Steinbach	Technical Branch	Capt. Lawrence E. Borish
1st Lt. Geoffrey Marshall	Munitions Officer Technical Branch	Capt. Edward G. Hall
1st Lt. Stephen D. Noyes	Provost Marshal Asst. Procurement Officer	1st Lt. Ralph S. Turner
1st Lt. James W. Startt	Technical Branch Asst. Post Engineer	1st Lt. Louis O. Elsaesser Capt. Cornelius Schmelzle

b. During the period covered by this report there have been a great many visitors to the project. The more important ones of these are listed below:

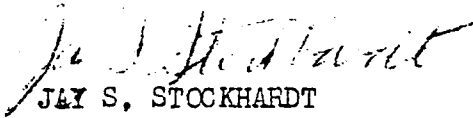
- 2 Jan 48: Lt. Col. Terrell arrived SJP to confer with the Technical Director on the disposition of equipment.
- 5 Jan 48: Col. Cook arrived SJP for conference regarding evacuation.
- 8 Jan 48: Maj.Gen. Waitt, Chief, Chemical Corps, arrived for inspection prior to evacuation.
- 17 Apr 48: Col. Creasy, Army Chemical Center, Md., arrived for official visit at St. Thomas, V. I.
- 26 Apr 48: Maj. Campbell, Research & Engineering Division, Army Chemical Center, Md., arrived SJP on official visit regarding technical activities on St. Thomas, V.I.
- 4 May 48: Conference held in CO's office between Col. Rodiak, USAF; Lt. Col. Hartel, G-3 Antilles; and Maj. Kittel, C&P Officer, this project. Subject: Establishment of air flights.
- 10 May 48: Mr. George B. Wilson, Army Chemical Center, Md., arrived SJP on technical activities.
- 14 May 48: Lt. Col. Rosenbaum, G-4 Antilles, arrived SJP for conference with CO.
- 17 May 48: Col. Whelchel, Area Petroleum Officer, USARCARIB, arrived SJP to inspect diesel tank farm here.
- 21 May 48: Lt. Col. O'Reilly, Antilles Chaplain, arrived SJP for conference with CO.

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- 26 May 48: Maj. Fath, Antilles Exchange Service, arrived for conference regarding Post Exchange this project.
- 28 May 48: Capt. Maylard, Civilian Personnel Officer, Antilles Dept., arrived SJP to discuss civilian job analysis with CO.
- 10 Jun 48: Maj. Gen. Waitt arrived for Post Inspection.
- 11 Jun 48: Capt. Bryan, MC, arrived for Malaria Control; Mr. Patrick, fire commissioner, arrived for fire inspection.
- 17 Jun 48: Col. Cook, G-2 Antilles, arrived for conference with CO and Security Officer.
- 20 Jun 48: Maj. Gen. Waitt arrived SJP for conference with CO.
- 2 Jul 48: Maj. O'Grady, Public Relations Officer, arrived to see CO.
- 9 Jul 48: General Porter, Commanding General, Antilles, arrived for conference about and tour of project.
- 14 Jul 48: Lt. Colonels Menard, Silvers, Cowarts, and Major Gay arrived from Army Chemical Center, Md., for inspection of post.
- Lt. Colonel Gerrow, G-4, USARCARIB, arrived with Antilles Officers for conference with CO.
- 6 Aug 48: Lt. Col. Fingerson, Transportation Corps, arrived SJP for conference with CO and Transportation Officer.
- 11 Aug 48: Dr. Harold Hodge, Army Chemical Center, Md., arrived for activities concerning Technical Branch.
- 27 Aug 48: Lt. Col. C. Fiscal arrived for conference with CO.
- 10 Sep 48: Col. Foy arrived to see CO.
- 14 Sep 48: Col. Tully, Maj. Woods, WO Campbell arrived SJP to conduct IG inspection.
- 1 Oct 48: Lt. Col. Armstrong, 98th AAA Gun Bn., Ft. Buchanan, Puerto Rico, arrived for conference with CO.

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- 6 Oct 48: Col. Hines, III and Lt. Col. Rosenbaum arrived
SJP for conference with CO.
- 9 Oct 48: Submarine USS Quillback arrived SJP in connection
with Naval activities.


JAY S. STOCKHARDT
Captain, Cml C
Actg. Technical Director

APPROVED:

LOWELL A. ELLIOTT
Colonel, Cml C
Commanding

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 62
1 NOVEMBER 1948 THROUGH 30 NOVEMBER 1948

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San Jose

SAN JOSE PROJECT PROGRESS REPORT

NUMBER 62

1 November 1948 through 30 November 1948

by

San Jose Project Technical Staff

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1	Chief, Chemical Corps
2 - 6	Mr. R. Kingan, British CW Representative, ECSO, Rm 475 785 Massachusetts Ave., NW, Washington D.C. (for B O distribution) Thru: Chief, Research and Engineering Division
7 - 13	Lt. Col. G. Chamier, British Army Staff, 1910 K St., NW Washington 6, D.C. (Copies 12-13 for Mr. S.T. Curtis, British Air Commission) (Thru: Chief, Research and Engineering Division)
14	Chief, Research and Engineering Division, CC Cml C Building No. 1, Army Chemical Center, Md.
15 - 16	Commanding Officer, Cml C Technical Command, Army Chemical Center, Md.
17 - 18	Chief, Medical Division, CC Cml C, Army Chemical Center, Md.
19 - 21	Major R.A. Klaehn, Canadian Technical Representative, Army Chemical Center, Md. (Thru: Chief, Research and Engineering Division Director of CW & Smoke, Ottawa, Ontario, Canada ATTN: Major Dewar
22 - 23	Project Coordination Committee, CC Cml C, Army Chemical Center, Md.
24	President, Chemical Corps Board, Army Chemical Center, Md.
25	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Md.
26	Chief, Proving Ground Section, Development Branch Research and Engineering Division, CC Cml C Army Chemical Center, Md.
27 - 28	Librarian, Joint Research and Development Board
29 - 33	Commanding Officer, Camp Detrick, Frederick, Md. (for Technical Director)
34	SJP Technical File
35 - 37	SJP Technical Library
38	Military Application Division, U.S. Atomic Energy Commission, 1901 Constitution Ave., N.W., Washington D.C. Attn: Cml C

HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

5 December 1948

SUBJECT: San Jose Project Progress Report No. 62
Period 1 November 1948 through 30 November 1948

TO : Chief, Chemical Corps
Department of the Army
Tempo "K"
Washington 25, D. C.
ATTENTION: Project Coordination Committee

1. STATUS OF REPORTS

a. The following reports were distributed during the period covered by this report:

<u>Title</u>	<u>Date of Test</u>	<u>Report Distributed</u>
SJPR No. 132, Surveillance Test for Bomb, Particulate, 4 lb, E-1	9 Feb 48 through 22 Oct 48	1 Nov 48 (approx)
SJPR No. ST-1, Druif Bay Meteorology	5 Oct 48 through 14 Oct 48	16 Nov 48
SJPR No. ST-2, Aluminum Sulfate Water Treatment (By request of Naval Research Laboratory)	3 Nov 48 through 10 Nov 48	19 Nov 48

2. STATUS OF TESTS

a. Surveillance Test for Bomb, Particulate, 4 Lb, E-1, Test No. 132
Bombs used in this test were shipped back to Camp
Detrick, Maryland, during the week of 15 Nov 48.

b. Surveillance of T-3 Bombs, Test No. 89

Suggested amendments to test procedure were received
from R & E Office, Army Cml Center, Md., and these amendments are
being incorporated before proceeding with the test.

c. Static Firing of M 70 Bomb, HD Filled, Test No. 136

The first phase of this test was completed on 23 Nov
48. An interim report covering this phase of the test is in preparation.
Subsequent phases are scheduled to be run at a rate of one a week.

(SJPPR No. 62)

- d. Surveillance of Unstabilized CK in M 70, M 78 & M 79 Bombs, Test No. 135

This test will be started on or about 6 December 1948.

- e. Test on Canisters M 1 & M 2 for Coll. Prot. under Tropical Weather Conditions, Test No. 92

Study of Dickensen meters to be used in this test is in progress under direction of Lab. Officer.

3. METEOROLOGY

- a. Weather summary for the month of November 1948 is included as Appendix A.

4. EQUIPMENT

- a. The FS 259 arrived on 24 November carrying ~~29~~¹/₂ tons of fencing to be used in isolating property held on the western end of the island.

5. VISITORS

- a. During the period covered by this report the following persons visited the project:

- 3 Nov 48: Col. H. I. Cole arrived on TDY and was conducted on a tour of technical installations and test areas.
- 9 Nov 48: Messrs. Clark and Mendez, Antilles Area Office, Panama Eng. Dist, San Juan, P. R. arrived in connection with engineer activities related to development and building program on western end of the island.
- 21 Nov 48: Mr. Wendell H. Kayser, Camp Detrick, Md. arrived in connection with technical activities.
- 26 Nov 48: Major W. E. Williamson arrived in connection with technical activities.

6. CONSTRUCTION

- a. A weather station was constructed during the month of November and will be prepared to initiate 24 hour operation on 1 December 1948.

7. PERSONNEL

- a. Colonel Paul R. Smith arrived on 9 Nov 48 and assumed duty as Technical Director this station.
- b. Colonel Lowell A. Elliott departed for Washington, D.C.

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on TDY on 29 November 1948. Colonel Paul R. Smith assumed Command this station for duration of his absence.

c. Miss Margaret B. Thorton arrived 30 November 1948 from Technical Command Library , Army Chemical Center, Md. for TDY of approximately 30 days to organize a Technical Library this station.

Jay E. Storch
JAY E. STORCH
Captain, Cml C
Actg. Technical Director

APPROVED:

Paul R. Smith
PAUL R. SMITH
Colonel, Cml C
Commanding

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 63
1 DECEMBER 1948 THROUGH 31 DECEMBER 1948

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 63

1 DECEMBER 1948 THROUGH 31 DECEMBER 1948

by

San Jose Project Technical Staff

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5 - 6	Commanding Officer, Cml C Technical Command Army Chemical Center, Md.
7 - 8	Chief, Medical Division, Army Chemical Center, Md.
9 - 13	Technical Director, Camp Detrick, Frederick, Md.
14	President, Cml C Board, Army Chemical Center, Md.
15	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Md.
16 - 17	Librarian, Research and Development Board, General Staff, U. S. Army, Research and Development Division, Washington, D. C.
18	Military Applications Division, US Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D.C., Attention: Chemical Officer
19 - 23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W. Washington, D.C. (Thru: Chief, Res & Eng Div, Army Chemical Center, Md.)
24 - 26	Canadian Technical Representative, Army Chemical Center, Md. (Thru: Chief, Res & Eng Div., Army Chemical Center, Md.)
27	British Liaison Officer, Army Chemical Center, Md. (Thru: Chief, Res & Eng Div., Army Chemical Center, Md.)
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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

5 January 1949

SUBJECT: San Jose Project Progress Report No. 63
Period 1 December 1948 through 31 December 1948

TO: Chief, Chemical Corps
Department of the Army
Tempo "K"
Washington 25, D. C.
ATTENTION: Project Coordination Committee

1. STATUS OF REPORTS

a. The following reports were distributed during the period covered by this report:

<u>Title</u>	<u>Date of Test</u>	<u>Report Distributed</u>
SJPR No. 136, Static Firing of M70 Bomb, HD Filled, Phase 1, Interim Report to Chief, Proving Ground Section, Development Br., R&E Division, OCCMLC, Army Chemical Center, Md.	23 Nov 48	3 Dec 48
SJPR No. 136, Static Firing of M70 Bomb, HD Filled, Phase 2, Interim Report as in Phase 1.	2 Dec 48	7 Dec 48
SJPR No. 136, Static Firing of M70 Bomb, HD Filled, Phase 3, Interim Report as in Phase 1.	9 Dec 48	14 Dec 48
SJPR No. 136, Static Firing of M70 Bomb, HD Filled, Phase 4, Interim Report as in Phase 1.	21 Dec 48	23 Dec 48

(SJPPR No. 63)

2. STATUS OF TESTS

- a. Surveillance of Unstabilized CK in M70, M78 and M79 Bombs, SJPPT No. 135.

The first sampling in connection with this test was performed on 1 December 1948. Initial sampling of M78 and M79 bombs has been completed. Sampling of M70 bombs is being delayed pending arrival of tapping and sampling devices. ✓

- b. Test on Canisters M1 and M2 for Collective Protectors Under Tropical Weather Conditions, SJPPT No. 92.

This test has been abandoned as directed by letter from the Chief, Research and Engineering Division dated 9 December 1948.

- c. Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds, SJPPT No. 102.

Work on this test will be initiated as directed in a letter from the Chief, Research and Engineering Division, dated 9 December 1948.

- d. Test of Suit, Protective, One-Piece, Impermeable, E1R1, and Related Items Under Extreme Heat Load, SJPPT No. 180.

Material for use in this test has been received at this site. Actual conduct of the test will begin upon receipt of further instructions from the Chemical Corps Board. ✓

- e. Static Firing of M70 Bomb, HD Filled, SJPPT No. 136.

The first four of eight phases of this test have been performed and interim reports distributed to Chief, Proving Ground Section, Development Branch, Research and Engineering Division, O-CCmIC, Army Chemical Center, Maryland for comment.

- f. Tests at this site in connection with Naval personnel.

Information has been received that the San Jose Project will once again be called upon to cooperate with the Navy in tests to be conducted by Naval personnel at this station. Personnel and equipment are expected to arrive this station during the month of January 1949.

(SJPPR No. 63)

3. METEOROLOGY

a. Weather summary for the month of December 1948 is included as Appendix A.

4. SAN JOSE PROJECT TECHNICAL LIBRARY

a. Miss Margaret B. Thornton, who arrived 30 November 1948 from the Technical Command Library, Army Chemical Center, Md., is making progress in the organization of the Technical Library at this station. Much remains to be accomplished; however, since her arrival, over forty footlockers of material have been examined and filed. Indexing of this material is now under way.

5. VISITORS

a. During the period covered by this report the following persons have visited the project.

11 Dec 48 - General Wedemeyer, Deputy Chief of Staff, arrived for a short tour of inspection this project.

14 Dec 48 - Colonel Haugen, Major Moore, Major Hurt, Major Caldwell, Mr. Wetter and two EM arrived on TDY of approximately two days in connection with Technical activities.

14 Dec 48 - Major General Alden H. Waitt, Chief, Chemical Corps, arrived from Washington, D. C., on approximately four days TDY on command functions.

6. PERSONNEL

a. Colonel Lowell A. Elliott returned from TDY in Washington, D.C., on 8 December 1948.

b. A letter was sent to Civilian Personnel Officer, Fort Brooke, Puerto Rico, requesting that a man be recruited to fill the position of Laboratory Aide, SP-4, for Technical Branch this project.

c. The resignation of Mr. N. R. Warehein, Instrument Engineer this station was received and approved effective 27 December 1948.

d. A letter has been sent to the Office of the Chief, Chemical Corps, requesting the initiation of recruitment of civilian

(SJPPR No. 63)

personnel for work in the Technical Branch this project.

e. TDY orders are pending on an Engineer and a Laboratory Technician to be sent for work with Technical Branch this project.

f. A four-man labor crew has been organized to work for Technical Branch. Such necessary duties as maintenance and repair will be performed by this group.

g. The official holiday period began on 23 December 1948 to run through 6 January 1949. During this period only one third of the personnel assigned this project were required to be present for duty on any given day. Technical activities were, of necessity, held to a minimum during this period.



PAUL R. SMITH
Colonel, Cml C
Technical Director

APPROVED:



LOWELL A. ELLIOTT
Colonel, Cml C
Commanding

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 64
1 JANUARY 1949 THROUGH 31 JANUARY 1949

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SAN JOSE PROJECT PROGRESS REPORT

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by

San Jose Project Technical Staff

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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

4 February 1949

SUBJECT: San Jose Project Progress Report No. 64
Period 1 January 1949 through 31 January 1949

TO: Chief, Chemical Corps
Department of the Army
Tempo "K"
Washington 25, D. C.
ATTENTION: Project Coordination Committee

1. STATUS OF REPORTS

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SJPR No. 136, Static Firing of M70 Bomb, HD Filled, Phase 6, Interim Report as in Phase 5.	25 Jan 49	31 Jan 49
SJPR No. 120, Test of Mask, Gas, Service, Combat, E48-11-E16, Interim Report to Chief, Prov. Gr. Sec., Dev. Br., R&E Div., Army Chemical Center, Md.	Sept. 47	25 Jan 49

2. STATUS OF TESTS

a. Static Firing of M70 Bomb, HD Filled, SJPPT No. 136.

The fifth phase of this test has been performed and an interim report distributed to Chief, Proving Ground Section, Development Branch, Research & Engineering Division, OCCmLC, Army Chemical Center, Md. The sixth phase has also been performed and an interim report submitted as in Phase 5.

b. Test of Mask, Gas, Service, Combat, E48-11-E16, SJPPT No. 120.

An interim report covering results of this test has been sent to Chief, Proving Ground Section, Development Branch, Research & Engineering Division, OCCmLC, Army Chemical Center, Md. The final report will be distributed early in February.

c. Surveillance of Bombs, Chemical, 125 Pound, T-3, H Filled, Heresite Coated and T-3, HD Filled, Not Coated, SJPPT No. 89.

Results of sampling performed on 12 January 1949 are included as Appendix B.

d. Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds, SJPPT No. 102.

Plan of test has been rewritten and submitted to Chief, Proving Ground Section, Development Branch, Research & Engineering Division, OCCmLC, Army Chemical Center, Md. for approval.

e. Static Test in the Open of Nine 4.2 Inch Chemical Mortar Shells, GA Filled, SJPPT No. 130.

Plan of test prepared in 1947 is being rewritten to fit the conditions and facilities at St. Thomas as directed in a letter dated 10 January 1949, from the Chief, Research and Engineering Division, OCCmLC, Army Chemical Center, Md.

f. Aluminum Sulfate Water Treatment, SJPPT No. ST-2.

Dr. Luther B. Lockhart arrived on or about 22 January 1949 from the Naval Research Laboratory, Washington, D. C. in connection with further work on Aluminum Sulfate Water Treatment tests.

(SJPPT No. 64)

g. Tests in connection with Naval personnel.

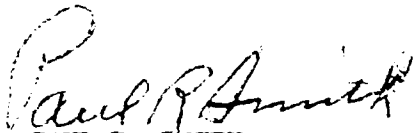
A group of Naval officers and enlisted men arrived 25 January 1949, for the purpose of conducting tests at this site.

3. METEOROLOGY

a. Weather summary for the month of January 1949 is included as Appendix A.

4. PERSONNEL

a. Mr. Paul Geiger, a chemical engineer, arrived this project on TDY in connection with technical work.


PAUL R. SMITH
Colonel, Cml C
Technical Director

APPROVED:


LOWELL A. ELLIOTT
Colonel, Cml C
Commanding

TEST 89

INTERIM REPORT OF H SURVEILLANCE ANALYSIS

Bombs stored on dunnage in a well ventilated building on 21 May 1948;
(San Jose Project, St. Thomas, Virgin Islands)

A. Bombs, T-3, H filled, Heresite coated, Lot No. 3-6-45, EA# 99-10-45

B. Bombs, T-3, HD filled, not coated, Lot No. 3-7-45, EA# 99-12-45

Sampling date 12 January 1949:

Bomb Number	H filled Heresite coated Lot # 3-6-45 EA# 99-10-45		HD filled Not coated Lot # 3-7-45 EA# 99-12-45	
	1	2	3	4
Wgt. bomb plus agent (lbs.)	132.00	132.75	132.75	132.50
Wgt. bomb casing (lbs.)	76.50	76.50	76.50	76.50
Wgt. agent removed (lbs.)	55.50	56.25	56.25	56.00
Wgt. of residue through 16 mesh screen (lbs.)	3.00	2.25	0.125	0.15
Wgt. of liquid agent (lbs.)	52.50	54.00	56.125	55.85
Residue through 16 mesh screen (%)	5.38	4.00	0.22	0.27
Liquid agent (%)	94.62	96.00	99.78	99.73
F.P., agent (°C)	4.5	3.6	11.5	11.3
Distillate (%)	79.7	80.1	93.6	94.8
Residue (%)	17.3	17.0	5.4	4.6
Loss (%)	3.0	2.9	1.0	0.6
M.P. of distillate (°C)	11.3	10.3	12.7	13.1
Purity of distillate (%)	91.58	88.86	95.38	96.17
Purity of agent from bomb (%)	72.07	70.23	89.54	91.56
HCl (total) (%)	0.17	0.18	0.09	0.13
Fe as Fe Cl ₂ (agent from bomb) (%)	0.51	0.51	0.50	0.56
Fe as Fe Cl ₂ (1st wash water) (%)	0.34	0.04	0.02	0.11
Fe as Fe Cl ₂ (2nd wash water) (%)	1.80	1.77	0.10	0.13
Fe as Fe Cl ₂ , total (%)	2.65	2.32	0.62	0.89

Prior to the sampling performed on 12 January 1949, the bombs were moved from the building in which they had been stored to a new storage location outdoors, the bombs being protected by canvas covers. This change of storage location was effected on 6 December 1948.

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 65
1 FEBRUARY 1949 THROUGH 28 FEBRUARY 1949

82-13-C
88-3-C

Jan 28 1949

SAN JOSE PROJECT PROGRESS REPORT

NUMBER 65

1 FEBRUARY 1949 THROUGH 28 FEBRUARY 1949

by

San Jose Project Technical Staff

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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

1 February 1949

SUBJECT: San Jose Project Progress Report No. 65
Period 1 February 1949 through 28 February 1949

TO: Chief, Chemical Corps
Department of the Army
Tempo "K"
Washington 25, D. C.
ATTENTION: Project Coordination Committee

1. STATUS OF REPORTS

a. The following reports were distributed during the period covered by this report:

<u>Title</u>	<u>Date of Test</u>	<u>Report Distributed</u>
SJPR No. 136, Static Firing of M70 Bomb, HD Filled, Phase 7, Interim Report to Chief, Proving Ground Section, Development Branch, R&E Division, OCCmLC, Army Chemical Center, Md.	10 Feb 49	15 Feb 49
SJPR No. 136, Static Firing of M70 Bomb, HD Filled, Phase 8, Interim Report as in Phase 7.	23 Feb 49	28 Feb 49

2. STATUS OF TESTS

a. Static Firing of M70 Bomb, HD Filled - SJPPT No. 136.

The seventh and eighth phases of this test have been performed and an interim report on each submitted to the Chief, Proving

(SJPPR No. 65)

Ground Section, Development Branch, R&E Division, OCCmLC, Army Chemical Center, Md. These two phases complete actual field work on this test and the final report is now in preparation.

- b. Static Test of Nine 4.2 Inch Chemical Mortar Shells, GA Filled, in the Open, SJPPT No. 130.

Plan of Test has been written and submitted to Chief, Proving Ground Section, Development Branch for approval.

- c. Static Test of M70 (E46) Bomb, GA Filled, in the Open, SJPPT No. 137.

Plan of Test has been written and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- d. Static Test of Nine German 105 mm Shell, GA Filled, in the Open, SJPPT No. 138.

Plan of Test has been written and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- e. Static Test of Single German 15 cm Rocket, GA Filled, and of Nine German 15 cm Rockets in Open, SJPPT No. 140.

Plan of Test has been written and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- f. Static Test of Nine German 105 mm Shells, GA Filled, in Area Covered by Vegetation, SJPPT No. 142.

Plan of Test has been written and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- g. Static Test of German 15 cm Rocket, GA Filled, in Area Covered by Vegetation, SJPPT No. 144.

Plan of Test has been written and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- h. Static Test of Nine 4.2 Inch Chemical Mortar Shells, GA Filled, in Area Covered by Vegetation, SJPPT No. 147.

Plan of Test has been written and submitted to Chief, Proving Ground Section, Development Branch, for approval.

(SJPPR No. 65)

- i. Static Test of Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio in Area Covered with Vegetation, SJPPT No. 152.

Plan of Test has been written and changes recommended by Chief, Proving Ground Section, Development Branch.

- j. Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds, SJPPT No. 102.

Further changes have been recommended by Lt. Col. Roberts, Lt. Col. Campbell and Mr. Smith, which will necessitate rewriting this Plan of Test, once again. A location for the shelter has been chosen and approved by those mentioned above.

3. TRAINING

- a. Gas Identification and Gas Mask Drill was performed by all troops on 2 February 1949.

4. METEOROLOGY

- a. Weather summary for the month of February 1949 is included as Appendix A.

5. VISITORS

- a. During the period covered by this report, the following persons visited the Project:

6 Feb 49 Major General Alden H. Waitt, Chief, Cml C arrived for official visit.

14 Feb 49 Lt. Col. W. W. Campbell, Lt. Col. Herbert Roberts and Mr. Brooks Smith arrived from Army Chemical Center, Md., on TDY of approximately 10 days in connection with technical activities.

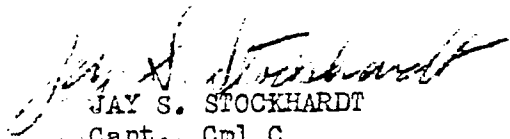
18 Feb 49 Drs. Mass, Solandt, Colonels Curry and Klaehn and Mr. Reed, a group of Canadian technical personnel, arrived this project, in connection with technical activities.

(SJPPR No. 65)

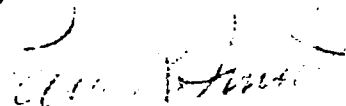
23 Feb 49 Dr. Fell, Asst. Tech. Dir., Camp Detrick,
arrived in connection with technical
activities.

6. PERSONNEL

a. Mr. Paul Geiger departed this project on approximately
16 February upon completion of TDY.


JAY S. STOCKHARDT
Capt., Cml C
Deputy Technical Director

APPROVED:


PAUL R. SMITH
Colonel, Cml C
Commanding

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 66
1 MARCH 1949 THROUGH 31 MARCH 1949

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 66

1 MARCH 1949 THROUGH 31 MARCH 1949

by

San Jose Project Technical Staff

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4	Secretary, Research Council, OCCmLC, Bldg. 330, Army Chemical Center, Md.
5 - 6	Commanding Officer, Cml C Technical Command, Army Chemical Center, Md.
7 - 8	Chief, Medical Division, Army Chemical Center, Md.
9 - 13	Technical Director, Camp Detrick, Frederick, Md.
14	President, Cml C Board, Army Chemical Center, Md.
15	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Md.
16 - 17	Librarian, Research and Development Board, General Staff, U. S. Army, Research and Development Division, Washington, D. C.
18	Military Applications Division, U. S. Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D. C., Attention: Chemical Officer
19 - 23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W. Washington, D. C. (Thru: Chief, Res. & Eng. Div., Army Chemical Center, Md.)
24 - 26	Canadian Technical Representative, Army Chemical Center, Md. (Thru: Chief, Res. & Eng. Div., Army Chemical Center, Md.)
27	British Liaison Officer, Army Chemical Center, Md. (Thru: Chief, Res. & Eng. Div., Army Chemical Center, Md.)
28	SJP Technical files
29 - 31	SJP Technical Library

HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

1 April 1949

SUBJECT: San Jose Project Progress Report No. 66
Period 1 March 1949 through 31 March 1949

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.
Attention: Project Coordination Committee

1. STATUS OF REPORTS

a. The following reports were distributed during the period covered by this report:

<u>Title</u>	<u>Date of Test</u>	<u>Report Distributed</u>
SJPR No. 136, Static Test of M70 Bomb, HD Filled	Nov 48 - Feb 49	22 Mar 49
SJPR No. 120, Test of Mask, Gas, Service, Combat, E48-11-E16, (CmlCBd Project No. 748)	September 47	24 Mar 49

2. PROGRESS OF TESTS DURING THE MONTH OF MARCH

a. Static Test of M70 Bomb, HD Filled - SJPPT No. 136

Final report distributed on 22 March 1949.

b. Static Test of Nine 4.2 Inch Chemical Mortar Shells,
GA Filled, in the Open - SJPPT No. 130.

Plan of Test has been revised and submitted to Chief,

(SJPPR No. 66)

Proving Ground Section, Development Branch, for approval.

- c. Static Test of M70 (E46) Bomb, GA Filled, in the Open, SJPPPT No. 137.

Plan of Test has been revised and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- d. Static Test of Nine German 105 mm Shells, GA Filled, in the Open, SJPPPT No. 138.

Plan of Test has been revised and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- e. Static Test of Single German 15 cm Rocket, GA Filled, and of Nine German 15 cm Rockets in Open, SJPPPT No. 140.

Plan of Test has been revised and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- f. Static Test of Nine German 105 mm Shells, GA Filled, in Area Covered by Vegetation, SJPPPT No. 142.

Plan of Test has been revised and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- g. Static Test of German 15 cm Rocket, GA Filled, in Area Covered by Vegetation, SJPPPT No. 144.

Plan of Test has been revised and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- h. Static Test of Nine 4.2 Inch Chemical Mortar Shells, GA Filled, in Area Covered by Vegetation, SJPPPT No. 147.

Plan of Test has been revised and submitted to Chief, Proving Ground Section, Development Branch, for approval.

- i. Single 125 Pound Chemical Bomb T3E2, GA Filled, with 35:1 Burster Ratio, Dropped in Open, SJPPPT No. 150.

Plan of Test submitted to Chief, Proving Ground Section, Development Branch, for approval.

- j. Static Test in Area Covered by Vegetation of a Single 125 Pound Chemical Bomb T3E2, GA Filled, with a 35:1 Burster Ratio, SJPPPT No. 152.

Plan of Test submitted to Chief, Proving Ground Section, Development Branch, for approval.

(SJPPR No. 66)

- k. Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio, Dropped in an Area Covered by Vegetation, SJPPT No. 153.

Plan of Test submitted to Chief, Proving Ground Section, Development Branch, for approval.

- 1. Location of Entrances to Gasproof Shelters in Relation to Prevailing Wind, SJPPT No. 102A.

(1) Plan of Test rewritten and submitted to Chief, Proving Ground Section, Development Branch, for approval.

(2) Plans for the shelter have been drawn and construction will begin early in April.

- m. Static Test in the Open of a Single E23 Smoke Pot, GA Filled, SJPPT No. 166.

Plan of Test submitted to Chief, Proving Ground Section, Development Branch, for approval.

- n. Static Test in Area Covered by Vegetation of a Single E23 Smoke Pot, Filled GA, SJPPT No. 167.

Plan of Test submitted to Chief, Proving Ground Section, Development Branch, for approval.

- o. Static Test in the Open of a Single E23 Smoke Pot, Filled GA, on Water with Onshore Wind, SJPPT No. 168.

Plan of Test submitted to Chief, Proving Ground Section, Development Branch, for approval.

- p. Static Test in the Open of a Single E23 Smoke Pot, Filled HD, SJPPT No. 176.

Plan of Test submitted to Chief, Proving Ground Section, Development Branch, for approval.

- q. Static Test in the Open of a Single E23 Smoke Pot, Filled HT, SJPPT NO. 177.

Plan of Test submitted to Chief, Proving Ground Section, Development Branch, for approval.

(SJPPR No. 66)

- r. ~~Static Test in the Open~~ of a Single E23 Smoke Pot,
Filled HN3, SJPPT No. 178.

Plan of Test submitted to Chief, Proving Ground Section,
Development Branch, for approval.

- s. Static Test in the Open of a Single E23 Smoke Pot,
Filled HQ, SJPPT No. 179.

Plan of Test submitted to Chief, Proving Ground Section,
Development Branch, for approval.

3. PROGRESS OF TESTS

- a. A complete list of tests scheduled for San Jose Project
together with current status is included as Appendix B.

4. CONSTRUCTION

- a. Necessary construction to accommodate test animals on
Water Island is very near completion. Approximately 1050 feet of
fencing has been strung to furnish separate corrals for fresh and con-
taminated goats. Total area for both fresh and contaminated goats
approximates two acres.

- b. Sixteen eight by twelve foot pigeon cages, each containing
eight roosts are being constructed which when completed will accommodate
approximately 2,000 pigeons.

- c. An entire building is being rat-proofed to provide feed
storage space for the test animals.

5. METEOROLOGY

- a. Weather summary for the month of March 1949 is included
as Appendix A.

- b. There was unusually heavy rainfall on 22 March with 1.35
inches, 28 March with 1.23 inches, 29 March with 1.38 inches, and
30 March with 2.05 inches.

6. PERSONNEL

- a. Colonel Lowell A. Elliott departed 4 March 1949 for

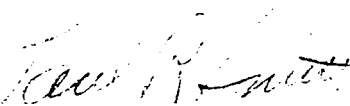
(SJPPR No. 66)

return to Zone of Interior. A formal farewell ceremony was held in his honor on 2 March 1949, all personnel this project attending.

b. Colonel Paul R. Smith assumed command this project on 4 March 1949.


JAY S. STOCKHARDT
Captain, Cml C
Deputy Technical Director

APPROVED:


PAUL R. SMITH
Colonel, CmlC
Commanding

(SJPPR No. 66, Ap

APPENDIX B
PROGRESS OF TESTS

(SJPPR No. 66, App B)

EST NO.	TITLE	STATUS
89	Surveillance of Bombs, Chemical 125 lb., T-3, H filled, Heresite coated and T-3, HD filled not coated.	Current, long-range sampling
99	Surveillance of VKL.	Test Completed, Report Distributed.
102A	Location of Entrances to Gasproof Shelters in Relation to Prevail- ing Winds (Wooded Phase of Cml C Bd. Test No. 724)	Plan of Test submitted 7 March 1949
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA filled, in the Open	Plan of Test submitted 14 March 1949
132	Surveillance of Bomb, Particulate 4 lb., E-1	Test Completed, Report Distributed.
135	Surveillance of CK Stored in Bombs and Ton Containers under Tropical Conditions.	Awaiting Material
136	Test with M70 Bomb, filled HD, in open and in area covered with vegetation, static fired, with onshore and with offshore winds.	Test Completed, Report Distributed.
137	Test of M70 Bomb, filled GA (E46) in open area, static fired.	Test completed, Report Distributed
138	Test of German 105 mm Shell, filled GA, static fired in open (approx. 9 shells fired simultaneously).	Plan of Test submitted 14 March 1949
139	Test of German 105 mm shell, filled GA, fired from gun into open (number of rounds to be determined by results from Test No. 138.	Awaiting completion of Test No. 138
140	Test of German 15 cm rocket, filled GA, static fired in open. (single round and multiple, 9 fired simultaneously)	Plan of Test submitted 14 March 1949

TEST NO.	TITLE	
141	Test of German 15 cm rocket, filled GA, fired into open from launcher (number to be determined from results of No. 140)	
142	Test of German 105 mm shell, filled GA, static fired in area covered by vegetation (approx. 9 shells fired simultaneously)	Plan of Test submitted 15 March 1949
143	Test of German 105 mm shell, filled GA, fired from gun in area covered by vegetation.	Awaiting material
144	Test of German 15 cm rocket, filled GA, static fired in area covered by vegetation.	Plan of Test submitted 21 March 1949
145	Test of German 15 cm rocket, filled GA, fired in area covered by vegetation (number to be determined from results of No. 140)	Awaiting completion of Test No. 140
146	Test of 4.2" chemical mortar shell, filled GA, fired into open area (number to be determined from results of Test No. 130).	Awaiting completion of Test No. 130
147	Test of 4.2" chemical mortar shell, filled GA, fired statically in covered area (nine to be fired simultaneously).	Plan of Test submitted 21 March 1949
148	Test of 4.2" chemical mortar shell, filled GA, fired into area covered by vegetation (number to be determined from results of No. 147).	Awaiting completion of Test No. 147
149	Test of M33A1 spray tank, filled unthickened GA in open from low altitude.	Awaiting spray tank
150	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in open.	Plan of Test submitted 28 March 1949
151	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped in multiple into open area (number to be determined from results of No. 150).	Awaiting completion of Test No. 150

TEST NO.	TITLE	
152	Test of single 125 lb. chemical bomb, T3E2, filled GA, with 35:1 burster ratio, fired statically in area covered by vegetation.	Plan of Test submitted 28 March 1949
153	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in covered area.	Plan of Test submitted 28 March 1949
154	Test of 125 lb chemical bomb, T3E2 filled GA, with 35:1 burster ratio dropped in multiple into covered area. (number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153
155	Test of 125 lb T3 bomb, filled GA, with burster modified as determined by Edgewood tests, dropped singly into the open.	Awaiting completion of Edgewood tests
156	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into open (number to be determined from results of No. 155)	Awaiting completion of Test No. 155
157	Test of single 125 lb. T3 bomb, filled GA with modified burster fired statically in area covered with vegetation.	Awaiting completion of Edgewood tests
158	Test of 125 lb. T3 bomb, filled GA with burster modified as determined by Edgewood tests, dropped singly into covered area.	Awaiting completion of Edgewood tests
159	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into covered area (number to be determined from results of Test No. 158).	Awaiting completion of Test No. 158
160	Test of M45 chemical bomb modified as determined by Edgewood tests, filled GA, dropped in open in small number (number to be determined by Edgewood tests.)	Awaiting completion of Edgewood tests

TEST
NO.

TIT

161	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into open in large number (number of clusters to be determined from results of Test No. 160)	Awaiting completion of Test No. 160
162	Test of modified E45 chemical bomb fired statically in area covered by vegetation (nine bombs to be fired simultaneously)	Awaiting completion of Edgewood tests
163	Test of E45 chemical bomb, modified as determined by Edgewood tests, filled GA, dropped in area covered by vegetation (number to be determined from results of Edgewood tests)	Awaiting completion of Edgewood tests
164	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into area covered by vegetation (number of clusters to be determined by results of 163)	Awaiting completion of Test No. 163
165	Test of E45 chemical bomb with various shaped charges, filled GA, dropped into open in small number (number to be determined by Edgewood tests).	Awaiting completion of Edgewood tests
166	Test of single E23 smoke pot, filled GA, functioned statically in open on land.	Plan of Test submitted 21 March 1949
167	Test of single E23 smoke pot, filled GA, functioned statically in area covered by vegetation.	Plan of Test submitted 21 March 1949
168	Test of single E23 smoke pot, filled GA, functioned statically on water with onshore wind.	Plan of Test submitted 21 March 1949
169	Multiple test of E23 smoke pot, filled GA, dropped from boat, with onshore wind to simulate smoke (number to be determined from results of Test No. 160)	Awaiting completion of Test No. 168

TEST NO.	TITLE	STATUS
170	Multiple test of E23 smoke pot, filled GA, dropped from airplane, with onshore wind to simulate smoke. (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168
171	Test of 4.2" chemical mortar shell filled GB, fired statically in the open (nine to be fired simultaneously)	Awaiting material
172	Test of 4.2" chemical mortar shell filled GB fired from mortar into open (number to be determined from results of Test No. 171).	Awaiting completion of Test No. 171
173	Test of 125 lb. T3 bomb, filled GB with modified burster, dropped singly in open.	Awaiting completion of Edgewood tests
174	Test of E45 chemical bomb, filled GB with modified burster, dropped in small quantity in open (number to be determined from Edgewood tests).	Awaiting completion of Edgewood tests
175	Test of single E23 smoke pot, filled GB, functioned statically in open on land.	Awaiting material
176	Test of single E23 smoke pot, filled HD, functioned statically in open on land.	Plan of Test submitted 7 March 1949
177	Test of single E23 smoke pot, filled HT, functioned statically in open on land.	Plan of Test submitted 10 March 1949
178	Test of single E23 smoke pot, filled HN3, functioned statically in open on land.	Plan of Test submitted 10 March 1949
179	Test of single E23 smoke pot, filled HQ, functioned statically in open on land.	Plan of Test submitted 11 March 1949
180	Test of Suit, Protective, One Piece, Impermeable, ELR1, and related items under extreme heat load (Cml C Bd. Project No. 782).	Awaiting test material

TEST (SJPPR No. 66, App B
 NO. TITLE

- 1 Test of Gas Casualty Kit, Treatment, Item 9-244-800 (New Revision)
- 182 Test of First Aid Kit, Gas, Casualty, Item 9-206-710 (New Revision)
- 183 Test of Veterinary Gas Casualty Outfit, Item 9-602-680 (New Revision)
- 184 Operational Scale Test with German KC 250 III Gr Bombs, filled with GA. Technical Command Field Test No. 114.
- 185 Test of single 250 kg German, GA filled bomb fired statically in the open under inversion or zero temperature gradient conditions.
- 186 Test of single 250 kg German, GA filled bomb dropped into open and also into covered area under inversion or zero temperature gradient conditions.

Awaiting test material

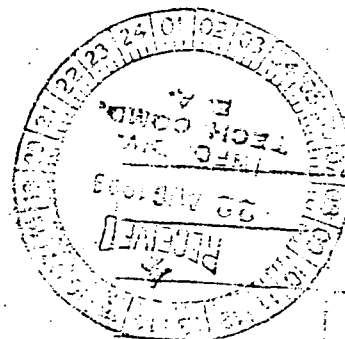
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1 APRIL 1949 THROUGH 30 APRIL 1949

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NUMBER 67

1 APRIL 1949 THROUGH 30 APRIL 1949

by

San Jose Project Technical Staff

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4	Secretary, Research Council, OCCmLC, Bldg. 330, Army Chemical Center, Md.
5 - 6	Commanding Officer, Cml C Technical Command, Army Chemical Center, Md.
7 - 8	Chief, Medical Division, Army Chemical Center, Md.
9 - 13	Technical Director, Camp Detrick, Frederick, Md.
14	President, Cml C Board, Army Chemical Center, Md.
15	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Md.
16 - 17	Research and Development Board, Technical Reference Branch, Document Section, Room 3D-641, National Military Establish- ment, Washington 25, D. C.
18	Military Applications Division, U. S. Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D. C., Attention: Chemical Officer
19 - 23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W., Washington, D. C. (Thru: Chief, Res & Eng Div., Army Chemical Center, Md.)
24 - 26	Canadian Technical Representative, Army Chemical Center, Md. (Thru: Chief, Res & Eng Div., Army Chemical Center, Md.)
27	British Liaison Officer, Army Chemical Center, Md. (Thru: Chief, Res & Eng Div., Army Chemical Center, Md.)
28	SJP Technical files
29 - 31	SJP Technical Library

REF ID: A66107

HE
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

2 May 1949

SUBJECT: San Jose Project Progress Report No. 67
Period 1 April 1949 through 30 April 1949

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.
Attention: Project Coordination Committee

1. STATUS OF REPORTS

No reports distributed during the period covered by this report.

2. PROGRESS OF TESTS DURING THE MONTH OF MARCH

- a. Single 125 Pound Chemical Bomb T3F2, GA Filled, with 35:1 Burster Ratio, Dropped in Open - SJPPT No. 150.

Plan of test submitted for approval 28 March 1949.

- b. Static Test in Area Covered by Vegetation of a Single 125 Pound Chemical Bomb T3E2, GA Filled, with a 35:1 Burster Ratio - SJPPT No. 152.

Plan of test submitted for approval 28 March 1949.

- c. Single 125 Pound Chemical Bomb, F2E2, GA Filled, with 35:1 Burster Ratio, Dropped in an Area Covered by Vegetation - SJPPT No. 153.

Plan of test submitted 28 March 1949.

(SJPPR No. 67)

3. PROGRESS (

a. Location of Entrances to Gasproof Shelters in Relation to Prevailing Wind - SJPT No. 102A.

- (1) Work was begun on the shelter to be used in this test on 13 April 1949.
- (2) Streamers to be used arrived on 27 April 1949.
- (3) Construction completed 29 April 1949.
- (4) Preliminary testing will begin on or about 2 May 1949.

b. Work on the tests listed below has been delayed pending the arrival of munitions, test animals, or both:

- (1) Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open - SJPT No. 130.

Plan of test approved with changes 29 April 1949.

- (2) Static Test of M70 (E46) Bomb, GA Filled, in the Open - SJPT No. 137.

Plan of test approved, with changes 18 April 1949.

- (3) Test of German 105 mm Shell, GA Filled, Static Fired in Open - SJPT No. 138.

Plan of test approved, with changes 29 April 1949.

- (4) Test of German 15 cm Rocket, GA Filled, Static Fired in Open (Single round and multiple, 9 fired simultaneously).

Plan of test approved, with changes 29 April 1949.

- (5) Static Test of Nine German 105 mm Shells, GA Filled, in Area Covered by Vegetation - SJPT No. 142.

Plan of test approved, with changes 25 April 1949

- (6) Static Test of German 15 cm Rocket, GA Filled, in Area Covered by Vegetation - SJPT No. 144.

Plan of test approved, with changes 25 April 1949.

(SJPPR No. 67)

- (7) Static Test of Nine 4.2 Inch Chemical Mortar Shells, GA Filled, in Area Covered by Vegetation - SJPPT No. 147.

Plan of test approved, with changes 25 April 1949.

- (8) Static Test in Open of Single E23 Smoke Pot, GA Filled - SJPPT No. 166.

Plan of test approved, with changes 22 April 1949.

- (9) Static Test in Area Covered by Vegetation of a Single E23 Smoke Pot, GA Filled - SJPPT No. 167.

Plan of test approved, with changes 22 April 1949.

- (10) Static Test in the Open of a Single E23 Smoke Pot, GA Filled - SJPPT No. 168.

Plan of test approved, with changes 22 April 1949.

- (11) Static Test in the Open of a Single E23 Smoke Pot, HD Filled - SJPPT No. 176.

Plan of test approved, with changes 25 April 1949.

- (12) Static Test in the Open of a Single E23 Smoke Pot, HT Filled - SJPPT No. 177.

Plan of test approved, with changes 25 April 1949.

- (13) Static Test in the Open of a Single E23 Smoke Pot, HN3 Filled - SJPPT No. 178.

Plan of test approved, with changes 25 April 1949.

- (14) Static Test in the Open of a Single E23 Smoke Pot, HQ Filled - SJPPT No. 179.

Plan of test approved, with changes 25 April 1949.

- (15) Surveillance of Aged CK in M70, M78 and M79 Bombs - SJPPT No. 135.

Results of sampling performed on this test to date are included as Appendix C. Work on M70 bombs cannot be carried on until after necessary tapping devices

4. ARMY DAY

- a. Observance of Army Day by the San Jose Project was conducted in two separate phases:

- (1) The first phase was held on the base and consisted of a conducted tour of facilities and a demonstration of materiel on Water Island. A group of approximately 35 local dignitaries were in attendance. Among the group were Honorable Morris F. deCastro, Acting Governor; Honorable Herman E. Moore, Judge of the District Court; Honorable Walter I. M. Hodge, Chairman of the Legislative Assembly; members of local legislative bodies and prominent local businessmen.
- (2) The second phase consisted of an exhibit in Roosevelt Park, Charlotte Amalie, of Chemical Corps materiel in use at the San Jose Project. Such items as chemical munitions, special vehicles and protective equipment were featured. The exhibit was held from nine in the morning until four in the afternoon and was open to the public. An estimated fifteen hundred persons witnessed the exhibit.

5. PROGRESS OF TESTS

- a. A complete list of tests scheduled for San Jose Project, together with current status is included as Appendix B.

6. CONSTRUCTION

- a. Necessary construction as outlined in SJPPR No. 66 of accommodations for test animals has been completed.

7. METEOROLOGY

- a. Weather summary for the month of April 1949 is included as Appendix A.

8. TRAINING

- a. Gas mask drill and gas chamber exercise was conducted for approximately forty (40) enlisted men on 20 April 1949.

(SJPPR No. 67)

9. PERSONNEL

- a. Captain Donald D. Dannenberg, Cml C, reported for duty and was assigned duties as Chief of Photographic and Meteorological Sections, vice Captain Luke H. West, who is scheduled for rotation early in May.

10. VISITORS

- a. During the period covered by this report, the following persons visited the Project:

27 April 1949 Messrs. Clark and Chapman, from the Panama District Engineer Office, arrived in connection with Technical construction matters.


JAY S. STOCKHARDT
Captain, Cml C
Deputy Technical Director

APPROVED:


PAUL R. SMITH
Colonel, Cml C
Commanding

(SJPPR No. 67, 1

APPENDIX B
PROGRESS OF TESTS

. DOWNGRADED AT 3 YEAR INTER
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PROGRESS OF TESTS, SAN JOSE PROJECT

TEST NO.	TITLE	STATUS
89	Surveillance of Bombs, Chemical 125 lb., T-3, H filled, Heresite coated and T-3, HD filled not coated.	Current, long-range sampling.
99	Surveillance of VKL.	Test Completed, Report Distributed.
102A	Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Bd. Test No. 724)	Plan of Test submitted 7 Mar 49.
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA filled, in the Open	Plan of Test approved, with changes, 29 April 49
132	Surveillance of Bomb, Particulate 4 lb., E-1	Test Completed, Report Distributed.
135	Surveillance of CK Stored in Bombs and Ton Containers under Tropical Conditions.	In progress - awaiting material.
136	Test with M70 Bomb, filled HD, in open and in area covered with vegetation, static fired, with onshore and with offshore winds.	Test Completed, Report Distributed.
137	Test of M70 Bomb, filled GA (E46) in open area, static fired.	Plan of Test approved with changes, 18 April 49
138	Test of German 105 mm Shell, filled GA, static fired in open (approx. 9 shells fired simultaneously).	Plan of Test approved, with changes, 29 April 1949
139	Test of German 105 mm shell, filled GA, fired from gun into open (number of rounds to be determined by results from Test No. 138).	Awaiting completion of Test No. 138
140	Test of German 15 cm rocket, filled GA, static fired in open. (single round and multiple, 9 fired simultaneous)	Plan of Test approved, with changes, 29 April 49

TEST
NO.

TITLE

141 Test of German 15 cm rocket,
filled GA, fired into open from
from launcher (number to be de-
termined from results of No. 140)

Awaiting completion of Test No. 140

142 Test of German 105 mm shell,
filled GA, static fired in area
covered by vegetation (approx. 9
shells fired simultaneously)

Plan of Test approved with changes,
25 April 49.

143 Test of German 105 mm shell,
filled GA, fired from gun in
area covered by vegetation.

Awaiting material.

144 Test of German 15 cm rocket,
filled GA, static fired in area
covered by vegetation.

Plan of Test approved with changes,
25 April 49

145 Test of German 15 cm rocket,
filled GA, fired in area covered
by vegetation (number to be de-
termined from results of No. 140)

Awaiting completion of Test No. 140

146 Test of 4.2" chemical mortar
shell, filled GA, fired into open
area (number to be determined
from results of Test No. 130).

Awaiting completion of Test No. 130.

147 Test of 4.2" chemical mortar
shell, filled GA, fired statically
in covered area (nine to be fired
simultaneously).

Plan of Test approved with changes,
25 April 49.

148 Test of 4.2" chemical mortar
shell, filled GA, fired into area
covered by vegetation (number to
be determined from results of No.
147).

Awaiting completion of Test No. 147.

149 Test of M33A1 spray tank, filled
unthickened GA in open from low
altitude.

Awaiting material.

150 Test of 125 lb. chemical bomb,
T3E2, filled GA with 35:1 burster
ratio, dropped singly in open.

Plan of Test submitted 28 March 49.

151 Test of 125 lb. chemical bomb,
T3E2, filled GA with 35:1
ratio, dropped in multiple
open area (number to be de-
termined from results of No.

Awaiting completion of Test No. 150.

TEST
NO.

TITLE

152	Test of single 125 lb. chemical bomb, T3E2, filled GA, with 35:1 burster ratio, fired statically in area covered by vegetation.	Plan of Test submitted 28 Mar 49.
153	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in covered area.	Plan of Test submitted 28 Mar 49.
154	Test of 125 lb chemical bomb, T3E2 filled GA, with 35:1 burster ratio dropped in multiple into covered area. (number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153.
155	Test of 125 lb T3 bomb, filled GA, with burster modified as determined by Edgewood tests, dropped singly into the open.	Awaiting completion of Edgewood tests.
156	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into open (number to be determined from results of No. 155)	Awaiting completion of Test No. 155.
157	Test of single 125 lb. T3 bomb, filled GA with modified burster fired statically in area covered with vegetation.	Awaiting completion of Edgewood tests.
158	Test of 125 lb. T3 bomb, filled GA with burster modified as determined by Edgewood tests, dropped singly into covered area.	Awaiting completion of Edgewood tests.
159	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into covered area (number to be determined from results of Test No. 158)	Awaiting completion of Test No. 158.
160	Test of E45 chemical bomb modified as determined by Edgewood tests, filled GA, dropped in open in small number (number to be determined by Edgewood tests.)	Awaiting completion of Edgewood tests.

TEST
NO.

TITLE

161	Test of E45 chemical bomb, GA, modified as determined Edgewood tests, dropped in in large number (number of to be determined from results of Test No. 160)	f Test No. 160.
162	Test of modified E45 chemical bomb fired statically in area covered by vegetation (nine bombs to be fired simultaneously)	Awaiting completion of Edgewood tests.
163	Test of E45 chemical bomb, modified as determined by Edgewood tests, filled GA, dropped in area covered by vegetation (number to be determined from results of Edgewood tests)	Awaiting completion of Edgewood tests.
164	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into area covered by vegetation (number of clusters to be determined by results of 163)	Awaiting completion of Test No. 163.
165	Test of E45 chemical bomb with various shaped charges, filled GA, dropped into open in small number (number to be determined by Edgewood tests).	Awaiting completion of Edgewood tests.
166	Test of single E23 smoke pot, filled GA, functioned statically in open on land.	Plan of Test approved with changes, 22 April 49.
167	Test of single E23 smoke pot, filled GA, functioned statically in area covered by vegetation.	Plan of Test approved with changes, 22 April 49.
168	Test of single E23 smoke pot, filled GA, functioned statically on water with onshore wind.	Plan of Test approved with changes, 22 April 49.
169	Multiple test of E23 smoke pot, filled GA, dropped from boat, with onshore wind to simulate (number to be determined results of Test No. 168)	Awaiting completion of Test No. 168.

TEST
NO.

TITLE

170	Multiple test of E23 smoke pot, filled GA, dropped from airplane, with onshore wind to simulate smoke. (Number to be determined from results of Test No. 168).	
171	Test of 4.2" chemical mortar shell filled GB, fired statically in the open (nine to be fired simultaneously)	Awaiting material.
172	Test of 4.2" chemical mortar shell filled GB fired from mortar into open (number to be determined from results of Test No. 171).	Awaiting completion of Test No. 171.
173	Test of 125 lb. T3 bomb, filled GB with modified burster, dropped singly in open.	Awaiting completion of Edgewood tests.
174	Test of E45 chemical bomb, filled GB with modified burster, dropped in small quantity in open (number to be determined from Edgewood tests).	Awaiting completion of Edgewood tests.
175	Test of single E23 smoke pot, filled GB, functioned statically in open on land.	Awaiting material.
176	Test of single E23 smoke pot, filled HD, functioned statically in open on land.	Plan of Test approved with changes, 25 April 49.
177	Test of single E23 smoke pot, filled HT, functioned statically in open on land.	Plan of Test approved with changes, 25 April 49
178	Test of single E23 smoke pot, filled HN3, functioned statically in open on land.	Plan of Test approved with changes, 25 April 49.
179	Test of single E23 smoke pot, filled HQ, functioned statically in open on land.	Plan of Test approved with changes, 25 April 49.
180	Test of Suit, Protective Piece, Impermeable, EIRI, related items under extreme load (Cml C Bd. Project No. 782).	Awaiting material.

TEST

NO.	TITLE	
181	Test of Gas Casualty Kit, treatment, Item 9-244-800 (New Revision)	Awaiting test material.
182	Test of First Aid Kit, Gas, Casualty, Item 9-206-710 (New Revision)	Awaiting test material.
183	Test of Veterinary Gas Casualty Outfit, Item 9-602-680. (New Revision)	Awaiting test material.
184	Operational Scale Test with German KC 250 III Gr Bombs, filled with GA. Technical Command Field Test No. 114.	Awaiting material.
185	Test of single 250 kg German, GA filled bomb fired statically in the open under inversion or zero temperature gradient conditions.	Awaiting material.
186	Test of single 250 kg German, GA filled bomb dropped into open and also into covered area under inversion or zero temperature gradient conditions.	Awaiting material.

APPENDIX C

SURVEILLANCE OF AGED CK IN M70, M78 AND M79 BOMBS

TEST NO. 135

RESULTS TO DATE

Surveillance of Aged CK in M70, M78 and M79 Bombs, Test No. 135

Results To Date

After obtaining a trial sample on 2 December 1948, actual sampling work in connection with this test was begun on 6 December 1948. Results of these and subsequent samplings appear below.

M78 Bombs

On the following bombs, the valve was clogged to the extent that no samples could be obtained and no pressure recorded:

Lot Number	Bomb Number	Date Filled
183	14	Aug-44
183	7	Aug-44
183	17	Aug-44
222	15	Sept-44

The valves in the above bombs were changed and a sample was obtained from Bomb #15, Lot No. 222, the results being shown in the table which follows. However, still no sample or recordable pressure could be obtained from Bombs 14, 7, and 17, Lot No. 183. Tapping these bombs indicated that the contents were largely solids. The bombs were weighed, vented and weighed once again; and the following results were obtained: (Pressure was taken when bombs were tapped)

Date	Lot No.	Bomb No.	Date Filled	Abs. Press.	Total Non-volatile Res.
13 Dec 48	183	14	Aug-44	55 lbs.	99.4%
13 Dec 48	183	7	Aug-44	50 lbs.	98.8%
13 Dec 48	183	17	Aug-44	50 lbs.	99.4%

One other bomb remained in Lot Number 183. This bomb was sampled three times due to its high acidity content and the following results obtained:

Date	Lot No.	Bomb No.	Date Filled	Abs. Pressure	% Acidity	% Soluble Non-volatile Res.
7 Dec 48	183	10	Aug-44	40	.459	6.10
13 Dec 48	183	10	Aug-44	39	.538	9.10
15 Dec 48	183	10	Aug-44	41	.668	8.62

Two additional samples were taken from this bomb on 31 March 1949 with the following results:

Date	Lot No.	Bomb No.	Abs. Pressure	% Acidity	% Soluble Non-volatile Residue
31 Mar 49	183	10	41	.75	19.95
31 Mar 49	183	10	41	.58	19.25

This bomb was vented and found to be 12.9% non-soluble residue, and it was destroyed.

(SJPPR No. 67, Apr

Other M78 Bombs

Date	Lot No.	Bomb No.	Date Filled	Abs. Pressure	% Acidity	% Soluble Non-volatile Residue
6 Dec 48	206	29	Aug-44	39	.075	.258
6 Dec 48	206	35	Aug-44	39	.103	.237
6 Dec 49	206	12	Aug-44	39	.099	.225
6 Dec 48	206	27	Sept-44	39	.103	.329
6 Dec 48	206	19	Aug-44	39	.091	.173
6 Dec 48	206	32	Aug-44	37	.108	.263
7 Dec 48	206	5	Aug-44	37	.087	.312
7 Dec 48	206	8	Aug-44	38	.095	.258
7 Dec 48	206	21	Aug-44	41	.107	.220
7 Dec 48	206	22	Aug-44	39	.087	.243
7 Dec 48	206	11	Aug-44	39	.107	.204
7 Dec 48	206	34	Aug-44	40	.092	.183
7 Dec 48	206	13	Aug-44	39	.108	.244
7 Dec 48	206	23	Aug-44	42	.076	.176
2 Dec 48	207	24	Aug-44	42	.146	.269
6 Dec 48	207	31	Aug-44	42	.239	.540
7 Dec 48	207	28	Aug-44	40	.112	.288
7 Dec 48	207	25	Aug-44	39	.122	.251
7 Dec 48	207	2	Aug-44	39	.120	.220
7 Dec 48	207	20	Aug-44	42	.112	.270
7 Dec 48	222	26	Sept-44	37	.057	.233
7 Dec 48	222	9	Sept-44	38	.076	.143
14 Dec 48	222	15	Sept-44	31	.099	.421
7 Dec 48	224	3	Sept-44	36	.109	.246
7 Dec 48	224	1	Sept-44	38	.076	.207
6 Dec 48	None	13A	Aug-44	43	.101	.268
7 Dec 48	None	6	Aug-44	36	.138	.267
7 Dec 48	None	4	Aug-44	37	.073	.275
7 Dec 48	None	18	Aug-44	37	.085	.280

Bomb 10 destroyed
Bombs 14, 7, 17 unaccounted for.

(SJPPR No. 67, App. C)

M79 Bombs

On the following bombs, the valve was clogged to the extent that no samples could be obtained and no pressure recorded:

Lot Number	Bomb Number	Date Filled
65	56	June-44
65	60	June-44
456	53	Nov-44

The valves in the above bombs were changed and samples were obtained, the results being shown in the table which follows. It is believed that these bombs may at some time have been stored with the valve down causing solids to settle in the valve. Results obtained follow:

Date	Lot No.	Bomb No.	Date Filled	Abs. Pressure	% Acidity	% Soluble Non-volatile Residue
7 Dec 48	65	53	June-44	41	.103	.308
7 Dec 48	65	59	June-44	41	.083	.172
7 Dec 48	65	57	June-44	38	.096	.225
15 Dec 48	65	60	June-44	35	.087	.203
16 Dec 48	65	55	June-44	37	.084	.279
7 Dec 48	456	55	Nov-44	41	.163	.348
15 Dec 48	456	53	Nov-44	35	.068	.178

Temperature readings were taken at frequent intervals throughout sampling. Temperatures obtained in this manner ranged from 80 to 86°F.

Equipment necessary for sampling of M70 bombs has not yet been received.

Meteorological Data

The following data were obtained inside the surveillance building:

	Maximum Temperature	Minimum Temperature	Mean Maximum Temperature	Mean Minimum Temperature
Dec 48	90°F	70°F	86°F	76°F
Jan 49	87	63	82	65
Feb 49	87	66	84	68
Mar 49	88	65	82	69

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 68
1 MAY 1949 THROUGH 31 MAY 1949

JUN 23 1949

SAN JOSE PROJECT PROGRESS REPORT

NUMBER 68

1 MAY 1949 THROUGH 31 MAY 1949

by

San Jose Project Technical Staff

COPY NO. 22

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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

5 June 1949

SUBJECT: San Jose Project Progress Report No. 68
Period 1 May 1949 through 31 May 1949

17x Chief, Chemical Corps
Department of the Army
Washington 25, D. C.
Attention: Project Coordination Committee

1. STATUS OF REPORTS

No report distributed during the period covered by this report.

2. PROGRESS OF TESTS DURING THE MONTH OF MAY

- a. Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio, Dropped in Open - SJPPT No. 150.

Plan of test approved with changes, 9 May 1949.

- b. Static Test in Area Covered by Vegetation of a Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio - SJPPT No. 152.

Plan of test approved with changes, 9 May 1949.

- c. Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio, Dropped in an Area Covered by Vegetation - SJPPT No. 153.

Plan of test approved with changes, 9 May 1949.

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- (1) Performance of test delayed for a three-day period due to further amendments to previously approved plan of test. Amendments received on 9 May 1949.
 - (2) Conduct of test delayed further by arrival of ship with goats, straw and feed. All technical personnel were utilized in unloading on 30 and 31 May 1949. Test cannot be resumed until approximately 6 or 7 June 1949.
 - (3) Approximately 80% of the work involved in Phase 1 (shelter on upgrade slope in relation to wind) has been completed.
- e. Work on tests listed below has been delayed pending the arrival of munitions, test animals, or both:
- (1) Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open - SJPT No. 130.
 - (2) Static Test of M70 (E46) Bomb, GA Filled, in the Open - SJPT No. 137.
 - (3) Test of German 105 mm Shell, GA Filled, Static Fired in Open - SJPT No. 138.
 - (4) Test of German 15 cm Rocket, GA Filled, Static Fired in Open (Single round and multiple, 9 fired simultaneously)* SJPT No. 140
 - (5) Static Test of Nine German 105 mm Shells, GA Filled, in Area Covered by Vegetation - SJPT No. 142.
 - (6) Static Test of German 15 cm Rocket, GA Filled, in Area Covered by Vegetation - SJPT No. 144.
 - (7) Static Test of Nine 4.2 Inch Chemical Mortar Shells, GA Filled, in Area Covered by Vegetation - SJPT No. 147.
 - (8) Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio, Dropped in Open - SJPT No. 150.

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- (9) Static Test in Area Covered by Vegetation of a Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio - SJPPT No. 152.
- (10) Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio, Dropped in an Area Covered by Vegetation - SJPPT No. 153.
- (11) Static Test in Open of Single E23 Smoke Pot, GA Filled - SJPPT No. 166.
- (12) Static Test in Area Covered by Vegetation of a Single E23 Smoke Pot, GA Filled - SJPPT No. 167.
- (13) Static Test in the Open of a Single E23 Smoke Pot, GA Filled - SJPPT No. 168.
- (14) Static Test in the Open of a Single E23 Smoke Pot, HD Filled - SJPPT No. 176.
- (15) Static Test in the Open of a Single E23 Smoke Pot, HT Filled - SJPPT No. 177.
- (16) Static Test in the Open of a Single E23 Smoke Pot, HX3 Filled - SJPPT No. 178.
- (17) Static Test in the Open of a Single E23 Smoke Pot, HQ Filled - SJPPT No. 179.

3. TEST ANIMALS

- a. Goats for use in future tests arrived 30 May 1949. The shipment included 196 goats and three kids born enroute. Goats were transferred from ship to barge, hauled to Water Island and transported by truck from the barge to corrals recently constructed for this purpose.
- b. Pigeons for similar use have not yet arrived.

4. PROGRESS OF TESTS

- a. A complete list of tests scheduled for San Jose Project together with pertinent data is included as Appendix B.

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5. METEOROLOGY

- a. Weather summary for the month of May 1949 is included as Appendix A.

6. DESIGN OF FACILITIES

- a. The Chief of Engineers has allotted \$15,000 to the San Jose Project for use in designing future facilities.

7. PERSONNEL

- a. The following personnel departed this Project on 12 May 1949 for rotation to Z of I and reassignment:

Captain James H. Granade
Captain Luke H. West
Captain Robert J. Eder
Captain Alvin H. Bowles

- b. Mr. George Van Bibber arrived this Project 2 May 1949, on TDY of approximately 30 days in connection with technical activities. Mr. Van Bibber's duty has recently been extended for a 30-day period by radiogram from Office of the Chief, Cml C.

8. VISITORS

- a. During the period covered by this report, the following persons visited the Project:

2 May 1949

Dr. Worthley, Dept. of Army and
Mr. Peake, CCCml C arrived in connection with technical activities and departed same day.

9 May 1949

Brigadier General Sibert, CG
USARFANT, arrived for one day inspection of this Project.

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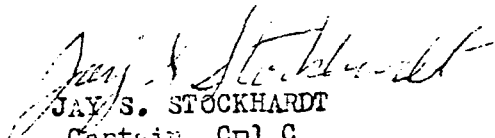
(SJPPR No. 68)

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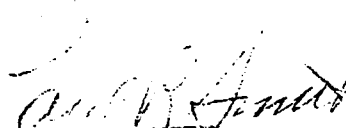
8. VISITORS (cont'd)

18 May 1949

Admiral Barbey, Commandant, Tenth
Naval District, arrived for a brief
visit to San Jose Project - departed
same day.


JAY S. STOCKHARDT
Captain, Cnl C
Deputy Technical Director

APPROVED:


PAUL R. SMITH
Colonel, CnlC
Commanding

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(3JPPR No. 68, App. B)

APPENDIX B

PROGRESS OF TESTS

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PROGRESS OF TESTS, SAN JOSE PROJECT

TEST NO.	TITLE	STATUS
89	Surveillance of Bombs, Chemical 125 lb., T-3, H filled, Heresite coated and T-3, HD filled not coated.	Current, long-range sampling
99	Surveillance of VKL.	Test Completed, Report Distributed.
102A	Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Bd. Test No. 724)	Plan of test approved with changes, 9 May 1949
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA filled, in the Open	Plan of test approved with changes, 29 April 1949.
132	Surveillance of Bomb, Particulate 4 lb., E-1	Test Completed, Report Distributed.
135	Surveillance of CK Stored in Bombs and Ton Containers under Tropical Conditions.	In progress, awaiting material.
136	Test with M70 Bomb, filled HD, in open and in area covered with vegetation, static fired, with onshore and with offshore winds.	Test Completed, Report Distributed.
137	Test of M70 Bomb, filled GA (E46) in open area, static fired.	Plan of test approved with changes, 18 April 1949.
138	Test of German 105 mm Shell, filled GA, static fired in open (approx. 9 shells fired simultaneously).	Plan of test approved with changes, 29 April 1949.
139	Test of German 105 mm shell, filled GA, fired from gun into open (number of rounds to be determined by results from Test No. 138.	Awaiting completion of Test No. 138.
140	Test of German 15 cm rocket, filled GA, static fired in open. (single round and multiple, 9 fired simultaneously)	Plan of test approved with changes, 29 April 1949.

TEST NO.	TITLE	STATUS
141	Test of German 15 cm rocket, filled GA, fired into open from launcher (number to be determined from results of No. 140)	Awaiting completion of Test No. 140.
142	Test of German 105 mm shell, filled GA, static fired in area covered by vegetation (approx. 9 shells fired simultaneously)	Plan of test approved with changes, 25 April 1949.
143	Test of German 105 mm shell, filled GA, fired from gun in area covered by vegetation.	Awaiting material.
144	Test of German 15 cm rocket, filled GA, static fired in area covered by vegetation.	Plan of test approved with changes, 25 April 1949.
145	Test of German 15 cm rocket, filled GA, fired in area covered by vegetation (number to be determined from results of No. 140)	Awaiting completion of Test No. 140.
146	Test of 4.2" chemical mortar shell, filled GA, fired into open area (number to be determined from results of Test No. 130).	Awaiting completion of Test No. 130.
147	Test of 4.2" chemical mortar shell, filled GA, fired statically in covered area (nine to be fired simultaneously).	Plan of test approved with changes, 25 April 1949.
148	Test of 4.2" chemical mortar shell, filled GA, fired into area covered by vegetation (number to be determined from results of No. 147).	Awaiting completion of Test No. 147.
149	Test of M33A1 spray tank, filled unthickened GA in open from low altitude.	Awaiting material.
150	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in open.	Plan of test approved with changes, 9 May 1949.
151	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped in multiple into open area (number to be determined from results of No. 150)	Awaiting completion of Test No. 150.

TEST NO.	TITLE	STATUS
152	Test of single 125 lb. chemical bomb, T3E2, filled GA, with 35:1 burster ratio, fired statically in area covered by vegetation.	Plan of test approved with changes, 9 May 1949.
153	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in covered area.	Plan of test approved with changes, 9 May 1949.
154	Test of 125 lb chemical bomb, T3E2 filled GA, with 35:1 burster ratio dropped in multiple into covered area. (number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153.
155	Test of 125 lb T3 bomb, filled GA, with burster modified as determined by Edgewood tests, dropped singly into the open.	Awaiting completion of Edgewood tests.
156	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into open (number to be determined from results of No. 155)	Awaiting completion of Test No. 155.
157	Test of single 125 lb. T3 bomb, filled GA with modified burster fired statically in area covered with vegetation.	Awaiting completion of Edgewood tests.
158	Test of 125 lb. T3 bomb, filled GA with burster modified as determined by Edgewood tests, dropped singly into covered area.	Awaiting completion of Edgewood tests.
159	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into covered area (number to be determined from results of Test No. 158)	Awaiting completion of Test No. 158.
160	Test of B45 chemical bomb modified as determined by Edgewood tests, filled GA, dropped in open in small number (number to be determined by Edgewood tests.)	Awaiting completion of Edgewood tests.

TEST
NO.

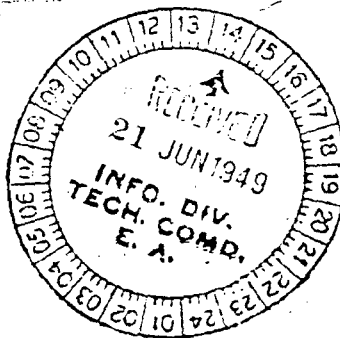
TITLE

STATUS

161	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into open in large number (number of clusters to be determined from results of Test No. 160)	Awaiting completion of Test No. 160.
162	Test of modified E45 chemical bomb fired statically in area covered by vegetation (nine bombs to be fired simultaneously)	Awaiting completion of Edgewood tests.
163	Test of E45 chemical bomb, modified as determined by Edgewood tests, filled GA, dropped in area covered by vegetation (number to be determined from results of Edgewood tests)	Awaiting completion of Edgewood tests.
164	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into area covered by vegetation (number of clusters to be determined by results of 163).	Awaiting completion of Test No. 163.
165	Test of E45 chemical bomb with various shaped charges, filled GA, dropped into open in small number (number to be determined by Edgewood tests).	Awaiting completion of Edgewood tests.
166	Test of single E23 smoke pot, filled GA, functioned statically in open on land.	
167	Test of single E23 smoke pot, filled GA, functioned statically in area covered by vegetation.	Plan of Test approved with changes, 22 April 49.
168	Test of single E23 smoke pot, filled GA, functioned statically on water with onshore wind.	Plan of Test approved with changes, 22 April 49.
169	Multiple test of E23 smoke pot, filled GA, dropped from boat, with onshore wind to simulate smoke (number to be determined from results of Test No. 168)	Plan of Test approved with changes, 22 April 49. Awaiting completion of Test No. 168.

TEST NO.	TITLE	STATUS
170	Multiple test of E23 smoke pot, filled GA, dropped from airplane, with onshore wind to simulate smoke. (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168.
171	Test of 4.2" chemical mortar shell filled GB, fired statically in the open (nine to be fired simultaneously)	Awaiting material.
172	Test of 4.2" chemical mortar shell filled GB fired from mortar into open (number to be determined from results of Test No. 171).	Awaiting completion of Test No. 171.
173	Test of 125 lb. T3 bomb, filled GB with modified burster, dropped singly in open.	Awaiting completion of Edgewood tests.
174	Test of E45 chemical bomb, filled GB with modified burster, dropped in small quantity in open (number to be determined from Edgewood tests).	Awaiting completion of Edgewood tests.
175	Test of single E23 smoke pot, filled GB, functioned statically in open on land.	Awaiting material.
176	Test of single E23 smoke pot, filled HD, functioned statically in open on land.	Plan of Test approved with changes, 25 April 49.
177	Test of single E23 smoke pot, filled HT, functioned statically in open on land.	Plan of Test approved with changes, 25 April 49.
178	Test of single E23 smoke pot, filled HN3, functioned statically in open on land.	Plan of Test approved with changes, 25 April 49.
179	Test of single E23 smoke pot, filled HQ, functioned statically in open on land.	Plan of Test approved with changes, 25 April 49.
180	Test of Suit, Protective, One Piece, Impermeable, ELR1, and related items under extreme heat load (Cml C Bd. Project No. 782).	Awaiting material.

TEST NO.	TITLE	STATUS
181	Test of Gas Casualty Kit, Treatment, Item 9-244-800 (New Revision)	
182	Test of First Aid Kit, Gas, Casualty, Item 9-206-710 (New Revision)	Awaiting test material.
183	Test of Veterinary Gas Casualty Outfit, Item 9-602-680 (New Revision)	Awaiting test material.
184	Operational Scale Test with German KC 250 III Gr Bombs, filled with GA. Technical Command Field Test No. 114.	Awaiting material.
185	Test of single 250 kg German, GA filled bomb fired statically in the open under inversion or zero temperature gradient conditions.	Awaiting material.
186	Test of single 250 kg German, GA filled bomb dropped into open and also into covered area under inversion or zero temperature gradient conditions.	Awaiting material.



SAN JOSE PROJECT PROGRESS REPORT
NUMBER 69
1 JUNE 1949 THROUGH 30 JUNE 1949

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 69

1 JUNE 1949 THROUGH 30 JUNE 1949

by

San Jose Project Technical Staff

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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

MEMO

5 July 1949

SUBJECT: San Jose Project Progress Report No. 69
Period 1 June 1949 through 30 June 1949

To: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.
Attention: Project Coordination Committee

1. STATUS OF REPORTS

a. The following special report was distributed during the period covered by this report:

<u>Title</u>	<u>Date of Test</u>	<u>Report Distributed</u>
SUPR No. ST-3. Aluminum Sulfate Water Treatment (By request of Naval Research Laboratory)	25 May 1949 through 10 June 1949	21 June 1949

2. PROGRESS OF TESTS DURING THE MONTH OF JUNE

- a. Location of Entrances to Gasproof Shelters in Relation to Prevailing Wind -- SJPPPT No. 102-A
- (1) Phase 1 of this test has been completed.
 - (2) The location for Phase 2 has been selected and cleared and the shelter is at the present time being moved to this new location
- b. Surveillance of Aged, CK in M70, M78 and M79 Bombs -- SJPPPT No. 135.

Results of recent sampling performed in this test are included as Appendix C.

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(SJPPR No. 69)

- (15) Static Test in the Open of a Single E23 Smoke Pot, HT Filled - SJPPT No. 177.
- (16) Static Test in the Open of a Single E23 Smoke Pot, HN3 Filled - SJPPT No. 178.
- (17) Static Test in the Open of a Single E23 Smoke Pot, HQ Filled - SJPPT No. 179.

3. TEST ANIMALS

- a. Pigeons for test purposes were not shipped to this Project during the month of June due to insufficient funds for procurement in the recent fiscal year. This information was received from the Chief, Proving Ground Section, Development Branch, Army Chemical Center, Maryland, in a letter dated 3 June 1949.

4. PROGRESS OF TESTS

- a. A complete list of tests scheduled for San Jose Project, together with pertinent information, is included as Appendix B.

5. FUTURE CONSTRUCTION

- a. Messrs. Tatum and Davis from the Panama Engineer District arrived on 17 June 1949 for the purpose of conducting a survey of planned construction at San Jose Project. The survey included detailed study of all planned construction, as well as several conferences with Technical personnel, this Project. Messrs. Tatum and Davis departed 23 June 1949 with sufficient information and drawings to publish these data in a request for contractor bids.

6. METEOROLOGY

- a. Weather summary for the month of June 1949 is included as Appendix A.

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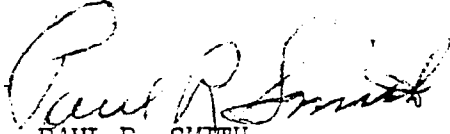
7. PERSONNEL

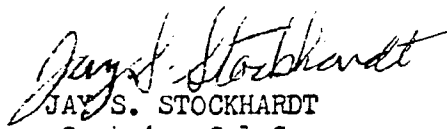
- a. Captain Henry M. Cook, Post Surgeon, departed this Project on 21 June 1949 for rotation to Z of I.
- b. Miss Angela Bornn, Chemist, P-2, arrived on 1 June 49 to work in the Technical Laboratory. Her position number as listed on the Personnel Authorization Table for San Jose Project, Technical Division, is 60.31-5.
- c. Mr. Miles Hardenburgh, Chemical Engineer, arrived this Project 2 June 1949, and was assigned to duty with the Field Test Group. His position number as listed on the Personnel Authorization Table for San Jose Project, Technical Division, is 60.32-1.

8. VISITORS

- a. During the period covered by this report there were no visitors at the Project.

APPROVED:


PAUL R. SMITH
Colonel, CmlC
Commanding


JAY S. STOCKHARDT
Captain, Cml C
Deputy Technical Director

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(OFFER NO. 69, APP. B)

APPENDIX B

PROGRESS OF TESTS

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~~PROGRESS OF TESTS, SAN JOSE PROJECT~~

TEST NO.	TITLE	STATUS
89	Surveillance of Bombs, Chemical 125 lb., T-3, H filled, Heresite coated and T-3, HD filled not coated.	Current, long-range sampling
99	Surveillance of VKL.	Test Completed, Report Distributed.
102A	Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Bd. Test No. 724)	Test in progress
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA filled, in the Open	Plan of Test approved with changes - 29 April 1949
132	Surveillance of Bomb, Particulate 4 lb., E-1	Test Completed, Report Distributed.
135	Surveillance of CK Stored in Bombs and Ton Containers under Tropical Conditions.	Test in Progress
136	Test with M70 Bomb, filled HD, in open and in area covered with vegetation, static fired, with onshore and with offshore winds.	Test Completed, Report Distributed.
137	Test of M70 Bomb, filled GA (E46) in open area, static fired.	Plan of Test approved with changes - 18 April 1949
138	Test of German 105 mm Shell, filled GA, static fired in open (approx. 9 shells fired simultaneously).	Plan of Test approved with Changes - 29 April 1949
139	Test of German 105 mm shell, filled GA, fired from gun into open (number of rounds to be determined by results from Test No. 138.	Awaiting completion of Test No. 138
140	Test of German 15 cm rocket, filled GA, static fired in open. (single round and multiple, 9 fired simultaneously)	Plan of Test approved with changes - 29 April 1949

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TEST
NO.

TITLE

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141 Test of German 15 cm rocket,
filled GA, fired into open from
from launcher (number to be de-
termined from results of No. 140)

A

Plan of test approved with changes,
25 April 1949.

142 Test of German 105 mm shell,
filled GA, static fired in area
covered by vegetation (approx. 9
shells fired simultaneously)

143 Test of German 105 mm shell,
filled GA, fired from gun in
area covered by vegetation.

Awaiting material.

Plan of test approved with changes,
25 April 1949.

144 Test of German 15 cm rocket,
filled GA, static fired in area
covered by vegetation.

145 Test of German 15 cm rocket,
filled GA, fired in area covered
by vegetation (number to be de-
termined from results of No. 140)

Awaiting completion of Test No. 140.

146 Test of 4.2" chemical mortar
shell, filled GA, fired into open
area (number to be determined
from results of Test No. 130).

Awaiting completion of Test No. 130.

147 Test of 4.2" chemical mortar
shell, filled GA, fired statically
in covered area (nine to be fired
simultaneously).

Plan of test approved with changes,
25 April 1949.

148 Test of 4.2" chemical mortar
shell, filled GA, fired into area
covered by vegetation (number to
be determined from results of No.
147).

Awaiting completion of Test No. 147.

149 Test of M33A1 spray tank, filled
unthickened GA in open from low
altitude.

Awaiting material.

Plan of test approved with changes,
9 May 1949.

150 Test of 125 lb. chemical bomb,
T3E2, filled GA with 35:1 burster
ratio, dropped singly in open.

151 Test of 125 lb. chemical bomb,
T3E2, filled GA with 35:1 burster
ratio, dropped in multiple into
open area (number to be deter-
mined from results of No. 150)

Awaiting completion of Test No. 150.

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TEST
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152	Test of single 125 lb. chemical bomb, T3E2, filled GA, with 35:1 burster ratio, fired statically in area covered by vegetation.	Plan of test approved with changes, 9 May 1949.
153	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in covered area.	Plan of test approved with changes, 9 May 1949.
154	Test of 125 lb chemical bomb, T3E2 filled GA, with 35:1 burster ratio dropped in multiple into covered area. (number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153.
155	Test of 125 lb T3 bomb, filled GA, with burster modified as determined by Edgewood tests, dropped singly into the open.	Awaiting completion of Edgewood tests.
156	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into open (number to be determined from results of No. 155)	Awaiting completion of Test No. 155.
157	Test of single 125 lb. T3 bomb, filled GA with modified burster fired statically in area covered with vegetation.	Awaiting completion of Edgewood tests.
158	Test of 125 lb. T3 bomb, filled GA with burster modified as determined by Edgewood tests, dropped singly into covered area.	Awaiting completion of Edgewood tests.
159	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into covered area (number to be determined from results of Test No. 158)	Awaiting completion of Test No. 158.
160	Test of B45 chemical bomb modified as determined by Edgewood tests, filled GA, dropped in open in small number (number to be determined by Edgewood tests)	Awaiting completion of Edgewood tests.

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TEST
NO.

TITLE

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161	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into open in large number (number of clusters to be determined from results of Test No. 160)	Awaiting completion of Test No. 160.
162	Test of modified E45 chemical bomb fired statically in area covered by vegetation (nine bombs to be fired simultaneously)	Awaiting completion of Edgewood tests.
163	Test of E45 chemical bomb, modified as determined by Edgewood tests, filled GA, dropped in area covered by vegetation (number to be determined from results of Edgewood tests)	Awaiting completion of Edgewood tests.
164	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into area covered by vegetation (number of clusters to be determined by results of 163)	Awaiting completion of Test No. 163.
165	Test of E45 chemical bomb with various shaped charges, filled GA, dropped into open in small number (number to be determined by Edgewood tests).	Awaiting completion of Edgewood tests.
166	Test of single E23 smoke pot, filled GA, functioned statically in open on land.	Plan of Test approved with changes, 22 April 49.
167	Test of single E23 smoke pot, filled GA, functioned statically in area covered by vegetation.	Plan of Test approved with changes, 22 April 49.
168	Test of single E23 smoke pot, filled GA, functioned statically on water with onshore wind.	Plan of Test approved with changes, 22 April 49.
169	Multiple test of E23 smoke pot, filled GA, dropped from boat, with onshore wind to simulate smoke (number to be determined from results of Test No. 168)	Awaiting completion of Test No. 168.

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TEST
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TITLE

STATUS

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- 170 Multiple test of filled GA, dropped from airplane, with onshore wind to simulate smoke. (Number to be determined from results of Test No. 168). Awaiting completion of Test No. 168.
- 171 Test of 4.2" chemical mortar shell filled GB, fired statically in the open (nine to be fired simultaneously) Awaiting material.
- 172 Test of 4.2" chemical mortar shell filled GB fired from mortar into open (number to be determined from results of Test No. 171). Awaiting completion of Test No. 171.
- 173 Test of 125 lb. T3 bomb, filled GB with modified burster, dropped singly in open. Awaiting completion of Edgewood tests.
- 174 Test of E45 chemical bomb, filled GB with modified burster, dropped in small quantity in open (number to be determined from Edgewood tests). Awaiting completion of Edgewood tests.
- 175 Test of single E23 smoke pot, filled GB, functioned statically in open on land. Awaiting material.
- 176 Test of single E23 smoke pot, filled HD, functioned statically in open on land. Plan of Test approved with changes, 25 April 49.
- 177 Test of single E23 smoke pot, filled HT, functioned statically in open on land. Plan of Test approved with changes, 25 April 49.
- 178 Test of single E23 smoke pot, filled HN3, functioned statically in open on land. Plan of Test approved with changes, 25 April 49.
- 179 Test of single E23 smoke pot, filled HQ, functioned statically in open on land. Plan of Test approved with changes, 25 April 49.
- 180 Test of Suit, Protective, One Piece, Impermeable, ELR1, and related items under extreme heat load (Cml C Bd. Project No. 782). Awaiting material.

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TITLE

STATUS

181	Test of Gas Casualty Kit, Treatment, Item 9-244-800 (New Revision)	Awaiting test material.
182	Test of First Aid Kit, Gas, Casualty, Item 9-206-710 (New Revision)	Awaiting test material.
183	Test of Veterinary Gas Casualty Outfit, Item 9-602-680 (New Revision)	Awaiting test material.
184	Operational Scale Test with German KC 250 III Gr Bombs, filled with GA. Technical Command Field Test No. 114.	Awaiting material.
185	Test of single 250 kg German, GA filled bomb fired statically in the open under inversion or zero temperature gradient conditions.	Awaiting material.
186	Test of single 250 kg German, GA filled bomb dropped into open and also into covered area under inversion or zero temperature gradient conditions.	Awaiting material.

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APPENDIX C

SURVEILLANCE OF AGED CK IN M70, M78 AND M79 BOMBS

TEST NO. 135

RESULTS OF SAMPLING DURING JUNE 1949

DOWNGRADED AT 8-YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS /
DOD DIR 5200.10

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Surveillance of Aged CK in M70, M78 and M79 Bombs, Test No. 135

Results of Sampling During June 1949

Semi-annual sampling in connection with this test was performed during the period 14-16 June 1949. This is the second series of samples taken, results of the first being reported in SJPPR No. 67 which was distributed early in May 1949. Results of recent sampling appear below.

M78 Bombs

Date	Lot No.	Bomb No.	Date Filled	Abs. Press.	% Acidity	% Soluble Residue
14 Ju 49	206	29	Aug-44	39lbs.	0.12	0.220
	206	35	Aug-44	39	0.05	0.247
	206	12	Aug-44	39	0.06	0.392
	206	27	Sept-44	39	0.10	0.263
	206	19	Aug-44	39	0.07	0.283
	206	32	Aug-44	37	0.09	0.216
	206	5	Aug-44	39	0.08	0.247
	206	8	Aug-44	39	0.05	0.204
	206	21	Aug-44	37	0.05	0.966
	206	22	Aug-44	39	0.08	0.280
	206	11	Aug-44	39	0.06	0.222
	206	34	Aug-44	38	0.05	0.337
	206	13	Aug-44	38	0.08	0.413
	206	23	Aug-44	39	0.06	0.306
14 Ju 49	207	24	Aug-44	36	Bad valve - no sample	
	207	31	Aug-44	43	0.02	2.340
	207	28	Aug-44	39	0.10	0.363
	207	25	Aug-44	40.5	0.07	0.320
	207	2	Aug-44	38.5	0.04	0.450
	207	20	Aug-44	39	0.10	0.087
14 Ju 49	222	26	Sept-44	No threads	0.05	0.248
	222	9	Sept-44	37	0.05	0.225
	222	15	Sept-44	34	0.09	0.319
14 Ju 49	224	3	Sept-44	39	0.07	0.274
	224					0.205
14 Ju 49	None					0.461
	None					0.255
	None	18	Aug-44	39	0.09	0.325
Resample	207	24	Aug-44	38	0.08	0.435

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M70 Bombs

	Lot No.	Bomb No.	Date Filled	Abs. Press.	% Acidity	% Soluble Residue
49	65	58	June-44	40	0.12	0.414
	65	59	June-44	41	0.06	0.206
	65	57	June-44	40	0.07	0.276
	65	60	June-44	35	0.05	0.311
	65	56	June-44	37	0.07	0.271
49	456	55	Nov-44	40	0.14	0.112
	456	53	Nov-44	35	0.06	0.213

M70 Bombs

Necessary equipment for the sampling of M70 Bombs was received, and this phase of the test was begun. One bomb from each lot was weighed and needle valves inserted in these bombs to facilitate future sampling. Results obtained appear below.

Date	Lot No.	Bomb No.	Date Filled	Abs. Press.	% Acidity	% Soluble Residue
15 Jan 49	384	1	Oct-44	36	0.10	0.32
	384	2	Oct-44	37	0.07	0.29
	373	3	Oct-44	35	0.04	0.26
	382	4	Oct-44	34	0.14	0.61
	406	5	Nov-44	36	0.06	0.37
	352	6	Oct-44	36	0.09	0.38
	361	7	Oct-44	34	0.14	0.52
	309	8	Nov-44	39	0.07	0.76
	385	9	Nov-44	36	0.11	0.98
	367	10	Oct-44	35	0.06	0.70
	395	11	Oct-44	38	0.09	0.41
	374	12	Oct-44	33	0.07	0.30
	319	13	Oct-44	39	0.05	0.31
	410	14	Nov-44	40	0.05	0.89
	439	15	Nov-44	39	0.13	0.94

Meteorology

	<u>Max. Temp.</u>	<u>Min. Temp.</u>	<u>Mean Max. Temp.</u>	<u>Mean Min. Temp.</u>
June 1949	85°F	69°F	82°F	75°F

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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 70
1 JULY 1949 THROUGH 31 JULY 1949

OCT 25 1949

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 70

1 JULY 1949 THROUGH 31 JULY 1949

by

San Jose Project Technical Staff

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- 1 Chief, Chemical Corps
- 2 Chief, Research and Engineering Division
CCCmLC, Army Chemical Center, Md.
- 3 Chief, Proving Ground Section, Development Branch,
Research and Engineering Division, CCCmLC,
Army Chemical Center, Md.
- 4 Secretary, Research Council, CCCmLC, Bldg. 330,
Army Chemical Center, Md.
- 5 - 6 Commanding Officer, Cml C Technical Command,
Army Chemical Center, Md.
- 7 - 8 Chief, Medical Division, Army Chemical Center, Md.
- 9 - 13 Technical Director, Camp Detrick, Frederick, Md.
- 14 President, Cml C Board, Army Chemical Center, Md.
- 15 Commanding Officer, Edgewood Proving Ground,
Army Chemical Center, Md.
- 16 - 17 Research and Development Board, Technical Reference Branch,
Document Section, Room 3D-641, National Military Establish-
ment, Washington 25, D. C.
- 18 Military Applications Division, U. S. Atomic Energy
Commission, 1901 Constitution Avenue, N.W.,
Washington, D. C., Attention: Chemical Officer
- 19 - 23 Mr. R. Kingan, British CW Representative, British Joint
Services Mission, Room 475, 1785 Massachusetts Ave., N.W.,
Washington, D. C. (Thru: Chief, Res & Eng Div., Army
Chemical Center, Md.)
- 24 - 26 Canadian Technical Representative, Army Chemical Center,
Md. (Thru: Chief, Res & Eng Div., Army Chemical Center,
Md.)
- 27 British Liaison Officer, Army Chemical Center, Md.
(Thru: Chief, Res & Eng Div., Army Chemical Center, Md.)
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HEADQUARTERS, ~~SAN JOSE PROJECT~~
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

1 August 1949

SUBJECT: San Jose Project Progress Report No. 70
Period 1 July 1949 through 31 July 1949

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

No reports were distributed during the period covered by this report.

2. PROGRESS OF TESTS DURING THE MONTH OF JULY

a. Location of Entrances to Gasproof Shelters in Relation to Prevailing Wind - SJPPT No. 102

(1) Reconstruction of the shelter in its new location is now in progress.

b. Test of Single E23 Smoke Pot, Filled HD, Functioned Statically in Open on Land - SJPPT No. 176

(1) Preliminary work on this test was conducted on 22 July 1949 at which time a trial run was made in order to establish a procedure to be followed in actual conduct of the test.

(2) The procedure followed on 22 July 1949 was repeated on 27 July 1949 as the first phase of Test No. 176.

c. Work on tests listed below has been delayed pending the arrival of munitions, test animals or both:

(1) Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open - SJPPT No. 130.

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- (2) Static Test of M70 (E46) Bomb, GA Filled, in the Open - SJPPT No. 137.
- (3) Static Test of Nine 4.2 Inch Chemical Mortar Shells, GA Filled, in Area Covered by Vegetation - SJPPT No. 147.
- (4) Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio, Dropped in Open - SJPPT No. 150.
- (5) Static Test in Area Covered by Vegetation of a Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio - SJPPT No. 152.
- (6) Single 125 Pound Chemical Bomb, T3E2, GA Filled, with 35:1 Burster Ratio, Dropped in an Area Covered by Vegetation - SJPPT No. 153.
- (7) Static Test in Open of Single E23 Smoke Pot, GA Filled - SJPPT No. 166.
- (8) Static Test in Area Covered by Vegetation of a Single E23 Smoke Pot, GA Filled - SJPPT No. 167.
- (9) Static Test in the Open of a Single E23 Smoke Pot, GA Filled - SJPPT No. 168.

3. SUPPLY

- a. E23 Smoke Pots arrived in San Juan, Puerto Rico, on 1 July 1949. This shipment reached the Project on 20 July 1949.
- b. Pigeons for test purposes are due to arrive early in August.

4. PROGRESS OF TESTS

- a. A complete list of tests scheduled for the San Jose Project, together with pertinent information is included as Appendix B.

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- b. The following tests have been deleted from the San Jose Project Program of Tests in accordance with letter CMLWR-D-4 400.112/249 S.J. from Chief, Research and Engineering Division, OCCmLC, Army Chemical Center, Md., dated 30 June 1949, Subject: Tests of German Ground Munitions, GA Filled.

- (1) Test of German 105 mm Shell, Filled GA, Static Fired in Open - SJPPT No. 138.
- (2) Test of German 105 mm Shell, Filled GA, Fired from Gun into Open - SJPPT No. 139.
- (3) Test of German 15 cm Rocket, Filled GA, Static Fired in Open - SJPPT No. 140.
- (4) Test of German 15 cm Rocket, Filled GA, Fired into Open from Launcher - SJPPT No. 141.
- (5) Test of German 105 mm Shell, Filled GA, Static Fired in Area Covered by Vegetation - SJPPT No. 142.
- (6) Test of German 105 mm Shell, Filled GA, Fired from Gun in Area Covered by Vegetation - SJPPT No. 143.
- (7) Test of German 15 cm Rocket, Filled GA, Static Fired in Area Covered by Vegetation - SJPPT No. 144.
- (8) Test of German 15 cm Rocket, Filled GA, Fired in Area Covered by Vegetation - SJPPT No. 145.

5. METEOROLOGY

- a. Weather summary for the month of July 1949 is included as Appendix A.

6. PERSONNEL

- a. 1st Lt. Richard A. Houser arrived from Zone of Interior for assignment this project on 5 July 1949.
- b. Major Speers G. Ponder arrived from Zone of Interior on 13 July 1949 and assumed duty as Technical Director this station.

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- c. Captain Lawrence E. Remick departed this station on 25 July 1949 for Zone of Interior.
- d. 1st Lt. George W. Cullum arrived from Zone of Interior this station on 26 July 1949 to assume duties as Post Surgeon.
- e. Mr. Sanford Ribnik arrived this project on 15 July 1949 to fill position with Technical Division as General Photographer, CAF-4.
- f. Mr. Alan R. Cissna arrived this project on 26 July 1949 to fill position as Motion Picture Photographer, CAF-7, with the Technical Division.

7. VISITORS

- a. During the period covered by this report, the following persons visited the Project:

1 July 1949	Lt. Col. Charles B. Hines, FA, arrived this project to view and discuss current technical operations. Colonel Hines' visit was made just prior to his reporting for duty with the Armed Forces Special Weapons Project.
22 July 1949	Messrs. Mendez and McBride representing the Panama District Engineers arrived in connection with Technical construction matters.

Speers G. Ponder
SPEERS G. PONDER
Major, Cml C
Technical Director

APPROVED:

Paul R. Smith
PAUL R. SMITH
Colonel, Cml C
Commanding

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APPENDIX B

PROGRESS OF TESTS

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PROGRESS OF TESTS, SAN JOSE PROJECT

TEST NO.	TITLE	STATUS
87	Surveillance of Bombs, Chemical 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled not coated.	Current, long-range sampling
99	Surveillance of VKL.	Test Completed, Report Distributed.
102A	Location of Entrances to Gas-proof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Bd. Test No. 724)	Test in progress
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Plan of test approved with changes, 29 April 1949
132	Surveillance of Bomb, Particulate, 4 lb., E-1	Test Completed, Report Distributed.
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with Onshore and Offshore Winds	Test Completed, Report Distributed.
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired	Plan of test approved with changes, 18 April 1949
146	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (number to be determined from results of Test No. 130)	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticallly in Covered Area (nine to be fired simultaneously)	Plan of test approved with changes, 25 April 1949
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Covered by Vegetation (number to be determined from results of Test No. 147)	Awaiting completion of Test No. 147

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TEST

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STATUS

149 Test of M33A1 Spr
Unthickened GA in Open From Low
Altitude.

Awaiting material

150 Test of 125 lb. Chemical Bomb,
T3E2, Filled GA with 35:1 Burster
Ratio, Dropped Singly in Open

Plan of test approved with changes,
9 May 1949

151 Test of 125 lb. Chemical Bomb,
T3E2, Filled GA with 35:1 Burster
Ratio, Dropped in Multiple into
Open Area (number to be determined
from results of Test No. 150)

Awaiting completion of Test No. 150

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TEST
NO.

TITLE

STATUS

TEST NO.	TITLE	STATUS
152	Test of single 125 lb. chemical bomb, T3E2, filled GA; with 35:1 burster ratio, fired statically in area covered by vegetation.	Plan of test approved with changes, 9 May 1949.
153	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in covered area.	Plan of test approved with changes, 9 May 1949.
154	Test of 125 lb chemical bomb, T3E2 filled GA, with 35:1 burster ratio dropped in multiple into covered area. (number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153.
155	Test of 125 lb T3 bomb, filled GA, with burster modified as determined by Edgewood tests, dropped singly into the open.	Awaiting completion of Edgewood tests.
156	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into open (number to be determined from results of No. 155)	Awaiting completion of Test No. 155.
157	Test of single 125 lb. T3 bomb, filled GA with modified burster fired statically in area covered with vegetation.	Awaiting completion of Edgewood tests.
158	Test of 125 lb. T3 bomb, filled GA with burster modified as determined by Edgewood tests, dropped singly into covered area.	Awaiting completion of Edgewood tests.
159	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into covered area (number to be determined from results of Test No. 158)	Awaiting completion of Test No. 158.
160	Test of B45 chemical bomb modified as determined by Edgewood tests, filled GA, dropped in open in small number (number to be determined by Edgewood tests.)	Awaiting completion of Edgewood tests.

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161	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into open in large number (number of clusters to be determined from results of Test No. 160)	Awaiting completion of Test No. 160. 21119
162	Test of modified E45 chemical bomb fired statically in area covered by vegetation (nine bombs to be fired simultaneously)	Awaiting completion of Edgewood tests.
163	Test of E45 chemical bomb, modified as determined by Edgewood tests, filled GA, dropped in area covered by vegetation (number to be determined from results of Edgewood tests)	Awaiting completion of Edgewood tests.
164	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into area covered by vegetation (number of clusters to be determined by results of 163)	Awaiting completion of Test No. 163.
165	Test of E45 chemical bomb with various shaped charges, filled GA, dropped into open in small number (number to be determined by Edgewood tests).	Awaiting completion of Edgewood tests.
166	Test of single E23 smoke pot, filled GA, functioned statically in open on land.	Plan of Test approved with changes, 22 April 49.
167	Test of single E23 smoke pot, filled GA, functioned statically in area covered by vegetation.	Plan of Test approved with changes, 22 April 49.
168	Test of single E23 smoke pot, filled GA, functioned statically on water with onshore wind.	Plan of Test approved with changes, 22 April 49.
169	Multiple test of E23 smoke pot, filled GA, dropped from boat, with onshore wind to simulate smoke (number to be determined from results of Test No. 168)	Awaiting completion of Test No. 168.

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STATUS

170	Multiple test of E23 smoke pot, filled GA, dropped from airplane, with onshore wind to simulate smoke. (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168
171	Test of 4.2" chemical mortar shell filled GB, fired statically in the open (nine to be fired simultaneously)	Awaiting material
172	Test of 4.2" chemical mortar shell filled GB fired from mortar into open (number to be determined from results of Test No. 171).	Awaiting completion of Test No. 171
173	Test of 125 lb. T3 bomb, filled GB with modified burster, dropped singly in open.	Awaiting completion of Edgewood tests
174	Test of E45 chemical bomb, filled GB with modified burster, dropped in small quantity in open (number to be determined from Edgewood tests).	Awaiting completion of Edgewood tests
175	Test of single E23 smoke pot, filled GB, functioned statically in open on land.	Awaiting material
176	Test of single E23 smoke pot, filled HD, functioned statically in open on land.	Test in progress
177	Test of single E23 smoke pot, filled HT, functioned statically in open on land.	Awaiting completion of Test No. 176
178	Test of single E23 smoke pot, filled HN3, functioned statically in open on land.	Awaiting completion of Test No. 176
179	Test of single E23 smoke pot, filled HQ, functioned statically in open on land.	Awaiting completion of Test No. 176
180	Test of Suit, Protective, One Piece, Impermeable, ELR1, and related items under extreme heat load (Cml C Bd. Project No. 782).	Awaiting material

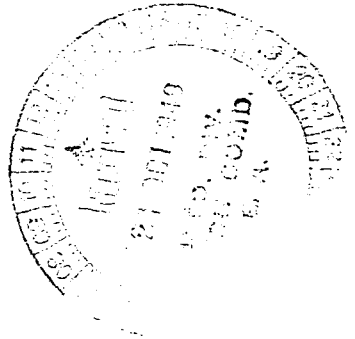
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181	Test of Gas Casualty Kit, Treatment, Item 9-244-800 (New Revision)	Awaiting test material.
182	Test of First Aid Kit, Gas, Casualty, Item 9-206-710 (New Revision)	Awaiting test material.
183	Test of Veterinary Gas Casualty Outfit, Item 9-602-680 (New Revision)	Awaiting test material.
184	Operational Scale Test with German KC 250 III Gr Bombs, filled with GA. Technical Command Field Test No. 114.	Awaiting material.
185	Test of single 250 kg German, GA filled bomb fired statically in the open under inversion or zero temperature gradient conditions.	Awaiting material.
186	Test of single 250 kg German, GA filled bomb dropped into open and also into covered area under inversion or zero temperature gradient conditions.	Awaiting material.



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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 71
1 AUGUST 1949 THROUGH 31 AUGUST 1949

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 71

1 AUGUST 1949 THROUGH 31 AUGUST 1949

by

San Jose Project Technical Staff

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5-6	Commanding Officer, Cml C Technical Command, Army Chemical Center, Maryland
7-8	Chief, Medical Division, Army Chemical Center, Maryland
9-13	Technical Director, Camp Detrick, Frederick, Maryland
14	President, Cml C Board, Army Chemical Center, Maryland
15	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Maryland
16-17	Research and Development Board, Technical Reference Branch, Document Section, Room 3D-641, National Military Establish- ment, Washington 25, D.C.
18	Military Applications Division, U.S. Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D.C.; Attention: Chemical Officer
19-23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W., Washington, D.C. (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
24-26	Canadian Technical Representative, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

1 September 1949

SUBJECT: San Jose Project Progress Report No. 71
Period 1 August 1949 through 31 August 1949

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

The following special report was distributed during the period covered by this report:

<u>Title</u>	<u>Date of Test</u>	<u>Report Distributed</u>
SJPR No. 176, Static Test in the Open of a Single E23 Smoke Pot, HD filled	27 July 1949 through 15 August 1949	30 August 1949

2. PROGRESS OF TESTS DURING THE MONTH OF AUGUST

- a. Location of Entrances to Gasproof Shelters in Relation to Prevailing Wind - SJPPT No. 102

(1) Phase 2 of this test will begin within the next week.

- b. Static Test in the Open of a Single E23 Smoke Pot, HD Filled - SJPPT No. 176

(1) The final phase of this test was conducted on 15 August 1949.

(2) Report of this test was distributed as a special report on 30 August 1949.

- c. Surveillance of Bombs, Chemical, 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled, Not Coated - SJPPT No. 89.

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3. SUPPLY

- a. Shipment of Pigeons requisitioned in March 1949 arrived this Project on 18 August 1949.

4. TRAINING

- a. Technical personnel have received during the period covered by this report intensive training in all aspects of work with agents of the G series. It is anticipated that work with these agents will begin in the very near future. This training included a three-hour course which covered safety, first aid, symptoms of exposed personnel, etc., followed by an examination in which each man was required to receive a passing mark before being permitted to work with G agents. In addition, technical personnel were given instruction and practice in the use of impermeable clothing.

5. PROGRESS OF TESTS

- a. A complete list of tests scheduled for the San Jose Project, together with pertinent information is included as Appendix B.
- b. The following tests have been deleted from the San Jose Project Program of Tests in accordance with a letter dated 10 August 1949, from the Office of the Chief, Research and Engineering Division, OCCmLC, Army Chemical Center, Maryland. Items to be tested will not be available until 1950 or 1951 and when available it is planned to test these items in a hot, wet, tropical climate.
 - (1) Test of Gas Casualty Kit, Treatment, Item 9-244-800 (New Revision) - SJPPT No. 181.
 - (2) Test of First Aid Kit, Gas Casualty, Item 9-206-710 (New Revision) - SJPPT No. 182.
 - (3) Test of Veterinary Gas Casualty Outfit, Item 9-602-680 (New Revision) - SJPPT No. 183.

6. METEOROLOGY

- a. Weather summary for the month of August 1949 is included as Appendix A.

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(SJPPR No. 71)

7. PERSONNEL

- a. Captain John F. Neville, MC, arrived 18 August 1949, for temporary duty of approximately thirty days in connection with work on the G series Agents.
- b. CWO Jack E. Triden arrived 26 August 1949 on permanent change of station.
- c. Lt. Col. R. Beverly Caldwell arrived 30 August 1949 on permanent change of station.
- d. Lt. William B. Strough arrived 30 August 1949 on permanent change of station.

8. VISITORS

- a. During the period covered by this report no persons arrived at the San Jose Project to visit the Technical Division.

Speers G. Ponder
SPEERS G. PONDER
Major, Cml C
Technical Director

APPROVED:

Paul R. Smith
PAUL R. SMITH
Colonel, Cml C
Commanding

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(SJPPR No. 71, App. B)

APPENDIX B
PROGRESS OF TESTS

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PROGRESS OF TESTS, SA-7002 PROJECT

TEST NO.	TITLE	STATUS
89	Surveillance of Bombs, Chemical 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled not coated.	Current, long range sampling
90	Surveillance of VKL.	Test Completed, Report Distributed.
101A	Location of Entrances to Gas-proof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Bd. Test No. 724)	Test in progress
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Material available - occupied on other tests
131	Surveillance of Bomb, Particulate, 4 lb., E-1	Test Completed, Report Distributed.
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with Onshore and Offshore Winds	Test Completed, Report Distributed.
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired	Material available - occupied on other tests
146	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (number to be determined from results of Test No. 130)	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticly in Covered Area (nine to be fired simultaneously)	Material available - occupied on other tests
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Covered by Vegetation (number to be determined from results of Test No. 147)	Awaiting completion of Test No. 147

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TITLE

TEST NO.	TITLE
149	Test of M33A1 Spray Tank, Filled Unthickened GA in Open From Low Altitude. Awaiting material
150	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped Singly in Open Material available - occupied on other tests
151	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped in Multiple into Open Area (number to be determined from results of Test No. 150) Awaiting completion of Test No. 150

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152	Test of single 125 lb. chemical bomb, T3E2, filled GA, with 35:1 burster ratio, fired statically in area covered by vegetation.	Material available - occupied on other tests
153	Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in covered area.	Material available - occupied on other tests
154	Test of 125 lb chemical bomb, T3E2 filled GA, with 35:1 burster ratio dropped in multiple into covered area. (number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153
155	Test of 125 lb T3 bomb, filled GA, with burster modified as determined by Edgewood tests, dropped singly into the open.	Awaiting completion of Edgewood tests
156	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into open (number to be determined from results of No. 155)	Awaiting completion of Test No. 155
157	Test of single 125 lb. T3 bomb, filled GA with modified burster fired statically in area covered with vegetation.	Awaiting completion of Edgewood tests
158	Test of 125 lb. T3 bomb, filled GA with burster modified as determined by Edgewood tests, dropped singly into covered area.	Awaiting completion of Edgewood tests
159	Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into covered area (number to be determined from results of Test No. 158)	Awaiting completion of Test, No. 158
160	Test of 345 chemical bomb modified as determined by Edgewood tests, filled GA, dropped in open in small number (number to be determined by Edgewood tests.)	Awaiting completion of Edgewood tests

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TEST
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- 161 Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into open in large number (number of clusters to be determined from results of Test No. 160) Awaiting completion of Test No. 160
- Test of modified E45 chemical bomb fired statically in area covered by vegetation (nine bombs to be fired simultaneously) Awaiting completion of Edgewood tests
- Test of E45 chemical bomb, modified as determined by Edgewood tests, filled GA, dropped in area covered by vegetation (number to be determined from results of Edgewood tests) Awaiting completion of Edgewood tests
- 162 Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into area covered by vegetation (number of clusters to be determined by results of 163) Awaiting completion of Test No. 163
- 165 Test of E45 chemical bomb with various shaped charges, filled GA, dropped into open in small number (number to be determined by Edgewood tests). Awaiting completion of Edgewood tests
- 166 Test of single E23 smoke pot, filled GA, functioned statically in open on land. Material available - occupied on other tests
- Test of single E23 smoke pot, filled GA, functioned statically in area covered by vegetation. Material available - occupied on other tests
- 167 Test of single E23 smoke pot, filled GA, functioned statically on water with onshore wind. Material available - occupied on other tests
- 168 Multiple test of E23 smoke pot, filled GA, dropped from boat, with onshore wind to simulate smoke (number to be determined from results of Test No. 168) Awaiting completion of Test No. 168

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170	Multiple test of E23 smoke pot, filled GA, dropped from airplane, with onshore wind to simulate smoke. (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168
171	Test of 4.2" chemical mortar shell filled GB, fired statically in the open (nine to be fired simultaneously)	Awaiting material
172	Test of 4.2" chemical mortar shell filled GB fired from mortar into open (number to be determined from results of Test No. 171).	Awaiting completion of Test No. 171
173	Test of 125 lb. T3 bomb, filled GB with modified burster, dropped singly in open.	Awaiting completion of Edgewood tests
174	Test of E45 chemical bomb, filled GB with modified burster, dropped in small quantity in open (number to be determined from Edgewood tests).	Awaiting completion of Edgewood tests
175	Test of single E23 smoke pot, filled GB, functioned statically in open on land.	Awaiting material
176	Test of single E23 smoke pot, filled HD, functioned statically in open on land.	Test completed, report distributed
177	Test of single E23 smoke pot, filled HT, functioned statically in open on land.	Material available - occupied on other tests
178	Test of single E23 smoke pot, filled HN3, functioned statically in open on land.	Material available - occupied on other tests
179	Test of single E23 smoke pot, filled HQ, functioned statically in open on land.	Material available - occupied on other tests
180	Test of Suit, Protective, One Piece, Impermeable. ElR1. and related items u load (Cml C Bd.	Awaiting material

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TEST
NO.

TITLE

STATUS

181 Test of Gas Casualty Kit, Treatment, Item 9-244-800 (New Revision)

182 Test of First Aid Kit, Gas, Casualty, Item 9-206-710 (New Revision)

183 Test of Veterinary Gas Casualty Outfit, Item 9-602-680 (New Revision)

184 Operational Scale Test with German KC 250 III Gr Bombs, filled with GA. Technical Command Field Test No. 114.

Awaiting material

185 Test of single 250 kg German, GA filled bomb fired statically in the open under inversion or zero temperature gradient conditions.

Awaiting material

186 Test of single 250 kg German, GA filled bomb dropped into open and also into covered area under inversion or zero temperature gradient conditions.

Awaiting material

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(SJPPR No. 71, App. C)

APPENDIX C

TEST NO. 89

Results of Sampling Performed on 5 July 1949

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(SJPPR No. 71, App. C)

TEST 89INTERIM REPORT OF H SURVEILLANCE ANALYSIS

Semi-annual sampling in connection with this test was performed on 5 July 1949. Previous sampling was performed on 12 January 1949 and was reported in SJPPR No. 64, San Jose Project Progress Report for January 1949. Results of the recent sampling follow:

Sampling date, 5 July 1949		H filled Heresite coated Lot# 3-6-45 EA99-10-45		H filled Heresite coated Lot# 3-6-45 EA99-10-45	
Bomb Number		1		2	
Weight of bomb plus agent	(lbs.)	135.5		135.25	
Weight of bomb casing	(lbs.)	76.5		82.25	
Weight of agent removed	(lbs.)	60.5		53.00	
Weight of residue through 16 mesh screen	(lbs.)	0.75		0.75	
Weight of liquid agent	(lbs.)	59.75		52.25	
Residue through 16 mesh screen	(%)	1.24		1.42	
Liquid agent	(%)	98.76		98.58	
Freezing point of agent	(°C)	4.0		4.3	
Distillate	(%)	68.9		60.2	
Residue	(%)	25.1		35.3	
Loss	(%)	6.0		4.5	
Melting point of distillate	(°C)	11.85		11.4	
Purity of distillate	(%)	93.1		91.8	
Purity of agent from bomb	(%)	64.1		55.3	
HCl (total)	(%)	0.15		0.12	
Fe as FeCl ₂ (agent from bomb)	(%)	0.66		0.40	
Fe as FeCl ₂ (1st wash water)	(%)	0.26		1.42	
Fe as FeCl ₂ (2nd wash water)	(%)	0.23		1.68	
Fe as FeCl ₂ (total)	(%)	1.15		3.50	

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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 72
1 SEPTEMBER 1949 THROUGH 30 SEPTEMBER 1949

OCT 25 1949

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 72

1 SEPTEMBER 1949 THROUGH 30 SEPTEMBER 1949

by

San Jose Project Technical Staff

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5-6	Commanding Officer, Cml C Technical Command, Army Chemical Center, Maryland
7-8	Chief, Medical Division, Army Chemical Center, Maryland
9-13	Technical Director, Camp Detrick, Frederick, Maryland
14	President, Cml C Board, Army Chemical Center, Maryland
15	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Maryland
16-17	Research and Development Board, Technical Reference Branch, Document Section, Room 3D-641, National Military Establish- ment, Washington 25, D.C.
18	Military Applications Division, U.S. Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D.C.; Attention: Chemical Officer
19-23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W., Washington, D.C. (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
24-26	Canadian Technical Representative, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

3 October 1949

SUBJECT: San Jose Project Progress Report No. 72
Period 1 September 1949 through 30 September 1949

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

No reports were distributed during the period covered by this report

2. PROGRESS OF TESTS DURING THE MONTH OF SEPTEMBER

- a. Static Test in the Open of a Single E23 Smoke Pot,
GA Filled - SJPPT No. 166.

(1) Phase 1 of this test was performed on 1 September 1949

- b. Location of Entrances to Gasproof Shelter in Relation
to Prevailing Wind - SJPPT No. 102.

(1) Phase 2 of this test was completed on 30 September 1949. This completes the test as a whole, and the final report is now in preparation.

3. SUPPLY

- a. The U.S.A. Tug Noyes arrived on 7 September 1949 with supplies for the Technical Division. Included in the shipment were T-3 Bombs with tail and nose fuses and tail assemblies, two one-ton containers, empty 4.2 inch mortar shells and photographic paper.
- b. Mr. Roy Crouse arrived on 15 September 1949 from Army Chemical Center, Maryland, with a shipment of material for the Technical Division, which included pigeons, 4.2 inch mortar shells and impregnated clothing. The purpose of Mr. Crouse's visit was to offer advice and make recommendations in connection with the care and feeding of test animals now being used by the Project. Mr. Crouse departed

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4. PROGRESS OF TESTS

- a. A complete list of tests scheduled for the San Jose Project, together with pertinent information is included as Appendix B.

5. METEOROLOGY

- a. Weather summary for the month of September 1949 is included as Appendix A.
- b. A barometric pressure chart for the twelve month period ending with August 1949 is included as Appendix A-1. Pressures are recorded in inches of mercury.
- c. Unusually heavy rainfall occurred on 3 September with 3.62 inches reported, and on 16 September with 2.25 inches reported.

6. ORGANIZATION DAY

- a. The fifth anniversary of the official establishment of the San Jose Project was observed on 27 September 1949. A full day's activities included the following:
 - (1) Assembly - Addresses by Captain Jay S. Stockhardt, Deputy Technical Director; Colonel Paul R. Smith, Commanding Officer, San Jose Project; Honorable Morris de Castro, Acting Governor of the Virgin Islands; and Brigadier General Edwin L. Sibert, Commanding General, United States Army Forces Antilles.
 - (2) Parade - Headquarters Detachment, San Jose Project participated in a street parade on the Project. The 81st Army Band was sent over from San Juan, Puerto Rico to participate in the parade and subsequent events.
 - (3) Display and Demonstration of Chemical Equipment - A display was set up which included such items as the 4.2 inch chemical mortar, Collective Protector, Decontamination Truck, various bombs, etc. The demonstrations included the burning of colored smoke grenades, firing of the mortar and screening of an area by boat with E23 Floating Smoke Pots.
 - (4) The day's activities were climaxed with the serving of a picnic supper in the Headquarters Detachment Mess for all military personnel and their dependents.

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7. PERSONNEL

- a. Captain John F. Neville, MC, returned to Army Chemical Center, Maryland on 6 September 1949 upon completion of approximately thirty days temporary duty at the Project.
- b. 1st Lt. Elmer Hensley arrived on permanent charge of station from Zone of Interior on 2 September 1949.

8. VISITORS

- a. During the period covered by this report the following visited the Project:

26 September 1949

Brigadier General Edwin L. Sibert,
Commanding General, United States
Army Forces Antilles arrived in
connection with San Jose Project
Organization Day Activities.

Speers G. Pomeroy
SPEERS G. POMEROY
Major, Cml C
Technical Director

APPROVED:

Paul R. Smith
PAUL R. SMITH
Colonel, Cml C
Commanding

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APPENDIX B

PROGRESS OF TESTS

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PROGRESS OF TESTS, SAN JOSE PROJECT

TEST NO.	TITLE	STATUS
89	Surveillance of Bombs, Chemical 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled not coated.	Current, long range sampling
90	Surveillance of VKL.	Test Completed, Report Distributed.
104A	Location of Entrances to Gas-proof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Ed. Test No. 724)	Test Completed, Report in Preparation.
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Material available - occupied on other tests
132	Surveillance of Bomb, Particulate, 4 lb., E-1	Test Completed, Report Distributed.
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with Onshore and Offshore Winds	Test Completed, Report Distributed.
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired	Material available - occupied on other tests
136	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (number to be determined from results of Test No. 130)	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticly in Covered Area (nine to be fired simultaneously)	Material available - occupied on other tests
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Covered by Vegetation (number to be determined from results of Test No. 147)	Awaiting completion of Test No. 147

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EST NO.	TITLE	STATUS
149	Test of M33A1 Spray Tank, Filled Unthickened GA in Open From Low Altitude.	Awaiting material
150	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped Singly in Open	Material available - occupied on other tests
151	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped in Multiple into Open Area (number to be determined from results of Test No. 150)	Awaiting completion of Test No. 150

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TEST
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152 Test of single 125 lb. chemical bomb, T3E2, filled GA, with 35:1 burster ratio, fired statically in area covered by vegetation.

Material available - occupied on other tests

153 Test of 125 lb. chemical bomb, T3E2, filled GA with 35:1 burster ratio, dropped singly in covered area.

Material available - occupied on other tests

154 Test of 125 lb chemical bomb, T3E2 filled GA, with 35:1 burster ratio dropped in multiple into covered area. (number to be determined from results of Test No. 153)

Awaiting completion of Test No. 153

155 Test of 125 lb T3 bomb, filled GA, with burster modified as determined by Edgewood tests, dropped singly into the open.

Awaiting completion of Edgewood tests

156 Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into open (number to be determined from results of No. 155)

Awaiting completion of Test No. 155

157 Test of single 125 lb. T3 bomb, filled GA with modified burster fired statically in area covered with vegetation.

Awaiting completion of Edgewood tests

158 Test of 125 lb. T3 bomb, filled GA with burster modified as determined by Edgewood tests, dropped singly into covered area.

Awaiting completion of Edgewood tests

159 Test of 125 lb. T3 bomb, filled GA with modified burster dropped in multiple into covered area (number to be determined from results of Test No. 158)

Awaiting completion of Test. No. 158

160 Test of 345 chemical bomb modified as determined by Edgewood tests, filled GA, dropped in open in small number (number to be determined by Edgewood tests.)

Awaiting completion of Edgewood tests

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TEST
NO.

TITLE

STATUS

161	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into open in large number (number of clusters to be determined from results of Test No. 160)	Awaiting completion of Test No. 160
	Test of modified E45 chemical bomb fired statically in area covered by vegetation (nine bombs to be fired simultaneously)	Awaiting completion of Edgewood tests
163	Test of E45 chemical bomb, modified as determined by Edgewood tests, filled GA, dropped in area covered by vegetation (number to be determined from results of Edgewood tests)	Awaiting completion of Edgewood tests
164	Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into area covered by vegetation (number of clusters to be determined by results of 163)	Awaiting completion of Test No. 163
165	Test of E45 chemical bomb with various shaped charges, filled GA, dropped into open in small number (number to be determined by Edgewood tests).	Awaiting completion of Edgewood tests
166	Test of single E23 smoke pot, filled GA, functioned statically in open on land.	Test in progress
167	Test of single E23 smoke pot, filled GA, functioned statically in area covered by vegetation.	Material available - occupied on other tests
168	Test of single E23 smoke pot, filled GA, functioned statically on water with onshore wind.	Material available - occupied on other tests
169	Multiple test of E23 smoke pot, filled GA, dropped from boat, with onshore wind to simulate smoke (number to be determined from results of Test No. 160)	Awaiting completion of Test No. 168

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TEST NO.	TITLE	STATUS
170	Multiple test of E23 smoke pot, filled GA, dropped from airplane, with onshore wind to simulate smoke. (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168
171	Test of 4.2" chemical mortar shell filled GB, fired statically in the open (nine to be fired simultaneously)	Awaiting material
172	Test of 4.2" chemical mortar shell filled GB fired from mortar into open (number to be determined from results of Test No. 171).	Awaiting completion of Test No. 171
173	Test of 125 lb. T3 bomb, filled GB with modified burster, dropped singly in open.	Awaiting completion of Edgewood tests
174	Test of E45 chemical bomb, filled GB with modified burster, dropped in small quantity in open (number to be determined from Edgewood tests).	Awaiting completion of Edgewood tests
175	Test of single E23 smoke pot, filled GB, functioned statically in open on land.	Awaiting material
176	Test of single E23 smoke pot, filled HD, functioned statically in open on land.	Test completed, report distributed
177	Test of single E23 smoke pot, filled HT, functioned statically in open on land.	Material available - occupied on other tests
178	Test of single E23 smoke pot, filled HN3, functioned statically in open on land.	Material available - occupied on other tests
179	Test of single E23 smoke pot, filled HQ, functioned statically in open on land.	Material available - occupied on other tests
180	Test of Suit, Protective, One Piece, Impermeable, ELR1, and related items under extreme heat load (Cml C Bd. Pro	Awaiting material

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TEST
NO.

TITLE

STATUS

181 Test of Gas Casualty Kit, Treatment, Item 9-244-800 (New Revision)

182 Test of First Aid Kit, Gas, Casualty, Item 9-206-710 (New Revision)

183 Test of Veterinary Gas Casualty Outfit, Item 9-602-680 (New Revision)

184 Operational Scale Test with German KC 250 III Gr Bombs, filled with GA. Technical Command Field Test No. 114.

Awaiting material

185 Test of single 250 kg German, GA filled bomb fired statically in the open under inversion or zero temperature gradient conditions.

Awaiting material

186 Test of single 250 kg German, GA filled bomb dropped into open and also into covered area under inversion or zero temperature gradient conditions.

Awaiting material

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 73
1 OCTOBER 1949 THROUGH 31 OCTOBER 1949

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 73

1 OCTOBER 1949 THROUGH 31 OCTOBER 1949

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7-8	Chief, Medical Division, Army Chemical Center, Maryland
9-13	Technical Director, Camp Detrick, Frederick, Maryland
14	President, Cml C Board, Army Chemical Center, Maryland
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16-17	Research and Development Board, Technical Reference Branch, Document Section, Room 3D-641, National Military Establish- ment, Washington 25, D.C.
18	Military Applications Division, U.S. Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D.C.; Attention: Chemical Officer
19-23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W., Washington, D.C. (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
24-26	Canadian Technical Representative, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

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1 November 1949

SUBJECT: San Jose Project Progress Report No. 73
Period 1 October 1949 through 31 October 1949

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

The following special report was distributed during the period covered by this report:

<u>Title</u>	<u>Date of Test</u>	<u>Report Distributed</u>
SJPR No. 102, Location of Entrances to Gasproof Shelters in Relation to Prevailing Wind	17 May 1949 through 30 September 1949	24 October 1949

2. PROGRESS OF TESTS DURING THE MONTH OF OCTOBER

a. Static Test in the Open of a Single E23 Smoke Pot, GA Filled - SJPPT No. 166.

(1) Phases 2 and 3 of this test were performed on 26 October and 28 October 1949 respectively.

3. INSPECTIONS

Lt. Colonel White and Major McCachem from the Planning Division, Research and Development Board arrived on or about 14 October to conduct a brief inspection of facilities at the San Jose Project.

4. PROGRESS OF TESTS

a. A complete list of tests scheduled for the San Jose Project to is included as Appendix B.

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4. PROGRESS OF TESTS (Cont'd)

b. The following tests have been deleted from the San Jose Project Program of Tests in accordance with a letter dated 11 October 1949, from the Office of the Chief, Research and Engineering Division, OCCmIC, Army Chemical Center, Maryland.

- (1) Test of 125-lb. T3 bomb, filled GA, with burster modified as determined by Edgewood tests, dropped singly into the open - SJPPT No. 155
- (2) Test of 125-lb. T3 bomb, filled GA with modified burster dropped in multiple into open (number to be determined from results of No. 155) - SJPPT No. 156
- (3) Test of single 125-lb. T3 bomb, filled GA with modified burster fired statically in area covered with vegetation - SJPPT No. 157
- (4) Test of 125-lb. T3 bomb, filled GA with burster modified as determined by Edgewood tests, dropped singly into covered area - SJPPT No. 158
- (5) Test of 125-lb. T3 bomb, filled GA with modified burster dropped in multiple into covered area (number to be determined from results of Test No. 158) - SJPPT No. 159
- (6) Test of E45 chemical bomb modified as determined by Edgewood tests, filled GA, dropped in open in small number (number to be determined by Edgewood tests.) - SJPPT No. 160
- (7) Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into open in large number (number of clusters to be determined from results of Test No. 160) - SJPPT No. 161
- (8) Test of modified E45 chemical bomb fired statically, in area covered by vegetation (nine bombs to be fired simultaneously) - SJPPT No. 162
- (9) Test of E45 chemical bomb, modified as determined by Edgewood tests, filled GA, dropped in area
to be determined

SJPPT No. 163

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4. PROGRESS OF TESTS (Cont'd)

- (10) Test of E45 chemical bomb, filled GA, modified as determined by Edgewood tests, dropped into area covered by vegetation (number of clusters to be determined by results of 163). - SJPPPT No. 164
- (11) Test of E45 chemical bomb with various shaped charges, filled GA, dropped into open in small number (number to be determined by Edgewood tests) - SJPPPT No. 165
- (12) Test of 125-lb. T3 bomb, filled GB, with modified burster, dropped singly in open - SJPPPT No. 173.
- c. Test No. 174, "Test of E45 Chemical Bomb, filled GB with modified burster, dropped in small quantity in open," will be held in abeyance pending results of comparative tests between the E45 and E54 bombs, to be conducted by Technical Command.

5. METEOROLOGY

- a. Weather summary for the month of October 1949 is included as Appendix A.

6. PERSONNEL

- a. Captain Jay S. Stockhardt departed this station on 10 October 1949 for Zone of Interior on permanent change of station.
- b. Captain Alton K. Smith arrived from Zone of Interior on 12 October 1949 on permanent change of station.
- c. Mr. Lucius C. Andrews, P-4, Chemist arrived on 12 October 1949 for duty with the Technical Division.

7. VISITORS

- a. During the period covered by this report no persons visited the Project.

APPROVED:

PAUL R. SMITH
Colonel, Cml C
Commanding

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Major, Technical Division
Technical Director

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TEST
NO.

STATUS

-
- 170 Multiple test of E23 Smoke Pot,
Filled GA, Dropped from Airplane,
with Onshore Wind to Simulate
Smoke (Number to be determined
from results of Test No. 168). Awaiting completion of Test No. 168
- 171 Test of 4.2" Chemical Mortar
Shell, Filled GB, Fired Static-
ally in the Open (Nine to be fired
simultaneously). Awaiting material
- 172 Test of 4.2" Chemical Mortar Shell,
Filled GB, Fired from Mortar into
Open (Number to be determined from
results of Test No. 171). Awaiting completion of Test No. 171
- 174 Test of E45 Chemical Bomb, Filled
GB, with Modified Burster, Dropped
in Small Quantity in Open (Number
to be determined from Edgewood
tests). Awaiting completion of Edgewood Tests
- 175 Test of Single E23 Smoke Pot,
Filled GB, Functioned Statically
in Open on Land. Awaiting material
- 176 Test of Single E23 Smoke Pot,
Filled HD, Functioned Statically
in Open on Land. Test Completed, Report Distributed
- 177 Test of Single E23 Smoke Pot,
Filled HT, Functioned statically
in Open on Land. Material available - occupied on
other tests
- 178 Test of Single E23 Smoke Pot,
Filled HN3, Functioned Statically
in Open on Land. Material available - occupied on
other tests
- 179 Test of Single E23 Smoke Pot,
Filled HQ, Functioned Statically
in Open on Land. Material available - occupied on
other tests
- 180 Test of Suit, Protective, One Piece,
Impermeable, E1R1, and Related Items
Under Extreme Heat Load (Cml C Board
Project No. 782). Awaiting material

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TEST NO.	TITLE	STATUS
149	Test of M33A1 Spray Tank, Filled Unthickened GA in Open From Low Altitude.	Awaiting material
150	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Dropped Singly in Open.	Material available - occupied on other tests
151	Test of 125 lb. Chemical Bomb, T3E2, Filled Ga, with 35:1 Burster Ratio, Dropped in Multiple into Open Area (Number to be determined from results of Test No. 150).	Awaiting completion of Test No. 150
152	Test of Single 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Fired Staticallly in Area Covered by Vegetation.	Material available - occupied on other tests
153	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped Singly in Covered Area.	Material available - occupied on other tests
154	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio Dropped in Multiple into Covered Area (Number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153
166	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly in Open on Land.	Test in progress
167	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly in Area Covered by Vegetation.	Material available - occupied on other tests
168	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly on Water with Onshore Wind.	Material available - occupied on other tests
169	Multiple Test of E23 Smoke Pot, Filled GA, Dropped from Boat, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168

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OBJECT

TEST NO.	TITLE	STATUS
89	Surveillance of Bombs, Chemical, 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled, not coated.	Current, long range sampling
99	Surveillance of VKL	Test Completed, Report Distributed
102	Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Board Test No. 724)	Test Completed, Report Distributed
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Material available - occupied on other tests
132	Surveillance of Bomb, Particulate, 4 lb., E-1.	Test Completed, Report Distributed
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions.	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with On-shore and Offshore Winds.	Test Completed, Report Distributed
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired.	Material available - occupied on other tests
146	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (Number to be determined from results of Test No. 130).	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticly in Covered Area (Nine to be fired simultaneously)	Material available - occupied on other tests
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Covered by Vegetation (Number to be determined from results of Test No. 147).	Awaiting completion of Test No. 147

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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 74
1 NOVEMBER 1949 THROUGH 30 NOVEMBER 1949

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 74

1 November 1949 THROUGH 30 NOVEMBER 1949

by

San Jose Project Technical Staff

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7-8	Chief, Medical Division, Army Chemical Center, Maryland
9-13	Technical Director, Camp Detrick, Frederick, Maryland
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15	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Maryland
16-17	Research and Development Board, Technical Reference Branch, Document Section, Room 3D-641, National Military Establish- ment, Washington 25, D.C.
18	Military Applications Division, U.S. Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D.C.; Attention: Chemical Officer
19-23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W., Washington, D.C. (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
24-26	Canadian Technical Representative, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
27	British Liaison Officer, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

1 December 1949

SUBJECT: San Jose Project Progress Report No. 74
Period 1 November 1949 through 30 November 1949

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

No reports were distributed during the period covered by this report.

2. PROGRESS OF TESTS DURING THE MONTH OF NOVEMBER

a. Static Test in the Open of a Single E23 Smoke Pot,
GA Filled - SJPPT No. 166.

- (1) Phase 4 of this test was performed on 9 November 1949. This phase completed field work in connection with this particular test.
- (2) The final reporting of this test is being delayed pending further information and materials required in preparation of the report.

b. Static Test of Single E23 Smoke Pot,
GA Filled, on Water with Onshore Wind - SJPPT No. 168.

- (1) An attempt was made to run Phase 1 of this test on 16 November 1949. The actual run was made, but no agent was dispersed by the smoke pot.
- (2) Phase 1 of this test was performed successfully on 18 November 1949.
- (3) Phases 2 and 3 were performed on 23 and 30 November 1949 respectively.

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3. PROGRESS OF TESTS

- a. A complete list of tests scheduled for the San Jose Project together with pertinent information is included as Appendix B.

4. METEOROLOGY

- a. Weather summary for the month of November 1949 is included as Appendix A.

5. SUPPLY

Great strides have been made in speeding up the supply of impregnated clothing as required by the San Jose Project with the institution of new supply channels for this particular item. It has been the policy to utilize impregnated clothing in lieu of impermeable suits wherever possible due to the discomfort caused by the latter item. Up to the present time the necessity for ordering impregnated clothing from the Zone of Interior has on occasion caused undue delay in the conduct of tests. An impregnating plant has now been established in Panama with the express purpose of supplying this clothing to the Antilles Command. It is now possible for the San Jose Project to order clothing from this plant through agencies in Puerto Rico thereby expediting continuous supply and removing the possibility of future delays in test work due to lack of impregnated clothing. The first such shipment of clothing is expected on or about 3 December 1949. The Chemical Officer of the Antilles has been extremely cooperative in instituting this new channel of supply.

6. INSTRUMENT REPAIR

With the arrival of an Instrument Repairman for permanent duty with the San Jose Project, the setting up of an instrument repair section has been instituted. This new section should aid greatly in maintenance and repair of such field equipment as total dosage pumps, rotary samplers, sampling apparatus, racks, etc.

7. CHANGE HOUSE

Work is nearing completion on the remodeling of the change house on Water Island. The new arrangement will contribute much to the safety in dressing and undressing of personnel working in or around contaminated areas.

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(SJPPR No. 74)

8. PERSONNEL

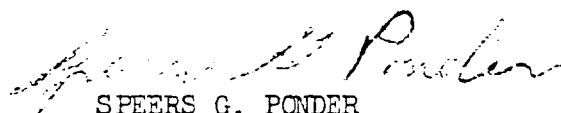
- a. Major Arnold C. Breuning arrived on 16 November 1949, from Zone of Interior on permanent change of station.
- b. Mr. Donald R. Schiebel, Instrument Repairman, arrived on 8 November 1949 for duty with the Technical Division.

9. VISITORS

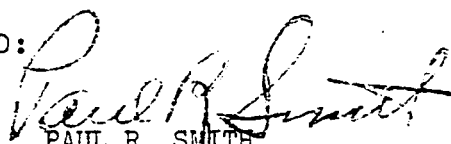
- a. During the period covered by this report, the following persons visited the San Jose Project:

12 November 1949 Major General Feldman, Quartermaster General, arrived San Jose Project for a one day visit.

16 November 1949 Lt. General William H. H. Morris, Commander-in-Chief, Caribbean Command, arrived for a one day inspection of the San Jose Project. General Morris was accompanied by Brigadier General Edwin L. Sibert, Commanding General, U. S. Army Forces, Antilles.


SPEERS G. PONDER
Major, Cml C
Technical Director

APPROVED:


PAUL R. SMITH
Colonel, Cml C
Commanding

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PROGRESS OF TESTS, SAN JOSE PROJECT

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<u>TEST NO.</u>	<u>TITLE</u>	
89	Surveillance of I 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled, not coated.	Current, long range sampling
99	Surveillance of VKL	Test Completed, Report Distributed
102	Location of Entrances to Gasproof Shelters in Relation to Prevail- ing Winds (Wooded Phase of Cml C Board Test No. 724)	Test Completed, Report Distributed
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Material available -- occupied on other tests
132	Surveillance of Bomb, Particulate, 4 lb., E-1.	Test Completed, Report Distributed
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions.	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with On- shore and Offshore Winds.	Test Completed, Report Distributed
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired.	Material available -- occupied on other tests
146	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (Number to be determined from re- sults of Test No. 130).	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticly in Covered Area (Nine to be fired simultaneously)	Material available -- occupied on other tests
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Cover- ed by Vegetation (Number to be determined from results of Test No. 147).	Awaiting completion of Test No. 147

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TEST
NO.

TITLE

TEST NO.	TITLE	
149	Test of M33A1 Spray Tank, Filled Unthickened GA in Open From Low Altitude.	Awaiting material
150	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Dropped Singly in Open.	Material available - occupied on other tests
151	Test of 125 lb. Chemical Bomb, T3E2, Filled Ga, with 35:1 Burster Ratio, Dropped in Multiple into Open Area (Number to be determined from results of Test No. 150).	Awaiting completion of Test No. 150
152	Test of Single 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Fired Staticallly in Area Covered by Vegetation.	Material available - occupied on other tests
153	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped Singly in Covered Area.	Material available - occupied on other tests
154	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio Dropped in Multiple into Covered Area (Number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153
166	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly in Open on Land.	Test completed - report in preparation
167	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly in Area Covered by Vegetation.	Material available - occupied on other tests
168	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly on Water with Onshore Wind.	Test in progress
169	Multiple Test of E23 Smoke Pot, Filled GA, Dropped from Boat, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168

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TEST NO.	TITLE	STATUS
170	Multiple test of E23 Smoke Pot, Filled GA, Dropped from Airplane, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168
171	Test of 4.2" Chemical Mortar Shell, Filled GB, Fired Statically in the Open (Nine to be fired simultaneously).	Awaiting material
172	Test of 4.2" Chemical Mortar Shell, Filled GB, Fired from Mortar into Open (Number to be determined from results of Test No. 171).	Awaiting completion of Test No. 171
174	Test of E45 Chemical Bomb, Filled GB, with Modified Burster, Dropped in Small Quantity in Open (Number to be determined from Edgewood tests).	Awaiting completion of Edgewood Tests
175	Test of Single E23 Smoke Pot, Filled GB, Functioned Statically in Open on Land.	Awaiting material
176	Test of Single E23 Smoke Pot, Filled HD, Functioned Statically in Open on Land.	Test Completed, Report Distributed
177	Test of Single E23 Smoke Pot, Filled HT, Functioned statically in Open on Land.	Material available - occupied on other tests
178	Test of Single E23 Smoke Pot, Filled HN3, Functioned Statically in Open on Land.	Material available - occupied on other tests
179	Test of Single E23 Smoke Pot, Filled HQ, Functioned Statically in Open on Land.	Material available - occupied on other tests
180	Test of Suit, Protective, One Piece, Impermeable, ELRL, and Related Items Under Extreme Heat Load (Cml C Board Project No. 782).	Awaiting material

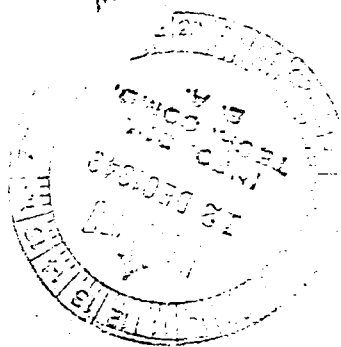
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TEST
NO.

TITLE

STATUS

TEST NO.	TITLE	STATUS
184	Operational Scale Test with German KC 250 III Gr Bombs, Filled GA. Technical Command Field Test No. 114.	Awaiting material
185	Test of Single 250 kg German, GA Filled Bomb Fired Staticly in the Open Under Inversion or Zero Temperature Gradient Conditions.	Awaiting material
186	Test of Single 250 kg German, GA Filled Bomb Dropped into Open and also into Covered Area Under Inversion or Zero Temperature Gradient Conditions.	Awaiting material



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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 75
1 DECEMBER 1949 THROUGH 31 DECEMBER 1949

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 75

1 DECEMBER 1949 THROUGH 31 DECEMBER 1949

by

San Jose Project Technical Staff

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1	Chief, Chemical Corps
2	Chief, Research and Engineering Division OCCmLC, Army Chemical Center, Maryland
3	Chief, Proving Ground Section, Development Branch, Research and Engineering Division, OCCmLC, Army Chemical Center, Maryland
4	Secretary, Research Council, OCCmLC, Bldg. 330, Army Chemical Center, Maryland
5-6	Commanding Officer, Cml C Technical Command, Army Chemical Center, Maryland
7-8	Chief, Medical Division, Army Chemical Center, Maryland
9-13	Technical Director, Camp Detrick, Frederick, Maryland
14	President, Cml C Board, Army Chemical Center, Maryland
15	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Maryland
16-17	Research and Development Board, Technical Reference Branch, Document Section, Room 3D-641, National Military Establish- ment, Washington 25, D.C.
18	Military Applications Division, U.S. Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D.C.; Attention: Chemical Officer
19-23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W., Washington, D.C. (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
24-26	Canadian Technical Representative, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
27	British Liaison Officer, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

1 January 1949

SUBJECT: San Jose Project Progress Report No. 75
Period 1 December 1949 through 31 December 1949

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

No reports were distributed during the period covered by this report.

2. PROGRESS OF TESTS DURING THE MONTH OF DECEMBER

- a. Static Test of Single E23 Smoke Pot, GA Filled, on Water with Onshore Wind - SJPPT No. 168
 - (1) Phase 4 of this test was performed on 9 December 1949. This phase completed field work in connection with this particular test.
 - (2) The final reporting of this test is being delayed pending further information and materials required in preparation of the report.

3. PROGRESS OF TESTS

- a. A complete list of tests scheduled for the San Jose Project together with pertinent information is included as Appendix B.

4. METEOROLOGY

Weather summary for the month of December 1949 is included as Appendix A.

5. INSPECTION

Majors Harvey E. Sheppard, Frank V. Williams, and John G. Appel, Research and Engineering Division, Army Chemical Center, Maryland, arrived on 6 December 1949 in connection with a three-day inspection of

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(SJPPR No. 75)

5. INSPECTION (Cont'd)

technical facilities. They departed on 8 December 1949.

6. TRAINING

Mr. Joseph Mandelson from the Inspection Division, Office of the Chief, Chemical Corps, Army Chemical Center, Maryland, arrived on 6 December 1949 in connection with technical activities. During his stay at the Project, Mr. Mandelson oriented technical personnel in methods of evaluation of field data. In addition, he presented a course in statistical analysis of experimental data and generally outlined the methods of analysis and evaluation of test results. Mr. Mandelson returned to Army Chemical Center, Maryland on 18 December 1949.

7. HOLIDAY

During the period 23 December 1949 through 3 January 1950, enlisted personnel of the Project were given as much free time as possible in observance of the holiday season.

8. VISITORS

During the period covered by this report the following persons visited the San Jose Project:

21 December 1949 - Brigadier General Edwin F. Sibert, Commanding General, U. S. Army Forces, Antilles, and party arrived for a one-day visit to the Project. General Sibert and party departed on 22 December 1949.

Speers G. Ponder

SPEERS G. PONDER
Major, Cml C
Technical Director

APPROVED:

Paul R. Smith
PAUL R. SMITH
Colonel, Cml C
Commanding

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PROGRESS OF TESTS, SAN JOSE PROJECT

TEST

NO.

TI

STATUS

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89	Surveillance of 125 lb., T-3, Coated and T-3, HD Filled, not coated.	ng range sampling
99	Surveillance of VKL	Test Completed, Report Distributed
102	Location of Entrances to Gasproof Shelters in Relation to Prevail- ing Winds (Wooded Phase of Cml C Board Test No. 724)	Test Completed, Report Distributed
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Material available - occupied on other tests
132	Surveillance of Bomb, Particulate, 4 lb., E-1.	Test Completed, Report Distributed
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions.	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with On- shore and Offshore Winds.	Test Completed, Report Distributed
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired.	Material available - occupied on other tests
146	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (Number to be determined from re- sults of Test No. 130).	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticallly in Covered Area (Nine to be fired simultaneously)	Material available - occupied on other tests
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Cover- ed by Vegetation (Number to be determined from results of Test No. 147).	Awaiting completion of Test No. 147

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TEST
NO.

STATUS

149	Test of M33A1 Spray Tank, Filled Unthickened GA in Open From Low Altitude.	Awaiting material
150	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Dropped Singly in Open.	Material available - occupied on other tests
151	Test of 125 lb. Chemical Bomb, T3E2, Filled Ga, with 35:1 Burster Ratio, Dropped in Multiple into Open Area (Number to be determined from results of Test No. 150).	Awaiting completion of Test No. 150
152	Test of Single 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Fired Statically in Area Covered by Vegetation.	Material available - occupied on other tests
153	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped Singly in Covered Area.	Material available - occupied on other tests
154	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio Dropped in Multiple into Covered Area (Number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153
166	Test of Single E23 Smoke Pot, Filled GA, Functioned Statically in Open on Land.	Test completed, report in preparation
167	Test of Single E23 Smoke Pot, Filled GA, Functioned Statically in Area Covered by Vegetation.	Material available - occupied on other tests
168	Test of Single E23 Smoke Pot, Filled GA, Functioned Statically on Water with Onshore Wind.	Test completed, report in preparation
169	Multiple Test of E23 Smoke Pot, Filled GA, Dropped from Boat, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168

UNCLASSIFIED

TEST
NO.

STATUS

- 170 Multiple test of E23 Smoke Pot, Filled GA, Dropped from Airplane, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168). Awaiting completion of Test No. 168
- 171 Test of 4.2" Chemical Mortar Shell, Filled GB, Fired Static-ally in the Open (Nine to be fired simultaneously). Awaiting material
- 172 Test of 4.2" Chemical Mortar Shell, Filled GB, Fired from Mortar into Open (Number to be determined from results of Test No. 171). Awaiting completion of Test No. 171
- 174 Test of E45 Chemical Bomb, Filled GB, with Modified Burster, Dropped in Small Quantity in Open (Number to be determined from Edgewood tests). Awaiting completion of Edgewood Tests
- 175 Test of Single E23 Smoke Pot, Filled GB, Functioned Staticallly in Open on Land. Awaiting material
- 176 Test of Single E23 Smoke Pot, Filled HD, Functioned Staticallly in Open on Land. Test Completed, Report Distributed
- 177 Test of Single E23 Smoke Pot, Filled HT, Functioned staticallly in Open on Land. Material available - occupied on other tests
- 178 Test of Single E23 Smoke Pot, Filled HN3, Functioned Staticallly in Open on Land. Material available - occupied on other tests
- 179 Test of Single E23 Smoke Pot, Filled HQ, Functioned Staticallly in Open on Land. Material available - occupied on other tests
- 180 Test of Suit, Protective, One Piece, Impermeable, E1R1, and Related Items Under Extreme Heat Load (Cml C Board Project No. 782). Awaiting material

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TES.

NO.

TITLE

STATUS

TES. NO.	TITLE	STATUS
184	Operational Scale Test with German KC-250 III Gr Bombs, Filled GA. Technical Command Field Test No. 114.	Awaiting material
185	Test of Single 250 kg German, GA Filled Bomb Fired Staticly in the Open Under Inversion or Zero Temperature Gradient Conditions.	Awaiting material
186	Test of Single 250 kg German, GA Filled Bomb Dropped into Open and also into Covered Area Under Inversion or Zero Temperature Gradient Conditions.	Awaiting material

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APPENDIX C

TEST NO. 135

Results of Sampling Performed on 13 December 1949

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Surveillance of Aged CK in M70, M78 and M79 Bombs, Test No. 135

Results of Sampling Performed on 13 December 1949

Semi-annual sampling in connection with this test was performed on 13 December 1949. This is the third series of samples taken, results of the first and second being reported in SJPPR No. 67 and SJPPR No. 69 respectively. Results of recent sampling appear below:

M78 Bombs

Date	Lot No.	Bomb No.	Date Filled	Abs. Press.	% Acidity	% Soluble Residue
13 Dec 49	206	29	Aug 44	34lbs.	0.11	0.253
	206	35	Aug 44	34	0.11	0.245
	206	12	Aug 44	34	0.13	0.260
	206	27	Sept 44	34	0.16	0.275
	206	19	Aug 44	34	0.08	0.175
	206	32	Aug 44	33	0.13	0.216
	206	5	Aug 44	35	0.15	0.291
	206	8	Aug 44	35	0.09	0.265
	206	21	Aug 44	33	0.14	0.344
	206	22	Aug 44	34	0.15	0.307
	206	11	Aug 44	35	0.13	0.231
	206	34	Aug 44	35	0.10	0.270
	206	13	Aug 44	35	0.11	0.338
	206	23	Aug 44	36	0.08	0.215
13 Dec 49	207	24	Aug 44	35	0.12	0.343
	207	31	Aug 44	No sample		
	207	28	Aug 44	35	0.11	0.411
	207	25	Aug 44	35	0.12	0.296
	207	2	Aug 44	35	0.09	0.459
	207	20	Aug 44	36	0.13	0.464
13 Dec 49	222	26	Sept 44	No threads	0.09	0.244
	222	9	Sept 44	35	0.10	0.268
	222	15	Sept 44	32	0.14	0.356
13 Dec 49	224	3	Sept 44	34	0.13	0.302
	224	1	Sept 44	31	0.07	Plugged
13 Dec 44	None	13A	Aug 44	34	0.13	0.313
	None	6	Aug 44	35	0.11	0.436
	None	4	Aug 44	34	0.10	0.223
	None	18	Aug 44	35	0.04	0.305

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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 76
1 JANUARY 1950 THROUGH 31 JANUARY 1950

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 76

1 JANUARY 1950 THROUGH 31 JANUARY 1950

by

SAN JOSE PROJECT TECHNICAL STAFF

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4	Secretary, Research Council, CCCmLC, Bldg. 330, Army Chemical Center, Maryland
5-6	Commanding Officer, Cml C Technical Command, Army Chemical Center, Maryland
7-8	Chief, Medical Division, Army Chemical Center, Maryland
9-13	Technical Director, Camp Detrick, Frederick, Maryland
14	President, Cml C Board, Army Chemical Center, Maryland
15	Commanding Officer, Edgewood Proving Ground, Army Chemical Center, Maryland
16-17	Research and Development Board, Technical Reference Branch, Document Section, Room 3D-641, National Military Establish- ment, Washington 25, D.C.
18	Military Applications Division, U.S. Atomic Energy Commission, 1901 Constitution Avenue, N.W., Washington, D.C.; Attention: Chemical Officer
19-23	Mr. R. Kingan, British CW Representative, British Joint Services Mission, Room 475, 1785 Massachusetts Ave., N.W., Washington, D.C. (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
24-26	Canadian Technical Representative, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
27	British Liaison Officer, Army Chemical Center, Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
28	SJP
29-31	SJP

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Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

1 February 1950

SUBJECT: San Jose Project Progress Report No. 76
Period 1 January 1950 through 31 January 1950

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

No reports were distributed during the period covered by this report.

2. PROGRESS OF TESTS DURING THE MONTH OF JANUARY

a. Surveillance of Bombs, Chemical 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled, not coated - SJPPT No. 89.

(1) Semi-annual sampling in connection with this test was performed on 12 January 1950. Results are included as Appendix C.

b. No additional tests were scheduled during the month of January for the following reasons:

(1) All available facilities were put at the disposal of a group of personnel from Camp Detrick during the performance of tests by this group at the San Jose Project.

(2) Sampling bubblers were not available in sufficient quantity to sustain test operations.

(3) A priority task of removing steel torpedo racks from the laboratory building was begun during the month of January.

3. PROGRESS OF TESTS

a. A complete list of tests scheduled for the San Jose Project together with pertinent information is included as Appendix B.

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(SJPPR NO. 76)

4. METEOROLOGY

Weather summary for the month of January 1950 is included as Appendix A.

5. SUPPLY

- a. Equipment necessary in operation of instrument repair shop arrived this project and has been temporarily installed for current operations.
- b. A shipment of 1000 impinger bubblers was received on 20 January 1950, thus relieving a critical shortage of this item at the San Jose Project.

6. PERSONNEL

- a. Major Harold F. Shartle arrived from Z of I on permanent change of station on 11 January 1950.
- b. Major Speers G. Ponder, Technical Director, departed for Washington, D. C., on 30 January 1950 for approximately thirty days (30) TDY in connection with Technical activities.

7. VISITORS

During the period covered by this report, no significant persons visited the San Jose Project.

Kenneth W. Copeland
KENNETH W. COPELAND
Major, Cml C
Deputy Technical Director

APPROVED:

Paul R. Smith
PAUL R. SMITH
Colonel, Cml C
Commanding

PROGRESS OF TESTS, SAN JOSE PROJECT

TEST NO.	TIT	STATUS
89	Surveillance of 125 lb., T-3, H Coated and T-3, HD Filled, not coated.	~~Current, long range sampling~~ UNCLASSIFIED
99	Surveillance of VKL	Test Completed, Report Distributed
102	Location of Entrances to Gasproof Shelters in Relation to Prevail- ing Winds (Wooded Phase of Cml C Board Test No. 724)	Test Completed, Report Distributed
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Material available - occupied on other tests
132	Surveillance of Bomb, Particulate, 4 lb., E-1.	Test Completed, Report Distributed
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions.	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with On- shore and Offshore Winds.	Test Completed, Report Distributed
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired.	Material available - occupied on other tests
146	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (Number to be determined from re- sults of Test No. 130).	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticallly in Covered Area (Nine to be fired simultaneously)	Material available - occupied on other tests
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Cover- ed by Vegetation (Number to be determined from results of Test No. 147).	Awaiting completion of Test No. 147

UNCLASSIFIED

TEST
NO.

UNCLASSIFIED

149	Test of M33A1 Spray Tank, Filled Unthickened GA in Open From Low Altitude.	Awaiting material
150	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Dropped Singly in Open.	Material available - occupied on other tests
151	Test of 125 lb. Chemical Bomb, T3E2, Filled Ga, with 35:1 Burster Ratio, Dropped in Multiple into Open Area (Number to be determined from results of Test No. 150).	Awaiting completion of Test No. 150
152	Test of Single 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Fired Staticallly in Area Covered by Vegetation.	Material available - occupied on other tests
153	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped Singly in Covered Area.	Material available - occupied on other tests
154	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio Dropped in Multiple into Covered Area (Number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153
166	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly in Open on Land.	Test completed, report in preparation
167	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly in Area Covered by Vegetation.	Material available - occupied on other tests
168	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly on Water with Onshore Wind.	Test completed, report in preparation
169	Multiple Test of E23 Smoke Pot, Filled GA, Dropped from Boat, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168

UNCLASSIFIED

TEST
NO.

STATUS

170 Multiple test of E23 Smoke Pot, Filled GA, Dropped from Airplane, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168
171 Test of 4.2" Chemical Mortar Shell, Filled GB, Fired Static-ally in the Open (Nine to be fired simultaneously).	Awaiting material
172 Test of 4.2" Chemical Mortar Shell, Filled GB, Fired from Mortar into Open (Number to be determined from results of Test No. 171).	Awaiting completion of Test No. 171
174 Test of E45 Chemical Bomb, Filled GB, with Modified Burster, Dropped in Small Quantity in Open (Number to be determined from Edgewood tests).	Awaiting completion of Edgewood Tests
175 Test of Single E23 Smoke Pot, Filled GB, Functioned Statically in Open on Land.	Awaiting material
176 Test of Single E23 Smoke Pot, Filled HD, Functioned Statically in Open on Land.	Test Completed, Report Distributed
177 Test of Single E23 Smoke Pot, Filled HT, Functioned statically in Open on Land.	Material available - occupied on other tests
178 Test of Single E23 Smoke Pot, Filled HN3, Functioned Statically in Open on Land.	Material available - occupied on other tests
179 Test of Single E23 Smoke Pot, Filled HQ, Functioned Statically in Open on Land.	Material available - occupied on other tests
180 Test of Suit, Protective, One Piece, Impermeable, ELRL, and Related Items Under Extreme Heat Load (Cml C Board Project No. 782).	Awaiting material

UNCLASSIFIED

UNCLASSIFIED

TEST
NO.

STATUS

184 Operational Scale Test with German KC 250 III Gr Bombs, Filled GA. Technical Command Field Test No. 114,

Awaiting material

185 Test of Single 250 kg German, GA Filled Bomb Fired Staticallly in the Open Under Inversion or Zero Temperature Gradient Conditions.

Awaiting material

186 Test of Single 250 kg German, GA Filled Bomb Dropped into Open and also into Covered Area Under Inversion or Zero Temperature Gradient Conditions.

Awaiting material

UNCLASSIFIED

(SJPIR No. 76, Ap

APPENDIX C

TEST NO. 89

Results of Sampling Performed on 12 January 1950

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M79 Bombs

UNCLASSIFIED

Date	Lot No.	Bomb No.	Date Filled	Press.	Acidity	% Soluble Residue
13 Dec 49	65	58	June 44	36 lbs.	0.13	0.130
	65	59	June 44	35	0.13	0.257
	65	57	June 44	35	0.10	0.267
	65	60	June 44	34	0.12	0.299
	65	56	June 44	34	0.10	0.324
13 Dec 49	456	55	Nov 44		No sample taken	
	456	53	Nov 44	34	0.10	0.185

M70 Bombs

Date	Lot No.	Bomb No.	Date Filled	Abs. Press.	% Acidity	% Soluble Residue
13 Dec 49	384	1	Oct 44	34	0.10	0.257
	394	2	Oct 44	35	0.09	0.207
	373	3	Oct 44	34	0.10	0.463
	382	4	Oct 44	34	0.18	0.436
	406	5	Nov 44	34	0.09	0.313
	352	6	Oct 44	35	0.11	0.400
	331	7	Oct 44	34	0.12	0.339
	399	8	Nov 44	23	0.14	0.480
	385	9	Nov 44	25	0.18	0.637
	367	10	Oct 44	35	0.18	0.599
	395	11	Oct 44	35	0.09	0.153
	374	12	Oct 44	23	0.09	0.154
	319	13	Oct 44	35	0.09	0.381
	410	14	Nov 44	36	0.06	0.427
	439	15	Nov 44	37	0.16	0.650

Meteorology

	Max. Temp.	Min. Temp.	Mean Max. Temp.	Mean Min. Temp.
July 49	86°F	65°F	83°F	70°F
Aug. 49	90°F	65°F	84°F	73°F
Sept. 49	88°F	63°F	84°F	72°F
Oct. 49	88°F	65°F	85°F	72°F
Nov. 49	91°F	71°F	88°F	75°F
Dec. 49	92°F	64°F	85°F	70°F

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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 77
1 FEBRUARY 1950 THROUGH 28 FEBRUARY 1950

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 77

1 FEBRUARY 1950 THROUGH 28 FEBRUARY 1950

by

SAN JOSE PROJECT TECHNICAL STAFF

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- 2 Chief, Research and Engineering Division
OCCmLC, Army Chemical Center, Maryland
- 3 Chief, Proving Ground Section, Development Branch,
Research and Engineering Division, OCCmLC
Army Chemical Center, Maryland
- 4 Secretary, Research Council, OCCmLC, Bldg. 330,
Army Chemical Center, Maryland
- 5-6 Commanding Officer, Cml C Technical Command,
Army Chemical Center, Maryland
- 7-8 Chief, Medical Division, Army Chemical Center, Maryland
- 9-13 Technical Director, Camp Detrick, Frederick, Maryland
- 14 President, Cml C Board, Army Chemical Center, Maryland
- 15 Commanding Officer, Edgewood Proving Ground,
Army Chemical Center, Maryland
- 16-17 Research and Development Board, Technical Reference Branch,
Document Section, Room 3D-641, National Military Establish-
ment, Washington 25, D.C.
- 18 Military Applications Division, U.S. Atomic Energy
Commission, 1901 Constitution Avenue, N.W., Washington,
D.C.; Attention: Chemical Officer
- 19-23 Mr. R. Kingan, British CW Representative, British Joint
Services Mission, Room 475, 1785 Massachusetts Ave., N.W.,
Washington, D.C. (Thru: Chief, Res & Eng Div., Army Chemical
Center, Maryland)
- 24-26 Canadian Technical Representative, Army Chemical Center,
Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center,
Maryland)
- 27 British Liaison Officer, Army Chemical Center, Maryland
(Thru: Chief, Res & Eng Div., Army Chemical Center, Maryland)
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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

UNCLASSIFIED
March 1950

SUBJECT: San Jose Project Progress Report No. 77
Period 1 February 1950 through 28 February 1950

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

No reports were distributed during the period covered by this report.

2. PROGRESS OF TESTS DURING THE MONTH OF FEBRUARY

- a. Test of Single E23 Smoke Pot, Filled HQ, Functioned Statically in Open on Land - SJPPT No. 179.

(1) Phases 1 and 2 of this test were performed on 15 and 17 February respectively.

3. PROGRESS OF TESTS

- a. A complete list of tests scheduled for the San Jose Project together with pertinent information is included as Appendix B.

4. METEOROLOGY

Weather summary for the month of February 1950 is included as Appendix A.

5. CONSTRUCTION

Removal of torpedo racks from Building 16, Laboratory Building, was completed on or about 15 February 1950. This task was undertaken in preparation for future remodeling of Building 16.

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(SJPPR No. 77)

6. LABORATORY

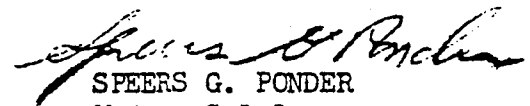
A comprehensive laboratory research program is now in progress, the purpose of which is to establish more accurate analytical methods in the laboratory phase of testing G agents.

7. PERSONNEL

Major Speers G. Ponder, Technical Director, returned to the San Jose Project after approximately 20 days TDY in and around Washington, D. C.

8. VISITORS

During the period covered by this report no significant persons visited the San Jose Project.


SPEERS G. PONDER
Major, Cml C
Technical Director

APPROVED:


PAUL R. SMITH
Colonel, Cml C
Commanding

UNCLASSIFIED

T.

~~UNCLASSIFIED~~
~~STATUS~~

TEST

NO.

TI

89	Surveillance of bombs, chemical, 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled, not coated.	Current, long range sampling
99	Surveillance of VKL	Test Completed, Report Distributed
102	Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Beard Test No. 724) .	Test Completed, Report Distributed
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Material available - occupied on other tests
132	Surveillance of Bomb, Particulate, 4 lb., E-1.	Test Completed, Report Distributed
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions.	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with On-shore and Offshore Winds.	Test Completed, Report Distributed
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired.	Material available - occupied on other tests
146	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (Number to be determined from results of Test No. 130).	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticly in Covered Area (Nine to be fired simultaneously)	Material available - occupied on other tests
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Covered by Vegetation (Number to be determined from results of Test No. 147).	Awaiting completion of Test No. 147

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TEST
NO.

TITLE

- 149 Test of M33A1 Spray Tank, Filled Unthickened GA in Open From Low Altitude.
- 150 Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Dropped Singly in Open.
- 151 Test of 125 lb. Chemical Bomb, T3E2, Filled Ga, with 35:1 Burster Ratio, Dropped in Multiple into Open Area (Number to be determined from results of Test No. 150).
- 152 Test of Single 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Fired Staticly in Area Covered by Vegetation.
- 153 Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped Singly in Covered Area.
- 154 Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio Dropped in Multiple into Covered Area (Number to be determined from results of Test No. 153)
- 166 Test of Single E23 Smoke Pot, Filled GA, Functioned Staticly in Open on Land.
- 167 Test of Single E23 Smoke Pot, Filled GA, Functioned Staticly in Area Covered by Vegetation.
- 168 Test of Single E23 Smoke Pot, Filled GA, Functioned Staticly on Water with Onshore Wind.
- 169 Multiple Test of E23 Smoke Pot, Filled GA, Dropped from Boat, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168).

Awaiting material

Material available—occupied on other tests

Awaiting completion of Test No. 150

Material available—occupied on other tests

Material available—occupied on other tests

Awaiting completion of Test No. 153

Test completed—report in preparation

Material available—occupied on other tests

Test completed—report in preparation

Awaiting completion of Test No. 168

TEST

NO.

TITLE

STATUS

- 170 Multiple test of Filled GA, Dropped from Airplane, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168). Awaiting completion of Test No. 168
- 171 Test of 4.2" Chemical Mortar Shell, Filled GB, Fired Static-ally in the Open (Nine to be fired simultaneously). Awaiting material
- 172 Test of 4.2" Chemical Mortar Shell, Filled GB, Fired from Mortar into Open (Number to be determined from results of Test No. 171). Awaiting completion of Test No. 170
- 174 Test of E45 Chemical Bomb, Filled GB, with Modified Burster, Dropped in Small Quantity in Open (Number to be determined from Edgewood tests). Awaiting completion of Edgewood tests
- 175 Test of Single E23 Smoke Pot, Filled GB, Functioned Statically in Open on Land. Awaiting material
- 176 Test of Single E23 Smoke Pot, Filled HD, Functioned Statically in Open on Land. Test Completed, Report Distributed
- 177 Test of Single E23 Smoke Pot, Filled HT, Functioned statically in Open on Land. Material available occupied on other tests
- 178 Test of Single E23 Smoke Pot, Filled HN3, Functioned Statically in Open on Land. Material available occupied on other tests
- 179 Test of Single E23 Smoke Pot, Filled HQ, Functioned Statically in Open on Land. Test in progress
- 180 Test of Suit, Protective, One Piece, Impermeable, ELRL, and Related Items Under Extreme Heat Load (Cml C Board Project No. 782). Awaiting material

INCLASSIFIED

TEST
NO.

TITLE

RECEIVED
STATUS

- 184 Operational Scale test with German KC 250 III Gr Bombs, Filled GA. Technical Command Field Test No. 114. Awaiting material
- 185 Test of Single 250 kg German, GA Filled Bomb Fired Staticly in the Open Under Inversion or Zero Temperature Gradient Conditions. Awaiting material
- 186 Test of Single 250 kg German, GA Filled Bomb Dropped into Open and also into Covered Area Under Inversion or Zero Temperature Gradient Conditions. Awaiting material

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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 78
1 MARCH 1950 THROUGH 31 MARCH 1950

APR 17 1950

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SAN JOSE PROJECT PROGRESS REPORT

NUMBER 78

1 March 1950 through 31 March 1950

by

SAN JOSE PROJECT TECHNICAL STAFF

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Research and Engineering Division, OCCmLC
Army Chemical Center, Maryland
- 4 Secretary, Research Council, OCCmLC, Bldg. 338,
Army Chemical Center, Maryland
- 5-6 Commanding Officer, Cml C Technical Command,
Army Chemical Center, Maryland
- 7-8 Chief, Medical Division, Army Chemical Center, Maryland
- 9-13 Technical Director, Camp Detrick, Frederick, Maryland
- 14 President, Cml C Board, Army Chemical Center, Maryland
- 15 Commanding Officer, Edgewood Proving Ground,
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Document Section, Room 3D-641, National Military Establish-
ment, Washington 25, D.C.
- 18 Military Applications Division, U.S. Atomic Energy
Commission, 1901 Constitution Avenue, N.W., Washington,
D.C.; Attention: Chemical Officer
- 19-23 Mr. R. Kingan, British CW Representative, British Joint
Services Mission, Room 475, 1785 Massachusetts Ave., N.W.,
Washington, D.C. (Thru: Chief, Res & Eng Div., Army Chemical
Center, Maryland)
- 24-26 Canadian Technical Representative, Army Chemical Center,
Maryland (Thru: Chief, Res & Eng Div., Army Chemical Center,
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- 27 British Liaison Officer, Army Chemical Center, Maryland
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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

CMLTD

UNCLASSIFIED 1950

SUBJECT: San Jose Project Progress Report No. 78
Period 1 March 1950 through 31 March 1950

TO: Chief, Chemical Corps
Department of the Army
Washington 25, D. C.

1. STATUS OF REPORTS

No reports were distributed during the period covered by this report.

2. PROGRESS OF TESTS DURING THE MONTH OF MARCH

No tests were conducted during the period covered by this report.

3. PROGRESS OF TESTS

- a. A complete list of tests scheduled for the San Jose Project together with pertinent information is included as Appendix B.

4. METEOROLOGY

Weather summary for the month of March 1950 is included as Appendix A.

5. LABORATORY

A comprehensive laboratory research program is now in progress, the purpose of which is to establish more accurate analytical methods in the laboratory phase of testing G agents.

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6. PERSONNEL

- a. A platoon of twenty-three men under the command of 1st Lt. William B. Strough, participated in the Cp. Portex Vieques maneuvers as a 4.2 inch mortar platoon.
- b. 1st Lt. Louis C. Elsaesser was relieved from duty with the Technical Division on 13 March 1950, and assigned as Asst. Post Signal Officer.
- c. Captain Lawrence M. Dellinger was relieved from duty with the Technical Division on 15 March 1950, and assigned as Asst. Supply and Evacuation Staff Officer.

7. VISITORS

During the period covered by this report the following significant persons visited the San Jose Project:

15 March 1950	Captain Roy C. Kackley, MSC, Sanitation Officer from Antilles, arrived San Jose Project to inspect all local eating and drinking places.
13 March 1950	Dr. Rodenhiser, Department of Agriculture and Dr. Ian W. Tervet from Camp Detrick, arrived San Jose Project in connection with Technical Activities.
20 March 1950	Capt. Wilson and Lt. Iver arrived San Jose Project from Antilles, to assist local authorities with the Governor's inaugural parade.
23 March 1950	81st Army Band and one hundred and twenty-eight troops from Antilles arrived San Jose Project for Governor's inaugural parade.
23 March 1950	Lt. General William H. Morris, Commander-in-Chief, Caribbean Command; Brig. General R. Bean, Commanding General, Caribbean Air Command; Rear Admiral L. W. Hanson, Commanding Officer, 15th Naval District; and party arrived San Jose for a five-day visit to review the Governor's inaugural parade.

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23 March 1950

Colonel C. R. Gildart, Chief of Staff Antilles, and party arrived San Jose Project for a five-day visit to review the Governor's inaugural parade.

8. INAUGURAL PARADE

- a. Colonel Paul R. Smith, Commanding Officer, San Jose Project participated in the inauguration parade of the Governor of the Virgin Islands on 24 March 1950. Major Kenneth W. Copeland was Commander of the eighty troops.

Speers G. Ponder

SPEERS G. PONDER
Major, Cml C
Technical Director

APPROVED:

Paul R. Smith

PAUL R. SMITH
Colonel, Cml C
Commanding

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TEST
NO.

PROJECT
AL **UNCLASSIFIED**
STATUS

89	Surveillance of Bombs, Chemical, 125 lb., T-3, H Filled, Heresite Coated and T-3, HD Filled, not coated.	Current, long range sampling
99	Surveillance of VKL	Test Completed, Report Distributed
102	Location of Entrances to Gasproof Shelters in Relation to Prevailing Winds (Wooded Phase of Cml C Beard Test No. 724)	Test Completed, Report Distributed
130	Static Test of Nine 4.2" Chemical Mortar Shells, GA Filled, in the Open.	Material available - occupied on other tests
132	Surveillance of Bomb, Particulate, 4 lb., E-1.	Test Completed, Report Distributed
135	Surveillance of CK Stored in Bombs and Ton Containers Under Tropical Conditions.	Test in progress
136	Test of M70 Bomb, Filled HD, in Open and in Area Covered with Vegetation, Static Fired, with On-shore and Offshore Winds.	Test Completed, Report Distributed
137	Test of M70 Bomb, Filled GA (E46) in Open Area, Static Fired.	Material available - occupied on other tests
146	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Open Area (Number to be determined from results of Test No. 130).	Awaiting completion of Test No. 130
147	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired Staticallly in Covered Area (Nine to be fired simultaneously)	Material available - occupied on other tests
148	Test of 4.2" Chemical Mortar Shell, Filled GA, Fired into Area Covered by Vegetation (Number to be determined from results of Test No. 147).	Awaiting completion of Test No. 147

AL **UNCLASSIFIED**

TEST
NO.

TITLE

CONFIDENTIAL

149	Test of M33A1 Spray Tank, Filled Unthickened GA in Open From Low Altitude.	Awaiting material
150	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Dropped Singly in Open.	Material available-occupied on other tests
151	Test of 125 lb. Chemical Bomb, T3E2, Filled Ga, with 35:1 Burster Ratio, Dropped in Multiple into Open Area (Number to be determined from results of Test No. 150).	Awaiting completion of Test No. 150
152	Test of Single 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio, Fired Staticallly in Area Covered by Vegetation.	Material available-occupied on other tests
153	Test of 125 lb. Chemical Bomb, T3E2, Filled GA with 35:1 Burster Ratio, Dropped Singly in Covered Area.	Material available-occupied on other tests
154	Test of 125 lb. Chemical Bomb, T3E2, Filled GA, with 35:1 Burster Ratio Dropped in Multiple into Covered Area (Number to be determined from results of Test No. 153)	Awaiting completion of Test No. 153
166	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly in Open on Land.	Test completed-report in preparation
167	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly in Area Covered by Vegetation.	Material available-occupied on other tests
168	Test of Single E23 Smoke Pot, Filled GA, Functioned Staticallly on Water with Onshore Wind.	Test completed-report in preparation
169	Multiple Test of E23 Smoke Pot, Filled GA, Dropped from Boat, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168).	Awaiting completion of Test No. 168

CONFIDENTIAL
CONFIDENTIAL

TEST
NO.

TITLE

STATUS

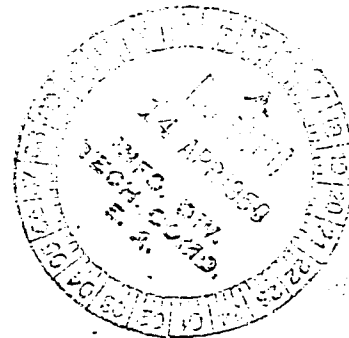
- 170 Multiple test of E2, Filled GA, Dropped from Airplane, with Onshore Wind to Simulate Smoke (Number to be determined from results of Test No. 168). Awaiting completion of Test No. 168
- 171 Test of 4.2" Chemical Mortar Shell, Filled GB, Fired Static-ally in the Open (Nine to be fired simultaneously). Awaiting material
- 172 Test of 4.2" Chemical Mortar Shell, Filled GB, Fired from Mortar into Open (Number to be determined from results of Test No. 171). Awaiting completion of Test No. 170
- 174 Test of E45 Chemical Bomb, Filled GB, with Modified Burst, Dropped in Small Quantity in Open (Number to be determined from Edgewood tests). Awaiting completion of Edgewood tests
- 175 Test of Single E23 Smoke Pot, Filled GB, Functioned Statically in Open on Land. Awaiting material
- 176 Test of Single E23 Smoke Pot, Filled HD, Functioned Statically in Open on Land. Test Completed, Report Distributed
- 177 Test of Single E23 Smoke Pot, Filled HT, Functioned staticly in Open on Land. Material available occupied on other tests
- 178 Test of Single E23 Smoke Pot, Filled HN3, Functioned Staticly in Open on Land. Material available occupied on other tests
- 179 Test of Single E23 Smoke Pot, Filled HQ, Functioned Staticly in Open on Land. Test in progress
- 180 Test of Suit, Protective, One Piece, Impermeable, E1R1, and Related Items Under Extreme Heat Load (Cml C Board Project No. 782). Awaiting material

CLASSIFIED

TEST
NO.

ATLANTA
STATUS

- 184 Operational tests with German KC 250 III Gr Bombs, Filled GA. Technical Command Field Test No. 114. Awaiting material
- 185 Test of Single 250 kg German, GA Filled Bomb Fired Staticly in the Open Under Inversion or Zero Temperature Gradient Conditions. Awaiting material
- 186 Test of Single 250 kg German, GA Filled Bomb Dropped into Open and also into Covered Area Under Inversion or Zero Temperature Gradient Conditions. Awaiting material



0318

SAN JOSE PROJECT PROGRESS REPORT
NUMBER 102
LOCATION OF ENTRANCES TO GASPROOF
SHELTERS IN RELATION TO PREVAILING WINDS

LOCATION OF ENTRANCES TO GASPROOF SHELTERSIN RELATION TO PREVAILING WINDS**CLASSIFIED**1. AUTHORITY:

Letter, file CWSWR dated 8 October 1946, Subject: Chemical Corps Board Project No. 724, "The Location of Entrances to Gasproof Shelters".

2. OBJECT:

The objective pertinent to wooded terrain under Project No. 724. To determine by field tests the best location, with respect to wind, for entrances to gasproof shelters constructed in a building located in accordance with upper diagram, Fig. 4, TM 3-350 marked "BAD".

3. REFERENCES AND HISTORY:

No previous test of this type has been run at this project.

4. SPECIAL CONDITIONS:

- a. The test was run under conditions of reasonable wind velocity.
- b. The test was conducted in two phases:
 - (1) Upgrade slope with respect to wind.
 - (2) Downgrade slope with respect to wind.

5. PROCEDURE:

a. An unventilated gasproof shelter, 10x10x8 $\frac{1}{2}$ feet, was constructed and set up in an area which conforms as closely as possible to upper diagram of Figure 4, TM 3-350, marked "BAD". In the center of each of the four (4) walls an air lock equipped with gasproof curtains was constructed.

b. Preliminary tests with HC and colored smokes :

- (1) HC smoke was released on the upwind side of the shelter to photograph convection currents set up by the presence of trees and vegetation around the shelter.

5. PROCEDURE: (Cont.)

- (2) ~~HC smoke was released~~ on the downwind side of the shelter for reasons set forth in (1) above.
- (3) Colored grenades of contrasting colors were released simultaneously upwind and downwind from the shelter for the purpose of studying convection currents in the shelter area. Colored 16 mm movies were taken of this phase of operation.
- (4) Cloth streamers were tied to trees and bushes in such a way so that they did not become fouled on them to aid in observing wind currents in the shelter area.

c. Tests with phosgene:

- (1) The test as a whole was run between 17 May and 30 September 1949. Over a period of two days, the agent CG was released from five one-ton containers placed upwind from the shelter, at a distance of approximately 45 feet. Over another two-day period, the agent CG was released from twelve one-ton containers placed upwind from the shelter at a distance of approximately 150 feet.
 - (a) Phosgene was released from a series of upwind sources to obtain an even concentration on all entrances to the gasproof shelter. The flow of phosgene was regulated by needle valves and manometers. Sampling positions were placed at the following locations: Two (2) bubblers operated by total dosage pumps and rotary samplers in each of four (4) gas locks; two (2) bubblers operated by total dosage pumps and rotary samplers in the center of the protective shelter; two (2) bubblers operated as above on top of the shelter; two (2) bubblers operated as above two feet outside of each of four gas locks.
 - (b) Vapor assessment was made using impinger and Dugway bubblers. All samples were taken at a sampling height of 18 inches at a flow rate of one liter per minute. Samples were collected in alkaline hexamine (4% hexamine plus 2% sodium hydroxide in water) and analyzed by the Volhard method in accordance with Appendix A to the Plan of Test. The following samples were taken:

5. PROCEDURE: (Cont'd)

1. Test on Gas Lock No. 1.

- a. With gas lock Nos 2, 3, and 4 sealed and gas lock No. 1 closed but not sealed a continuous ten-minute sample was taken to determine operational leakage of the gasproof shelter curtains. These samples were taken twain the center of the protective shelter, two in gas lock No. 1, and two outside each of four gas locks, and two on top of the shelter. Phosgene test paper was used at six foot and four foot levels to supplement positive concentration indications.
- b. Using the same concentration as above five (5) men wearing gas masks left the gasproof shelter from the inside of the shelter through lock No. 1. The exits were made at two minute intervals, the first exit being made at one minute after the beginning of the samples. The samples continued one minute after the fifth man had left the shelter. The total sample was ten minutes. All men remained outside the shelter after their exit. The sampling positions were the same as a. above.
- c. Using the same concentration as above five (5) men wearing gas masks entered the gasproof shelter through gas lock No. 1. The entrances were made at two minute intervals, the first entrance being made one minute after the beginning of the samples. The sample continued one minute after the fifth man had entered the shelter. The total sample was ten minutes. All five men remained inside the shelter. The sampling positions were the same as a. above. Procedure for entering was as that outlined in Section III, FM 21-40, September 7, 1942.
- d. Using the same concentration as above two men carrying a litter patient, all wearing gas masks, entered the gasproof shelter through gas lock No. 1. Their method of entry was as outlined in Section III, FM 21-40, September 7, 1942. The litter patient remained inside the

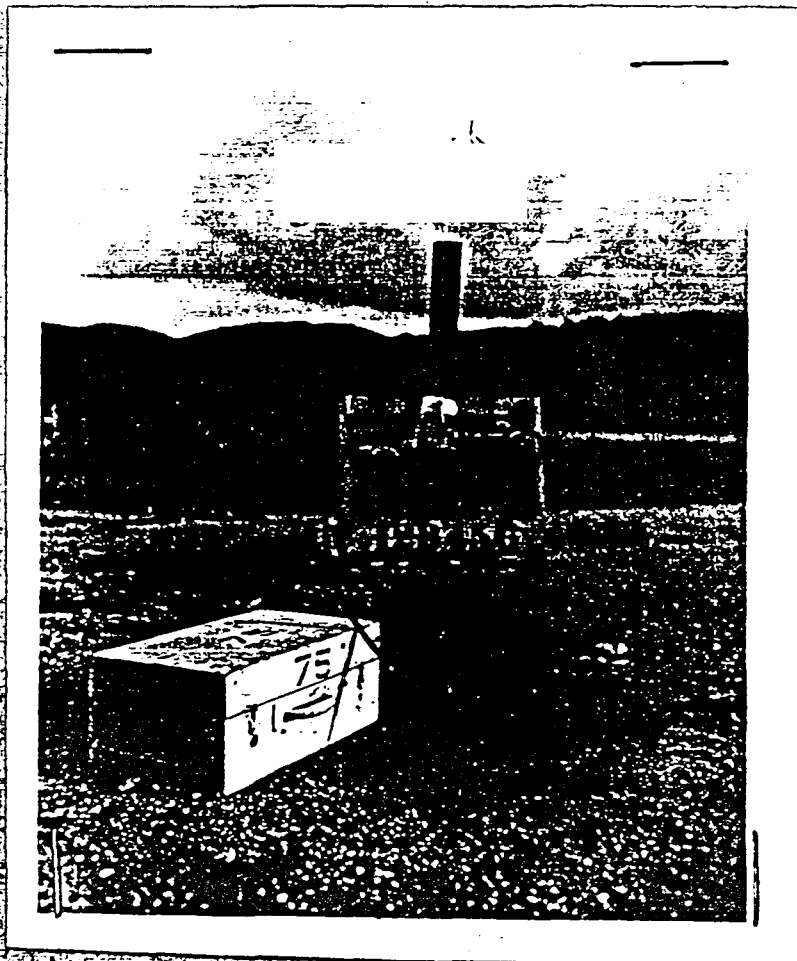


Height of vegetation, wooded area, offshore wind



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Wooded area, offshore wind



Bubbler setup, open area, offshore wind.

HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

NOV 6 1949

Classified

authority of letter dated 20 Dec '49

TC 9644

REPORT NUMBER 102

LOCATION OF ENTRANCES TO GASPROOF SHELTERS

IN RELATION TO PREVAILING WINDS

by

Technical Staff, San Jose Project

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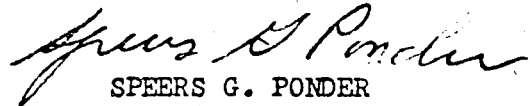
LOCATION OF ENTRANCES TO GASPROOF SHELTERS

IN RELATION TO PREVAILING WINDS

Submitted by:

Technical Staff
San Jose Project

Approved:



SPEERS G. PONDER
Major, Cml C
Technical Director

LOCATION OF ENTRANCES TO GASPROOF SHELTERS

IN RELATION TO PREVAILING WINDS

T A B L E O F C O N T E N T S

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LOCATION OF ENTRANCES TO GASPROOF SHELTERS
IN RELATION TO PREVAILING WINDS

S U M M A R Y

This test was conducted during the period 17 May 1949 through 30 September 1949. Its purpose was to determine by field tests the best location, with respect to wind, for entrances to gasproof shelters constructed in a building located in accordance with the upper diagram, Figure 4, TM 3-350, marked "BAD".

A shelter 10x10x8½ feet was constructed for use in the test and results obtained with the shelter on a downgrade as well as an up-grade slope with respect to the source. Throughout the test, the source of agent consisted of several one-ton containers of phosgene placed about the shelter.

Results of the various operations showed the downwind side of the shelter to be the most desirable, with side entrances next and upwind last. Results obtained at the side entrances more closely approximated those at the downwind entrance with upwind samplers giving consistently high readings.

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5. PROCEDURE: (Cont'd)

shelter and two men and the litter returned to the outside through gas lock No. 1. This operation was repeated until five litter patients had been placed in the gasproof shelter. The entrances were made at zero plus 1, 3, 5, 7, and 9 minutes and exits were made at zero plus 2, 4, 6, 8, and 10 minutes. The total sample was 10 minutes. Sampling positions were the same as a. above. During this operation one man operated the gasproof curtains.

2. Test on Gas Lock No. 2.

a. With gas locks Nos. 1, 3, and 4 sealed tests outlined in 5 c (1) (b) 1. a., b., c., and d. were repeated for gas lock No. 2. Sampling positions for this test were as follows:

2 positions inside the gasproof shelter
2 positions inside gas lock No. 2
2 positions outside each of four gas locks
2 positions on top of the shelter

3. Test on Gas Lock No. 3.

a. With gas lock Nos. 1, 2, and 4 sealed tests outlined in 5 c (1) (b) 1. a., b., c., and d. were repeated for gas lock No. 3. Sampling positions for this test were as follows:

2 positions inside the gasproof shelter
2 positions inside gas lock No. 3
2 positions outside each of four gas locks
2 positions on top of the shelter

4. Test on Gas Lock No. 4.

a. With gas lock Nos. 1, 2, and 3 sealed tests outlined in 5 c (1) (b) 1. a., b., c., and d. were repeated for gas lock No. 4. Sampling positions for this test were as follows:

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5. CONCLUSIONS:

is the downwind location for meteorological conditions existing during the several tests.

Although it was observed that convection currents existed and tended to hold gas around the downwind side of the shelter, bubbler results for the most part were lower, both inside and outside the downwind entrances.

Tests indicated that the side entrances were more desirable than the upwind entrance and more closely approximated the downwind entrance insofar as bubbler results are concerned. It was observed that the side entrance curtains had a tendency to blow up to some extent under high wind velocities even when weights were used on the curtains as is shown in the photographs included as Appendix D.

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5. PROCEDURE: (Cont'd)

~~2 positions inside the gasproof shelter~~
2 positions inside gas lock No. 4
2 positions outside each of four gas locks
2 positions on top of the shelter

5. Under similar conditions to those above and with all gasproof curtains closed a 10-minute sample was taken at all sampling positions with all outside gasproof curtains being opened simultaneously, for 10 seconds duration once each minute of sampling time.

d. Tests were conducted for one day with the agent CG released downwind from the protective shelter at approximately eight feet from the shelter in order that convection currents present around the shelter effected the cloud.

- (1) With Phosgene released from downwind of the shelter the procedure outlined in 5 c above was repeated.

e. Test outlined in 5 c was repeated for one concentration released from upwind, using a ventilation system in the shelter. This procedure was followed in Phase 2 only on 30 September 1949.

f. The procedures as listed above were repeated with the shelter on a downgrade slope. Operations with the source upwind were run for a three-day period while those with the source downwind were run for one day. The source consisted of sixteen one-ton containers at a distance of approximately one hundred feet.

6. RESULTS:

Results of operation with the gasproof shelter located on upgrade and downgrade slopes are tabulated in Appendices B and C respectively. Operations on the upgrade slope are referred to as Phase 1 while those on the downgrade slope are referred to as Phase 2.

7. CONCLUSIONS:

Tests conducted at San Jose Project, indicate that the best location, with respect to the wind, for entrances to gasproof shelters constructed in accordance with the upper diagram, Figure 4, TM 3-350, marked "BAD",

(SJPR No. 102, App 1)

APPENDIX A

PLAN OF TEST

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~~CANCELLED~~
~~HEADQUARTERS, SAN JOSE PROJECT~~

~~Office of the Technical Director~~
St. Thomas, Virgin Islands

16 May 1949

PLAN OF TEST NUMBER 102

LOCATION OF ENTRANCES TO GASPROOF SHELTERS

IN RELATION TO PREVAILING WINDS

Wooded Phase of Chemical Corps Board Test No. 724

Plan of Test No. 102 is rescinded and the following Plan of Test is submitted in lieu thereof:

1. AUTHORITY:

Letter, file CWSWR, dated 8 October 1946, Subject: Chemical Corps Board Project No. 724, "The Location of Entrances to Gasproof Shelters".

2. OBJECT:

The objective pertinent to wooded terrain under Project No. 724. To determine by field tests the best location, with respect to the wind, for entrances to gasproof shelters constructed in a building located in accordance with upper diagram, Fig. 4, TM 3-350, marked "BAD".

3. REFERENCES AND HISTORY:

No test of this type has been made on St. Thomas Island.

4. SPECIAL CONDITIONS:

- a. Wind velocity between 3 and 8 miles per hour.
- b. Test will be conducted in two phases.
 - (1) Upgrade slope with respect to wind.
 - (2) Downgrade slope with respect to wind.

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5. PROCEDURE:

- a. An unventilated gasproof shelter, 10x10x7 feet, will be constructed in an area which conforms as closely as possible with upper diagram of Figure 4, TM 3-350, marked "BAD". In the center of each of the four (4) walls an air lock equipped with gasproof curtains will be constructed.
- b. Preliminary Tests with HC and Color Smokes.
 - (1) HC smoke will be released on the upwind side of the shelter to photograph whatever convection currents may be set up by the presence of trees and vegetation around the shelter.
 - (2) HC smoke will be released on the downwind side of the shelter to photograph whatever convection currents may be set up by the presence of trees and vegetation around the shelter.
 - (3) Color grenades of contrasting colors will be released simultaneously upwind and downwind from the shelter for the purpose of studying convection currents in the shelter area. Colored 16 mm movies will be taken of the colored smoke to record action of eddy currents.
 - (4) Nylon streamers will be tied to trees and bushes in such a way so that they will not become fouled on them, to aid in observing wind currents in the shelter area.
- c. Tests with Phosgene.
 - (1) Tests will be conducted and repeated on each of three consecutive days with the agent CG released upwind from the protective shelter. The concentration will be increased each day but not to exceed 500 MG/cu M.
 - (a) Phosgene will be released on the upwind side of the protective shelter from five (5) one ton containers spaced to obtain an even concentration on all entrances to the gasproof shelter. The flow of phosgene from the one ton containers will be regulated by needle valves and manometers. Sampling positions will be placed at the following locations: Two (2) bubblers operated by total dosage pumps and rotary samplers in each of four (4) gas locks; two (2) bubblers operated by total dosage pumps and rotary samplers in the center of the protective shelter; two (2) bubblers operated by total dosage pumps and rotary samplers on top of the gasproof shelter; two (2) bubblers operated by total dosage pumps and rotary

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5. PROCEDURE: (Cor

samplers two feet outside of each of four gas locks.

- (b) Vapor assessment will be made using impinger bubblers. All samples will be taken at a sampling height of 18 inches at a flow rate of one liter per minute. Samples will be collected in alkaline hexamine (4% hexamine plus 2% sodium hydroxide in water) and analyzed by the Volhard method in accordance with Appendix A. The following samples will be taken:

1. Test on Gas Lock #1.

- a. With gas locks #2, 3, and 4 sealed and gas lock #1 closed but not sealed a continuous 10 minute sample will be taken to determine operational leakage of the gasproof shelter curtains. These samples will be taken two in the center of the protective shelter, two in gas lock #1, and two outside each of four gas locks, and two on top of the shelter. Phosgene test paper will be used at six foot and four foot levels to supplement positive concentration indications.
- b. Using the same concentration as above five (5) men wearing gas masks will leave the gasproof shelter from the inside of the shelter through lock #1. The exits will be made at two minute intervals, the first exit being made at one minute after the beginning of the samples. The samples will continue one minute after the fifth man has left the shelter. The total sample will be ten minutes. All men will remain outside the shelter after their exit. The sampling positions will be the same as a. above.
- c. Using the same concentration as above five (5) men wearing gas masks, will enter the gasproof shelter through gas lock #1. The entrances will be made at two minute intervals, the first entrance being made one minute after the beginning of the samples. The sample will continue one minute after the fifth man has entered the shelter. The total sample will be ten minutes. All five men remain inside the shelter. The sampling positions will be the same as a. above. Procedure for entering will be as that outlined in Section III, FM 21-40, September 7, 1942.
- d. ~~Using the same concentration~~ as above two men

mask,

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5. PROCEDURE: (Cont'd)

will enter the gasproof shelter through gas lock #1. Their method of entry will be as outlined in Section III, FM 21-40, September 7, 1942. The litter patient will remain inside the shelter, and two men and the litter will return to outside through gas lock #1. This operation will be repeated until five litter patients have been placed in the gasproof shelter. The entrances will be made at zero plus 1, 3, 5, 7, and 9 minutes and exits will be made at zero plus 2, 4, 6, 8, and 10 minutes. The total sample will be 10 minutes. Sampling positions will be the same as a. above. During this operation one man will operate the gasproof curtains.

2. Test on Gas Lock #2.

a. With gas locks #1, 3, and 4 sealed tests outlined in 5 c (1)(b) 1.a., b., c., and d. will be repeated for gas lock #2. Sampling positions for this test will be as follows:

- 2 positions inside the gasproof shelter
- 2 positions inside gas lock #2
- 2 positions outside each of four gas locks
- 2 positions on top of the shelter

3. Test on Gas Lock #3.

a. With gas lock #1, 2, and 4 sealed tests outlined in 5 c (1)(b) 1.a., b., c., and d. will be repeated for gas lock #3. Sampling positions for this test will be as follows:

- 2 positions inside the gasproof shelter
- 2 positions inside gas lock #3
- 2 positions outside each of four gas locks
- 2 positions on top of the shelter

4. Test on Gas Lock #4.

a. With gas lock #1, 2, and 3 sealed tests outlined in 5 c (1)(b) 1.a., b., c., and d. will be repeated for gas lock #4. Sampling positions for this test will be as follows:

- 2 positions inside the gasproof shelter
- 2 positions inside gas lock #4
- 2 positions outside each of four gas locks
- 2 positions on top of the shelter

5. Using the same concentration as above and with all gasproof curtains closed a 10 minute sample will be taken
proof-
second

with all outside gas-
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 10
 te of sampling time.

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5. PROCEDURE: (Cair)

- d. Tests will be conducted on each of two consecutive days with the agent CG released downwind from the protective shelter and close enough to the shelter that convection currents are present around the shelter. The concentration will be increased each day, but not to exceed 500 mg/cu meter.
 - (1) With Phosgene released from downwind of the shelter the procedure outlined in 5 c above will be repeated.
- f. Test outlined in 5 c will be repeated for one concentration released from upwind, using a ventilation system in the shelter.
- g. Such additional tests with CG as may be necessary to demonstrate conclusively the relative merits of each of the four (4) entrance locations for gasproof shelters.

6. LOCATION:

Area in wooded terrain suitable for test to conform as closely as possible with upper diagram of Figure 4, TM 3-350 - West End of St. Thomas Island. Shelter will be moved at completion of phase 1 and above test repeated (See par 4 b (2)).

7. TIME:

Test will begin 17 May 1949.

8. SERVICES AND EQUIPMENT:

a. Safety Section.

- (1) Will enforce safety regulations.
- (2) Will operate a safety point.
- (3) Will declare out of bounds test area to all except Technical Branch personnel.

b. Range Section

No direct function.

c. Chemical Test Section

- (1) Field Sampling Group.
 - (a) Will prepare, install, operate, and service all test equipment.

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8. SERVICES AND EQ

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(b) Will furnish 20 total dosage pumps.

(c) Will provide 10 rotary samplers.

(2) Laboratory Group.

(a) Will supply for each test necessary bubblers charged NaOH.

(b) Will analyze all samples.

(c) Prepare fresh Phosgene test paper.

d. Physiology Section.

No function.

e. Munitions and Weapons Section.

(1) Will supply 50 HC grenades.

(2) Will supply 20 color grenades.

(3) Will supply 6 ton containers filled with CG.

f. Photographic and Graphic Arts Section.

Will take photographs and moving pictures as requested by Test Officer and will include a profile of the terrain on each of the two axis (1-3)(2-4).

g. Meteorological Section.

(1) Will install meteorological equipment at the site.

(2) Will supply complete meteorological information on days of test.

h. Headquarters Detachment Commander.

No direct function.

i. Supply and Property Officer.

Will supply and gasproof curtains.

j. Transportation Officer.

(1) Will furnish necessary transportation.

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8. SERVICES AND EQUIPMENT: (Cont'd)

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j. (2) Will furnish necessary water patrol during the test.

k. Maintenance Officer.

Will construct gasproof shelter with 4 locks located respectively upwind, downwind, and at each side - dimensional 10 x 10 x 7 feet.

l. Rations and Mess Officer

Will furnish lunches as requested by Test Officer.

m. Surgeon.

Will provide ambulance, and aid man by 0830 on days of test.

n. Communications Officer.

(1) Between gasproof shelter (CP) and observation point.

(2) Between gasproof shelter (CP) and Main Camp.

o. Air Force.

Will furnish light plane for photographic work if possible.

p. Guard Section.

Will furnish guards as requested.

q. Test Officers:

Major Kenneth W. Copeland and Captain Lawrence M. Dellinger.

APPROVED:

Jay S. Stockhardt
JAY S. STOCKHARDT
Captain, Cml C
Deputy Technical Director

Kenneth W. Copeland
KENNETH W. COPELAND
Major, Cml C
Test Officer

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(SJPPT No. 102)

APPENDIX A

ESTIMATION OF PHOSGENE

(SRD Report CS/1251/42/F.10-T dated 18 June 1942 by J.W.C. Phillips)

PRINCIPLE:

Phosgene is hydrolyzed and the chloride titrated by the Volhard method.

SAMPLE FOR ANALYSES:

Samples will be collected in test tube bubblers containing 15 ml of alkaline hexamine (4% hexamine plus 2% NaOH in water).

REAGENTS:

Hexamine absorbing solution.
Normal Nitric Acid
N/50 AgNO_3
N/50 KCNS
Ferric Alum indicator
Acetone or nitrobenzene

METHOD:

Extract measured hexamine solution. Add N nitric acid until solution is slightly acid. Add a little acetone or nitrobenzene to coagulate the precipitate. Add N/50 AgNO_3 until there is no further precipitation of silver chloride. Then add ferric alum indicator and titrate the excess AgNO_3 against N/50 KCNS.

1 ml N/50 AgNO_3 = 0.99 mgs Phosgene

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SECRET

- Test # 8 - ~~This test was a repetition of Test # 4 using entrance # 2 and taking samples at Shelter Positions 1, 2, 2A, 3, 4, 5 and 6~~
- Test # 9 - Repetition of Test # 1 using entrance 3 and sampling at Shelter Positions 1, 2, 3, 3A, 4, 5 and 6.
- Test # 10 - Repetition of Test # 2 using entrance 3 and sampling at Shelter Positions 1, 2, 3, 3A, 4, 5 and 6.
- Test # 11 - Repetition of Test # 3 using entrance 3 and sampling at Shelter Positions 1, 2, 3, 3A, 4, 5 and 6.
- Test # 12 - Repetition of Test # 4 using entrance 3 and sampling at Shelter Positions 1, 2, 3, 3A, 4, 5 and 6.
- Test # 13 - Repetition of Test # 1 using entrance 4 and sampling at Shelter Positions 1, 2, 3, 4, 4A, 5 and 6.
- Test # 14 - Repetition of Test # 2 using entrance 4 and sampling at Shelter Positions 1, 2, 3, 4, 4A, 5 and 6.
- Test # 15 - Repetition of Test # 3 using entrance 4 and sampling at Shelter Positions 1, 2, 3, 4, 4A, 5 and 6.
- Test # 16 - Repetition of Test # 4 using entrance 4 and sampling at Shelter Positions 1, 2, 3, 4, 4A, 5 and 6.
- Test # 17 - This test consisted to taking a 10 minute sample at all positions while all outside curtains were raised sufficiently to admit one man and held open in this manner for 10 seconds of every minute samples were taken. The curtains were closed simultaneously at the end of each 10 second period.

During Phase 1, the weather station was located 20 feet south of the shelter.

In all phases of the test, duplicate samples were taken at all positions involved.

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APPENDIX B

RESULTS OF OPERATION WITH SHELTER
ON UPGRADE SLOPE

PHASE 1

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The legend below will serve as a guide in interpreting the results which follow in tabular form. Operations are reported by date with accompanying meteorological data immediately following. The legend to be used is as follows:

- Test # 1 - This test consisted of a 10 minute sample taken with all curtains closed, samples being taken at Shelter Positions 1, 1A, 2, 3, 4, 5 and 6 as shown on the preceding sampling diagram. The shelter was cleaned after this and all subsequent tests.
- Test # 2 - This test consisted of a 10 minute sample taken while five men, already inside the shelter, left the shelter through entrance # 1 at 0 + 1, 3, 5, 7 and 9 minutes of the sampling time. Samples were taken at Shelter Positions 1, 1A, 2, 3, 4, 5 and 6.
- Test # 3 - This test consisted of a 10 minute sample taken while five men entered the shelter through entrance # 1 at 0 + 1, 3, 5, 7 and 9 minutes of the sampling time. Samples were taken at Shelter Positions 1, 1A, 2, 3, 4, 5 and 6. The men remained inside the shelter until completion of sampling.
- Test # 4 - This test consisted of a 10 minute sample taken while two men carrying a litter with patient entered the shelter through entrance # 1 at 0 + 1, 3, 5, 7 and 9 minutes of the sampling time and left the shelter through entrance # 1 at 0 + 2, 4, 5, 8 and 10 minutes of the sampling time. Samples were taken at Shelter Position 1, 1A, 2, 3, 4, 5 and 6.
- Test # 5 - This test was a repetition of Test # 1 using entrance # 2 and taking samples at Shelter Positions 1, 2, 2A, 3, 4, 5 and 6.
- Test # 6 - This test was a repetition of Test # 2 using entrance # 2 and taking samples at Shelter Positions 1, 2, 2A, 3, 4, 5 and 6.
- Test # 7 - This test was a repetition of Test # 3 using entrance # 2 and taking samples at Shelter Positions 1, 2, 2A, 3, 4, 5 and 6.

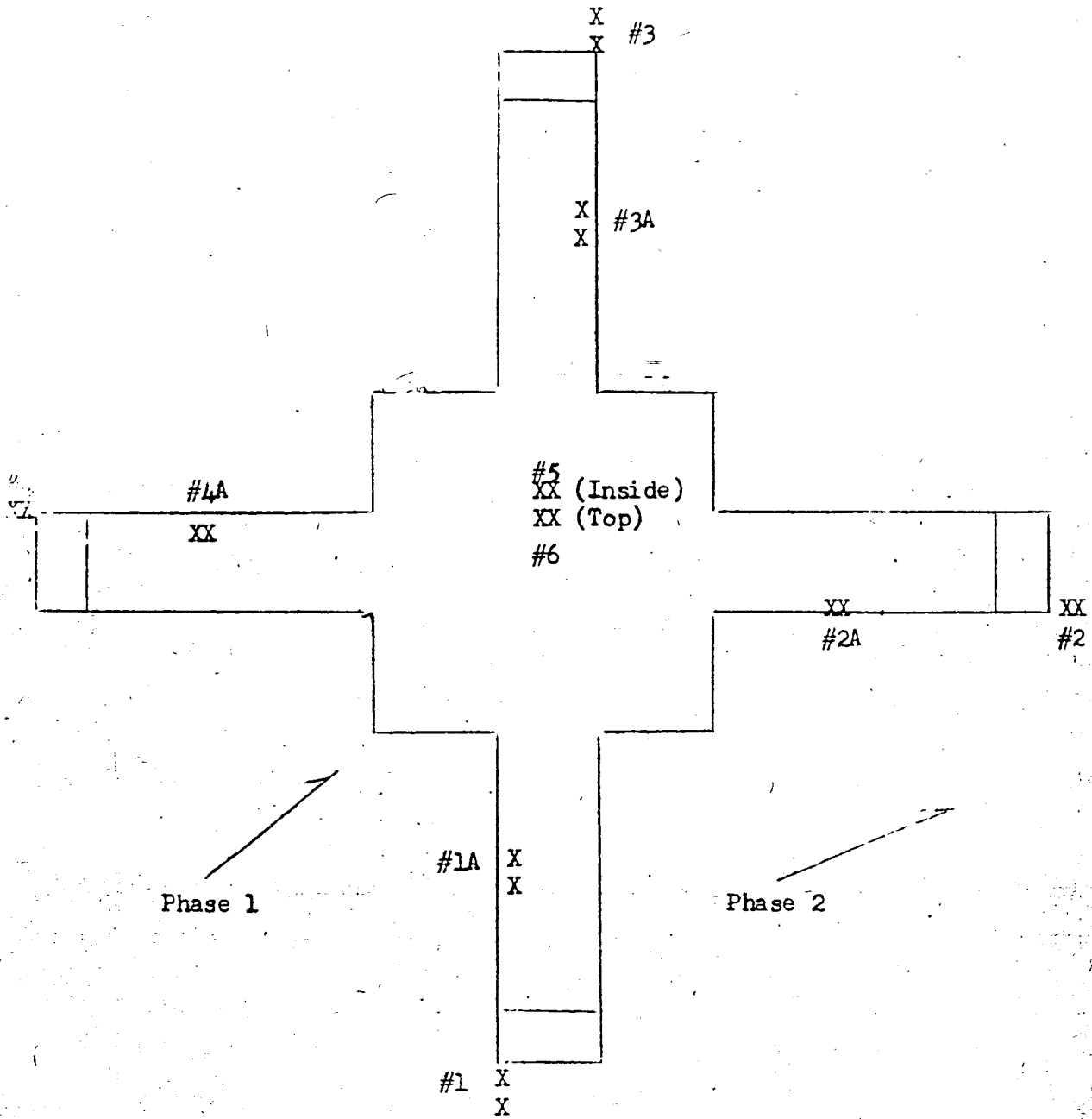
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(SJPR No. 102, App. B)

SJP Test No. 102

CHEMICAL SAMPLING DIAGRAM



X - Sampling positions

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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 132
SURVEILLANCE TEST FOR BOMB PARTICULATE,
4-LB., E-1

(SJPR NO. 132)

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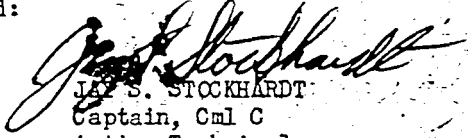
REPORT NUMBER 132

SURVEILLANCE TEST FOR BOMB, PARTICULATE, 4-LB., E-1

Submitted by:

Technical Staff
San Jose Project

Approved:


JAY S. STOCKHARDT
Captain, Cml C
Acting Technical
Director

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(SJFR No. 132)

SURVEILLANCE TEST FOR BOMB, PARTICULATE, 4-LB.. E-2

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(SJFR No. 132)

SURVEILLANCE TEST FOR BOMB, PARTICULATE, 4-LB., E-1

S U M M A R Y

- A. To determine if leaks occur in the test item under varied conditions of tropical and semi-tropical storage combined with rough usage, fifty (50) bombs were subjected to a variety of tropical and semi-tropical storage and rough usage conditions and observations made as to their condition during and following the above treatment. The actual test covered a six-month period.
- B. No leaks developed at any time throughout the test although the bombs stored outdoors rusted and rough usage caused dents and bending.

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SURVEILLANCE TEST FOR BOMB, PARTICULATE, 4-LB., E-1

1. AUTHORITY:

Test No. 132 of Program for San Jose Project dated 12 November 1947.

2. OBJECT:

To determine if leaks occur in the test item under varied conditions of tropical and semi-tropical storage combined with rough usage.

3. REFERENCES AND HISTORY:

No previous tests of this item have been made by this project. Tests were conducted as per Test Directive for San Jose Surveillance of Bomb, Particulate, 4-lb., E-1 (formerly designated the Mk 1, SPD), dated 6 October 1947, received from Chief, M Division, Camp Detrick, Maryland.

4. PROCEDURE:

a. Filling.

Fifty (50) bombs were submitted for surveillance as outlined herein. These bombs were received filled to the normal level with a simulated agent which is non-toxic to personnel. Fluorescein had been added to this simulated agent in sufficient amount to cause a small drop of the liquid fill to glow with a green color under ultra-violet light in a darkened room. The bombs were inert, containing no explosives, and required no special handling technique.

b. Marking.

Upon receipt of the bombs, the lot was divided into five (5) groups of ten (10) each. These groups were marked distinctively, and the bombs in a particular group were numbered 1 through 10.

c. Testing for Leaks.

Bombs were checked for leaks before storage was begun as indicated in Par. 5, and once each week thereafter for a

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4. PROCEDURE: (Cont.)

period of six months. To check for leakage, the bomb surfaces to be inspected were wetted with water, free of fluorescent material, and then examined under an ultra-violet light source. Care was exercised that the purple glow of the oil or the ivory-colored glow of the paint was not mistaken for a leak in the unit.

NOTE: The joints in the bomb which were checked carefully were:

- (1) Silver solder joint between the closure cup and the body tube.
- (2) Lead joint between the closure cup and expansion disc.
- (3) Silver solder joint between the fuse adapter and body tube.
- (4) Inside the burster assembly.

d. Weighing the Bombs.

- (1) Bombs were weighed after marking and individual weights recorded to the nearest gram.
- (2) Weights were checked once each month for the duration of the test.
- (3) Change of weight was recorded and is reported herein. Bombs retaining their full weight are not reported.

e. Rough Usage Tests.

Half of the bombs from each group (twenty-five (25) in all) were subjected to the hard usage tests outlined below. The second half remained in storage as controls.

Bombs of each group marked 1 through 5 were subjected to the following tests once each week:

- (1) Roll from a plane surface 5 feet high onto clean concrete (once each).

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4. PROCEDURE: (Cont.,

- (2) Drop nose end down at an angle of approximately 45° onto clean concrete from a 5 foot height (once each).
- (3) Drop tail end down vertically onto clean concrete from 5 foot height (once each).
- (4) No leakers occurred among hard-usage bombs; and the tests were then extended by rolling each bomb, once each, from a plane surface onto a rail laid on the concrete in such a manner that the bomb struck the rail approximately at bomb's center, perpendicular to the rail. This procedure was followed over a three-month period, 30 July through 22 October 1948.

f. Inspection for Leaks.

All fifty (50) bombs were inspected once each week, in accordance with Par. 4 c, after hard usage tests had been conducted on half (25) of the bombs. After inspection, bombs were returned to storage.

g. Photographs.

Still photographs were taken of the bombs in their respective storage locations in the early and late stages of the test. Photographs were also made demonstrating the procedure followed in the five foot drop test. Selected photographs are included in Appendix B.

5. SPECIAL CONDITIONS:

a. Test Storage.

- (1) Ten (10) each (1st Group) in a cold room having an average temperature of 40°-50° F. (Control Group).
- (2) Ten (10) each (2nd Group) outdoors in a clearing under no cover.
- (3) Ten (10) each (3rd Group) outdoors in a clearing but covered from rain and sun.

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5. SPECIAL CONDITIONS: (Cont.)

- (4) Ten (10) each (4th Group) outdoors in jungle and wooded area, exposed to all elements.
- (5) Ten (10) each (5th Group) outdoors in jungle and wooded area but protected from precipitation.

All bombs were stored on dunnage in a horizontal position in such a manner that the tail was raised $\frac{3}{4}$ inch higher than the nose in order to expose the closure to both the liquid and the air in the void space.

b. Period of Test.

Initial testing of bombs began on 9 February 1948 at Fort Sherman, Canal Zone, and tests were completed on 22 October 1948 at St. Thomas, Virgin Islands. Periods of actual test ran from 9 February 1948 through 15 March 1948 (Fort Sherman) and from 3 June 1948 through 22 October 1948 (St. Thomas) giving six months actual test time.

c. Meteorological Data.

For the period 9 February 1948 through 15 March 1948, while the test was being conducted at Fort Sherman, temperature, relative humidity, and precipitation measurements were made every four hours starting at 0600. Monthly averages below for temperature and relative humidity were determined by averaging six daily readings and then averaging the daily results to reach a monthly average.

(1) Temperature:

February, average	80.0°F
Maximum	80.9°F
Minimum	77.9°F
March, average	80.8°F
Maximum	86.5°F
Minimum	75.2°F

(2) Relative Humidity:

February, average	78.4%
March, average	81.9%

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5. SPECIAL CONDITIONS

(3) Precipitation

The months of February and March fall in the dry season in the Canal Zone. As a result, rainfall during these two months of the test was extremely light, in fact, negligible.

For the period of 3 June 1948 through 22 October 1948, inclusive dates of the test at St. Thomas, meteorological data were recorded every two hours. These data were recorded between the hours of 0700 and 1700 from 3 June through 20 July and between 0730 and 1730 hours thereafter.

(1) Temperature:

June, average	85.9°F
Maximum	95.4°F
Minimum	68.0°F
July, average	84.6°F
Maximum	91.0°F
Minimum	76.1°F
August, average	85.3°F
Maximum	100.4°F
Minimum	77.0°F
September, average	84.2°F
Maximum	91.0°F
Minimum	75.2°F
October, average	83.6°F
Maximum	91.9°F
Minimum	75.7°F

(2) Relative Humidity:

June, average	85.3%
July, average	85.8%
August, average	78.9%
September, average	81.9%
October, average	79.1%

(3) Precipitation:

	Inches (Total)
June	2.00
July	4.20
August	5.11
September	7.10
October	7.85

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6. RESULTS:

a. Leakage Data.

There were no leaks developed in any of the bombs at any time during or immediately following the test.

b. General Damage.

Rough usage tests damaged the bombs considerably. Bombs stored outdoors became rusted. The five-foot drop test had almost sealed the tail ends of bombs given that treatment and bombs dropped on the iron rail were dented and the bomb itself became bent. The nose ends were in fairly good condition upon completion of the test and the threaded portions could be reused.

c. Weight Record.

No bombs under surveillance underwent significant weight changes during the period of test.

7. DISCUSSION:

None.

8. CONCLUSIONS:

None.

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(SJFR No. 132)

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APPENDIX A

PLAN OF TEST

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(SJPPT NO. 132

~~HEADQUARTERS SAN JOSE PROJECT~~
Office of the Technical Director
APO 897 o/o PM
New Orleans, Louisiana

UNCLASSIFIED

18 December 1947

PLAN OF TEST NUMBER 132

SURVEILLANCE TEST FOR BOMB, PARTICULATE, 4-LB, EL

1. AUTHORITY:

Test No. 132 of program for San Jose Project dated 12 November 1947.

2. OBJECT:

To determine if leaks occur in the test item under varied conditions of tropical storage combined with rough usage.

3. REFERENCES, HISTORY AND SCOPE:

No previous tests of this item have been made at this project. Tests will be conducted as per Test Directive for San Jose Surveillance of Bomb, Particulate, 4-lb, EL (formerly designated the Mk 1, SPD), dated 6 October 1947, received from Chief, M Division, Camp Detrick, Maryland.

Fifty (50) bombs were submitted for surveillance as outlined in the plan of test. These bombs are filled to the normal level with a simulated agent which is non-toxic to personnel. The simulated agent has fluorescein added to it in a sufficient amount to cause a small drop of the liquid fill to glow with a green color under ultra-violet light in a darkened room. The bombs are inert, containing no explosives, and require no special handling technique. Leaks may occur in one or more of four locations outlined below in Par 5b. Care must be exercised that the purple glow of the oil or the ivory colored glow of paint is not mistaken for a glow in the unit. Bombs will be checked for leaks at the outset of the test and once each week thereafter for a period of six weeks.

4. EQUIPMENT FOR TEST:

a. Bombs, Particulate, 4-lb, EL - 50 each.

b.

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(SJPPT No. 132)

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- c. Darkened room.
- d. Water supply.
- e. Concrete apron ramp or floor. The concrete must be of.
- f. Scaffold or high work table.
- g. Scale or rule for measuring.
- h. Storage facilities.
- i. Stencilling or marking equipment.
- j. Scale or balance for weighing (2 kilo capacity).

5. SPECIAL CONDITIONS:

Bombs will be stored as follows:

- a. Ten (10) each (1st Group) in a cold room having an average temperature of 40°-50°F (Control Group).
- b. Ten (10) each (2nd Group) outdoors in a clearing under no cover.
- c. Ten (10) each (3rd Group) outdoors in a clearing but covered from rain and sun.
- d. Ten (10) each (4th Group) outdoors in the jungle, exposed to all elements.
- e. Ten (10) each (5th Group) outdoors in the jungle but protected from precipitation.

All bombs will be stored on dunnage in a horizontal position in such a manner that the tail will be raised 3/4 inch higher than nose in order to expose the closure to both the liquid and the air in the void space.

6. PROCEDURE:

a. Marking

Upon receipt of the bombs, the lot will be divided into five (5) groups of ten (10) each. These groups will be marked distinctively. Each particular group will be numbered 1 through 5. All bombs will be stored and handled in accordance with the above.

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b. Testing for Leaks

Bombs will be checked for leaks before storage, as indicated in Par 5, is begun. To check for leakage, the bomb surfaces to be inspected will be wetted with water, free of fluorescent material, and then examined under an ultra violet ray source.

NOTE: The joints in the bomb which will be checked carefully are:

- (1) Silver solder joint between the closure cup and the body tube (A - sketch).
- (2) Lead cup between the closure joint and expansion disc B - sketch).
- (3) Silver solder joint between the fuse adapter and the body tube (C - sketch)
- (4) Inside the burster assembly (D - sketch).

c. Weighing the Bombs

- (1) Bombs will be weighed after marking and individual weights recorded to the nearest gram.
- (2) Weights will be checked once each month for the duration of the test.
- (3) Change of weight will be recorded and reported. Bombs which retain their full weight need not be reported.

d. Rough Usage Tests

Half of the bombs from each group (a total of twenty-five (25) in all) will be subjected to the hard usage tests outlined below. The second half of the bombs will remain in storage as controls.

Bombs of each group marked 1 through 5 inclusive, will be subjected to the following tests once each week:

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- (1) Roll from a plane surface 5 feet high, onto concrete (one each).
- (2) Drop nose end down at an angle of approximately onto clean concrete from a 5 foot height. (once)
- (3) Drop tail end down vertically onto clean concrete from a 5 foot height. (once each)
- (4) If after three (3) months duration there are no leakers among the bombs subjected to hard usage, the hard usage tests will be extended as follows:
 - (a) Roll each bomb, once each, from a plain surface, onto a rail laid on the concrete in such a manner that the bomb strikes the rail approximately in the middle of the bomb and perpendicular to the rail.

e. Inspection for Leaks

All bombs, fifty (50) each, will be inspected once each week in accordance with Par 62 after hard usage tests have been conducted on twenty-five (25) each bombs. After inspection, bombs will be placed in storage.

7. DURATION OF THE TEST:

The test will continue without interruption for a period of six (6) months unless otherwise directed by M Director, Research and Development Dept., Chemical Corps, Camp Detrick, Frederick Maryland.

8. REPORTS:

Progress made on the test will be reported on the regular monthly Progress Report for San Jose Project.

The final Special Report of the test will include all pertinent data, average temperatures, precipitation and relative humidity in addition to the information regarding leaks occurring in the bombs. This information will include:

- a. Type of storage.
- b. Type of rough usage.
- c. Date when leaks occurred.
- d. Conditions attendant with occurrence of leaks.
- e. Section of bomb where leak occurred.

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(2) Will furnish graphs and charts as required for final

g. Meteorological Section

(1) Will furnish the following data for monthly progress reports for this test and for the final report:

- (a) Average temperature
- (b) Precipitation
- (c) Relative humidity

h. Transportation Officer

No function

i. Rations Officer

No function

j. Surgeon

No function

k. Communications Officer

No function

l. Guard Section

No function

/s/ Alois L. Steinbach
ALOIS L. STEINBACH
1st Lt. Cml
Test Officer

Approval recommended.

/s/ Norman D. Gillet
NORMAN D. GILLET
Colonel Cml C
Technical Director

APPROVED:

/s/ Norman D. Gillet
NORMAN D. GILLET
Colonel Cml C
Technical Director

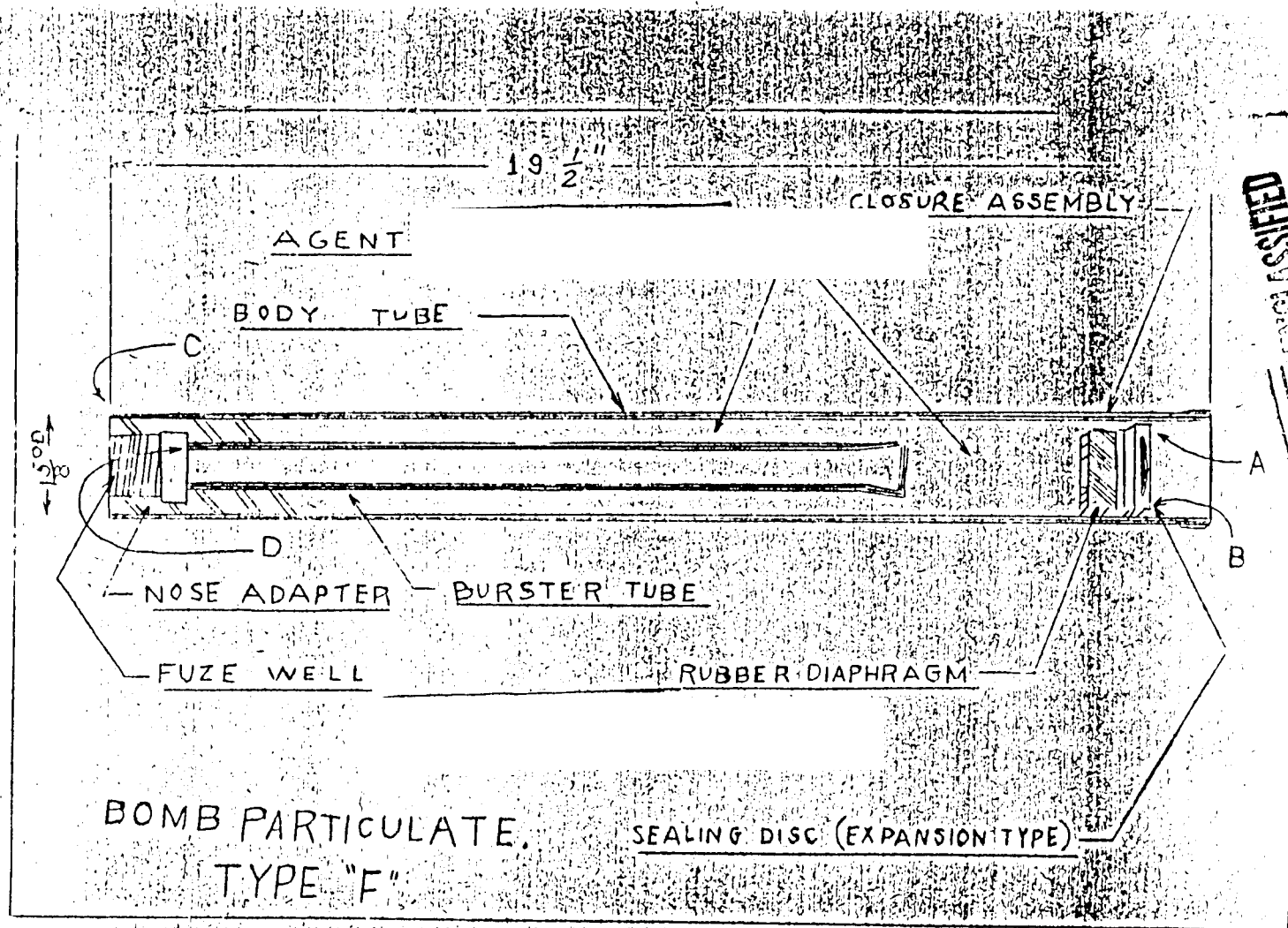
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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 136
STATIC TEST OF M70 BOMB, HD FILLED

HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

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APR 1 - 1949

REPORT NUMBER 136

STATIC TEST OF M70 BOMB, HD FILLED

BY

Technical Staff, San Jose Project

Regraded **CONFIDENTIAL**

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9 Dec 1954

by L. A. Oralkan J 2/2 +
Member Classified Documents Review Committee,
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STATIC TEST OF M70 BCMB, HD FILLED

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~~STATIC TEST OF M70 BOMB, HD FILLED~~

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S U M M A R Y

This test was performed in eight phases during the period 23 November 1948 through 23 February 1949.

In each phase an M70 Bomb, Filled HD and dyed with Dupont oil red or yellow was fired statically in a vertical position. Four representative areas on Water Island were used to provide the desired conditions of an open area with onshore wind, an open area with off-shore wind, wooded area with onshore wind and wooded area with off-shore wind.

The purpose of the test was to establish meteorological and terrain factors at this site in order that results obtained may be used as a basis of comparison between tests run at this and other sites.

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REPORT NUMBER 136

STATIC TEST OF M70 BOMB, HD FILLED

1. AUTHORITY:

Test No. 136 of the approved program for San Jose Project dated 23 July 1948.

2. OBJECT:

To check representativeness of meteorological and terrain conditions and to provide common basis for comparison of tests run at St. Thomas with those run at other proving grounds.

3. REFERENCES AND HISTORY:

No previous test of HD filled M70 bombs has been run at St. Thomas.

4. SPECIAL CONDITIONS:

a. The test was run in eight phases under the following conditions:

- (1) Phases 1 and 2, open area with off-shore wind.
- (2) Phases 3 and 4, wooded area with off-shore wind.
- (3) Phases 5 and 6, wooded area with onshore wind.
- (4) Phases 7 and 8, open area with onshore wind.

5. PROCEDURE:

a. Phases 1 and 2.

In Phase 1 a single M70 bomb, HD filled, dyed 0.50% Dupont oil yellow was emplaced vertically, tail down and fired statically in an open area with an off-shore wind on Water Island. The area used was Area #4 on Plan of Test sketch. Phase 2 was a duplicate except that the bomb was fired nose down.

b. Phases 3 and 4.

In Phases 3 and 4, a single M70 bomb, HD filled, dyed 0.50% Dupont oil yellow was emplaced vertically nose down and fired statically in a wooded area with an off-shore wind on Water Island. The area used was Area #5 on Plan of Test sketch.

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5. PROCEDURE: (Cont'd)

c. Phases 5 and 6.

In Phases 5 and 6, a single M70 bomb, HD filled, dyed 0.25% Dupont oil red, was emplaced vertically, nose down, seven inches below ground level and fired statically in a wooded area with an onshore wind on Water Island. The area used was Area #8 on Plan of Test sketch.

d. Phases 7 and 8.

In phases 7 and 8, a single M70 bomb, HD filled, dyed 0.25% Dupont oil red, was emplaced vertically, nose down, six inches below ground level and fired statically in an open area with an onshore wind on Water Island. The area used was Area #6 on Plan of Test sketch.

e. Four hour observed vapor dosages were obtained by running a bubbler unit for the period 0-240 minutes following the burst.

f. All test areas were laid out on a ten-yard grid with the bubblers for vapor assessment and tambourines for liquid dosage evaluation placed in a definite pattern about the location of the bomb burst as shown on test area layout charts for various phases.

g. Laboratory analysis procedures are contained in Appendix 1 to the Plan of Test.

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6. RESULTS: (Phase 2)

a. Vapor assessment by I&N total dosage pumps:

- (1) The average areas in artillery squares covered by a vapor dosage of HD exceeding 2000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
Zero	.027	.045	.050

- (2) The average areas in artillery squares covered by a vapor dosage of HD exceeding 1000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.045	.109	.118	.123

- (3) The average areas in artillery squares covered by a vapor dosage of HD exceeding 500 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.111	.170	.170	.170

- (4) The average areas in artillery squares covered by a vapor dosage of HD exceeding 200 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.227	.227	.227	.227

- (5) The above results are shown graphically in Charts 2-5, Appendix D.

b. Ground contamination:

- (1) Ground contamination was determined from tambourines distributed as shown in Chart 1, Appendix D. The average areas in artillery squares covered by a liquid dosage of HD exceeding 5 and 15 gm/sq m were:

Dosage	<u>5 gm/sq m</u>	<u>15 gm/sq m</u>
Area	.070	.028

- (2) These results are shown graphically in Chart 6, Appendix D.

c. The DB-3 vapor cup test gave the following results:

<u>Time</u>	<u>Time</u>
1 hr after burst—— positive	4 hrs after burst—— positive
2 hrs after burst—— positive	24 hrs after burst—— negative.

- d. Original field data are on file at the San Jose Project. Original laboratory data are contained in Lab. Notebook 2 and are included herein as Appendix E.

- e. Meteorological data are included as Table 1, Appendix D.

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6. RESULTS: (Phase 3, .

a. Vapor assessment by L&N total dosage pumps:

- (1) The average areas in artillery squares covered by a vapor dosage of HD exceeding 5000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
<u>Zero</u>	<u>.079</u>	<u>.015</u>	<u>.022</u>

- (2) The average areas in artillery squares covered by a vapor dosage of HD exceeding 3000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
<u>Zero</u>	<u>.034</u>	<u>.036</u>	<u>.045</u>

- (3) The average areas in artillery squares covered by a vapor dosage of HD exceeding 2000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
<u>.011</u>	<u>.057</u>	<u>.060</u>	<u>.063</u>

- (4) The average areas in artillery squares covered by a vapor dosage of HD exceeding 1000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
<u>.056</u>	<u>.091</u>	<u>.102</u>	<u>.120</u>

- (5) The average areas in artillery squares covered by a vapor dosage of HD exceeding 500 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
<u>.110</u>	<u>.175 ±</u>	<u>.200 ±</u>	<u>.200 ±</u>

- (6) The average areas in artillery squares covered by a vapor dosage of HD exceeding 200 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
<u>.268</u>	<u>.304 ±</u>	<u>.313 ±</u>	<u>.330 ±</u>

- (7) The above results are shown graphically in Charts 2-5, Appendix F.

b. Ground contamination:

- (1) Ground contamination was determined from tambourines distributed as shown in Chart 1, Appendix F. The average areas in artillery squares covered by a liquid dosage of HD exceeding 5 and 15 gm/sq m were:

<u>Dosage</u>	<u>5 gm/sq m</u>	<u>15 gm/sq m</u>
<u>Area</u>	<u>.0075</u>	<u>Zero</u>

- (2) These results are shown graphically in Chart 6, Appendix F.

c. The DB-3 vapor cup test gave the following results:

<u>Time</u>	<u>Time</u>
<u>1 hr after burst-positive</u>	<u>24 hrs after burst-positive</u>
<u>2 hrs after burst-positive</u>	<u>96 hrs after burst-negative</u>
<u>4 hrs after burst-positive</u>	

- d. Original field data are on file at San Jose Project. Original laboratory data are contained in Lab. Notebook 2 and Appendix G.

e. Meteorological data are included as Ta

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6. RESULTS: (Phase 4)

a. Vapor assessment by L&N total dosage pumps:

- (1) The average area in artillery squares covered by a vapor dosage of HD exceeding 3000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
Zero	Zero	.030	.031

- (2) The average area in artillery squares covered by a vapor dosage of HD exceeding 2000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
Zero	.031	.052	.057

- (3) The average area in artillery squares covered by a vapor dosage of HD exceeding 1000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.057	.070	.091	.102

- (4) The average area in artillery squares covered by a vapor dosage of HD exceeding 500 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.106	.125	.166 ±	.168 ±

- (5) The average area in artillery squares covered by a vapor dosage of HD exceeding 200 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.207	.275 ±	.300 ±	.300 ±

- (6) These results are shown graphically in Charts 2-5, Appendix H.

b. Ground contamination:

- (1) Ground contamination was determined from tambourines distributed as shown in Chart 1, Appendix H. The average areas in artillery squares covered by a liquid dosage of HD exceeding 5 and 15 grams per square meter were:

Dosage	<u>5 gm./sq.m.</u>	<u>15 gm./sq.m.</u>
Area	.021	Zero

- (2) These results are shown graphically in Chart 6, Appendix H.

c. The DB-3 vapor cup test gave the following results:

<u>Time</u>	<u>Time</u>
1 hour after burst -Positive	4 hours after burst -Positive
2 hours after burst-Positive	24 hours after burst-Negative

- d. Original field data are on file at the San Jose Project. Original laboratory data are contained in Lab. Notebook #2 and are included in this report as Appendix I.

- e. Meteorological data are included as Table 1, Appendix H.

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6. RESULTS: (Phase 5)

a. Vapor assessment by L&N total dosage pumps:

- (1) The average areas in artillery squares covered by a vapor dosage of HD exceeding 5000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
Zero	Zero	.032	.040

- (2) The average areas in artillery squares covered by a vapor dosage of HD exceeding 3000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
Zero	.040	.064	.076

- (3) The average areas in artillery squares covered by a vapor dosage of HD exceeding 2000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.020	.072	.092	.100

- (4) The average areas in artillery squares covered by a vapor dosage of HD exceeding 1000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.088	.120	.144	.145

- (5) The average areas in artillery squares covered by a vapor dosage of HD exceeding 500 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.140	.184	.240	.272

- (6) The average areas in artillery squares covered by a vapor dosage of HD exceeding 200 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.232	.308	.496	.640

- (7) The above results are shown graphically in Charts 2-5, Appendix J.

b. Ground contamination:

- (1) Ground contamination was determined from tambourines distributed as shown in Chart 1, Appendix J. The average areas in artillery squares covered by a liquid dosage of HD exceeding 5 and 15 g/m² were:

Dosage	5 gm/sq m	15 gm/sq m
Area	.036	.016

- (2) These results are shown graphically in Chart 6, Appendix J.

c. The DB-3 vapor cup test gave the following results:

<u>Time</u>	<u>Time</u>
1 hr after burst-positive	24 hrs after burst-positive
2 hrs after burst-positive	96 hrs after burst-positive
4 hrs after burst-positive	168 hrs after burst-negative

- d. Original field data are on file
data are contained in Lab Notes
Appendix K

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- e. Meteorological data are included as Table 1, Appendix J.

6. RESULTS: (Phase 6)

a. Vapor assessment by L&N total dosage pumps:

- (1) The average areas in artillery squares covered by a vapor dosage of HD exceeding 5000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
Zero	Zero	Zero	.028

- (2) The average areas in artillery squares covered by a vapor dosage of HD exceeding 3000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
Zero	Zero	.032	.040

- (3) The average areas in artillery squares covered by a vapor dosage of HD exceeding 2000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.032	.048	.052	.064

- (4) The average areas in artillery squares covered by a vapor dosage of HD exceeding 1000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.064	.088	.090	.092

- (5) The average areas in artillery squares covered by a vapor dosage of HD exceeding 500 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.096	.132	.140	.160

- (6) The average areas in artillery squares covered by a vapor dosage of HD exceeding 200 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.170	.220	.268	.308

- (7) These results are shown graphically in Charts 2-5, Appendix L.

b. Ground contamination:

- (1) Ground contamination was determined from tambourines distributed as shown in Chart 1, Appendix L. The average areas in artillery squares covered by a liquid dosage of HD exceeding 5 and 15 gm/sq m were:

Dosage	<u>5 gm/sq m</u>	<u>15 gm/sq m</u>
Area	.046	.016

- (2) These results are shown graphically in Chart 6, Appendix L.

c. The DB-3 vapor cup test gave the following results:

<u>Time</u>	<u>Time</u>
1 hr after burst-positive	96 hrs after burst-positive
2 hrs after burst-positive	120 hrs after burst-positive
48 hrs after burst-positive	144 hrs after burst-negative

d. Original field data are on file at f
data are contained in Lab Notebook

nal lab

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e. Meteorological data are included as Table 1, Appendix L.

6. RESULTS: (Phase 7)

a. Vapor assessment by L&N ~~total dosage pumps:~~

- (1) The average area in artillery squares covered by a vapor dosage of HD exceeding 2000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
Zero	.016	.020	.024

- (2) The average area in artillery squares covered by a vapor dosage of HD exceeding 1000 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.032	.044	.052	.052

- (3) The average area in artillery squares covered by a vapor dosage of HD exceeding 500 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.060	.072	.084	.088

- (4) The average area in artillery squares covered by a vapor dosage of HD exceeding 200 milligram minutes per cubic meter were:

<u>0-15 min.</u>	<u>0-60 min.</u>	<u>0-120 min.</u>	<u>0-240 min.</u>
.100	.128	.136	.138

- (5) The above results are shown graphically in Charts 2-5, Appendix K.

b. Ground contamination:

- (1) Ground contamination was determined from tambourines distributed as shown on Chart 1, Appendix N. The average areas in artillery squares covered by a liquid dosage of HD exceeding 5 and 15 gm/sq m were:

Dosage Area	<u>5 gm/sq m</u>	<u>15 gm/sq m</u>
	.053	.022

- (2) These results are shown graphically in Chart 6, Appendix N.

c. The DB-3 vapor cup test gave the following results:

<u>Time</u>	<u>Time</u>
1 hr after burst-positive	24 hrs after burst-positive
2 hrs after burst-positive	48 hrs after burst-negative
4 hrs after burst-positive	

- d. Original field data are on file at San Jose Project. Original lab data are contained in Lab Notebook 2 and are included herein as Appendix O.

- e. Meteorological data are included as Table 1, Appendix

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6. RESULTS: (Phase 8)

a. Vapor assessment by L&N total dosage pumps:

- (1) The average areas in artillery squares covered by a vapor dose of HD exceeding 2000 milligram minutes per cubic meter were:
- | <u>0-15 min.</u> | <u>0-60 min.</u> | <u>0-120 min.</u> | <u>0-240 min.</u> |
|------------------|------------------|-------------------|-------------------|
| Zero | Zero | Zero | .012 |
- (2) The average areas in artillery squares covered by a vapor dose of HD exceeding 1000 milligram minutes per cubic meter were:
- | <u>0-15 min.</u> | <u>0-60 min.</u> | <u>0-120 min.</u> | <u>0-240 min.</u> |
|------------------|------------------|-------------------|-------------------|
| .016 | .036 | .042 | .048 |
- (3) The average areas in artillery squares covered by a vapor dosage of HD exceeding 500 milligram minutes per cubic meter were:
- | <u>0-15 min.</u> | <u>0-60 min.</u> | <u>0-120 min.</u> | <u>0-240 min.</u> |
|------------------|------------------|-------------------|-------------------|
| .040 | .072 | .080 | .084 |
- (4) The average areas in artillery squares covered by a vapor dosage of HD exceeding 200 milligram minutes per cubic meter were:
- | <u>0-15 min.</u> | <u>0-60 min.</u> | <u>0-120 min.</u> | <u>0-240 min.</u> |
|------------------|------------------|-------------------|-------------------|
| .096 | .155 | .176 | .192 |
- (5) The above results are shown graphically in charts 2-5 of Appendix P.

b. Ground contamination:

- (1) Ground contamination was determined from tambourings distributed as shown in Chart 1, Appendix P. The average areas in artillery squares covered by a liquid dosage of HD exceeding 5 and 15 grams per square meter were:

Dosage	<u>5 gm./sq.m.</u>	<u>15 gm./sq.m.</u>
Average Area	.056	.024

- (2) These results are shown graphically in Chart 6 of Appendix P.

c. The DB-3 vapor cup test gave the following results:

<u>Time</u>		<u>Time</u>	
0-1 hour---	positive	0-24 hours---	positive
0-2 hours---	positive	0-72 hours---	positive
0-4 hours---	positive	0-96 hours---	negative

- d. Original field data are on file at the San Jose Project. Original laboratory data are contained in Lab. Notebook #2 and are included in this report as Appendix Q.

- e. Meteorological data are included as Table 1, Appendix P.

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7. CONCLUSIONS:

None

8. RECOMMENDATIONS:

None

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APPENDIX A
PLAN OF TEST

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HEADQUARTERS SAN JOSE PROJECT
Office of the Technical Director
St Thomas, Virgin Island

30 August 1948

PLAN OF TEST NUMBER 136

Static Test of M70 Bomb , H Filled

1. AUTHORITY:

Test No. 136 of the approved program for San Jose dated 23 July 1948.

2. OBJECT:

To check representativeness of meteorological and terrain conditions and to provide common basis for comparison of test run at St Thomas with those run at other proving grounds.

3. References and History:

No test of H filled M70 bombs have been run at St Thomas.

4. SPECIAL CONDITIONS:

- a. There should be no precipitation at time of test.
- b. The wind speed should be 7 miles or less at time of test.
- c. The test will be run in four phases requiring the following conditions:
 - (1) Phase 1, open area with off shore wind.
 - (2) Phase 2, open area with on shore wind.
 - (3) Phase 3, area covered with vegetation with off shore wind.
 - (4) Phase 4, area covered with vegetation with on shore wind.

5. PROCEDURE:

a. Phase I.

(1) A single M70 bomb H filled (used 0.25% DuPont Oil Red) will be emplaced vertically, nose down and fired statically in an open area with off shore wind laid out on water Island. This is Area #4 on attached sketch map.

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- a. Vapor assessment will be made by L & N total dosage pumps.
- b. Contamination density and area of ground contamination will be determined by use of tambourines.
- c. Persistency will be determined by the use of DB-3 vapor cups.
- d. Sampling times for the L&N total dosage pumps will be 0-15 minutes, 15-60 minutes, 60-120 minutes, 120-240 minutes, at a height of 18 inches and collected in 10 cc of Skat at a flow rate of one liter per minute. DB-3 cup tests will be run on visibly contaminated areas 0-60 minutes, 60-120 minutes, and 120-240 minutes or until negative results are obtained. If positive results are obtained at 120-240 minutes, further tests will be run at 24 hours and every 24 hours thereafter until negative results are obtained.

(2) For layout of chemical sampling set up, see Chart I.

(3) Duplicate test as in 5a (1) and 5 a (2) above will be run in the same field at a later date.

b. Phase II.

(1) A single M70 bomb H filled (dyed 0.25% DuPont Oil Red) will be emplaced vertically, nose down and fired statically in another open area with on shore wind on water Island. This is Area #7 on attached sketch map.

(2) Same procedure will be followed as described in 5 a (1), 5 a (2) and 5 a (3).

c. Phase III.

(1) A single M70 bomb, H filled, (dyed 0.25% DuPont Oil Red) will be emplaced vertically nose down and fired statically in an area covered with vegetation and with off shore wind on water Island. This is Area #1 on attached sketch map.

(2) Same procedure will be followed as described in 5 a (1) 5 a (2), and 5 a (3).

d. Phase IV.

(1) A single M70 bomb, H filled, (dyed 0.25% DuPont Oil Red)

will be emplaced vertically nose down and fired statically in an area covered with vegetation, and with an on shore wind, on Water Island. This is Area #7 on attached sketch map.

6. LOCATION:

Water Island, see attached sketch map for area locations.

7. TIME:

Phase I will be run 23 Nov 48 with bomb burst as near 0900 Q as possible. Repeats and other phases to follow at one week intervals.

8. SERVICES AND EQUIPMENT:

a. Safety Section.

- (1) Will enforce safety regulations.
- (2) Will provide protective clothing and equipment as requested.

b. Range Section.

- (1) Will lay out test area.

c. Chemical Test Section.

(1) Laboratory Group.

- (a) Will analyze all samples, procedures given in Appendix A
- (b) Will furnish appropriate number of following:

Tambourines: 48

Bubblers: 180 plus 20 spares.

(2) Field Sampling Group:

- (a) Will provide personnel for sampling equipment.
- (b) Will furnish appropriate number of following:

L & N total dosage pumps: 45 one of which is mobile
plus 5 spares

DB-3 Cups: 4

Rotary Samplers: 16

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b. Munitions and Weapons Section:

Will furnish, emplace and fire munitions for the test.

e. Photographic and Graphic Arts:

Will take still photographs of set up set just prior to firing of munition and motion pictures at time of firing.

f. Meteorological Section:

Will furnish complete meteorological data at test area during period of test.

g. Transportation:

Will furnish necessary land and water transportation.

h. Rations Officer:

Will furnish meals as needed in the field.

i. Surgeons:

Will furnish an aid man 30 minutes prior to test time and until such time as released by test Officer.

j. Communications Officers:

Will provide communications as follows:

(1) Between control point and guards.

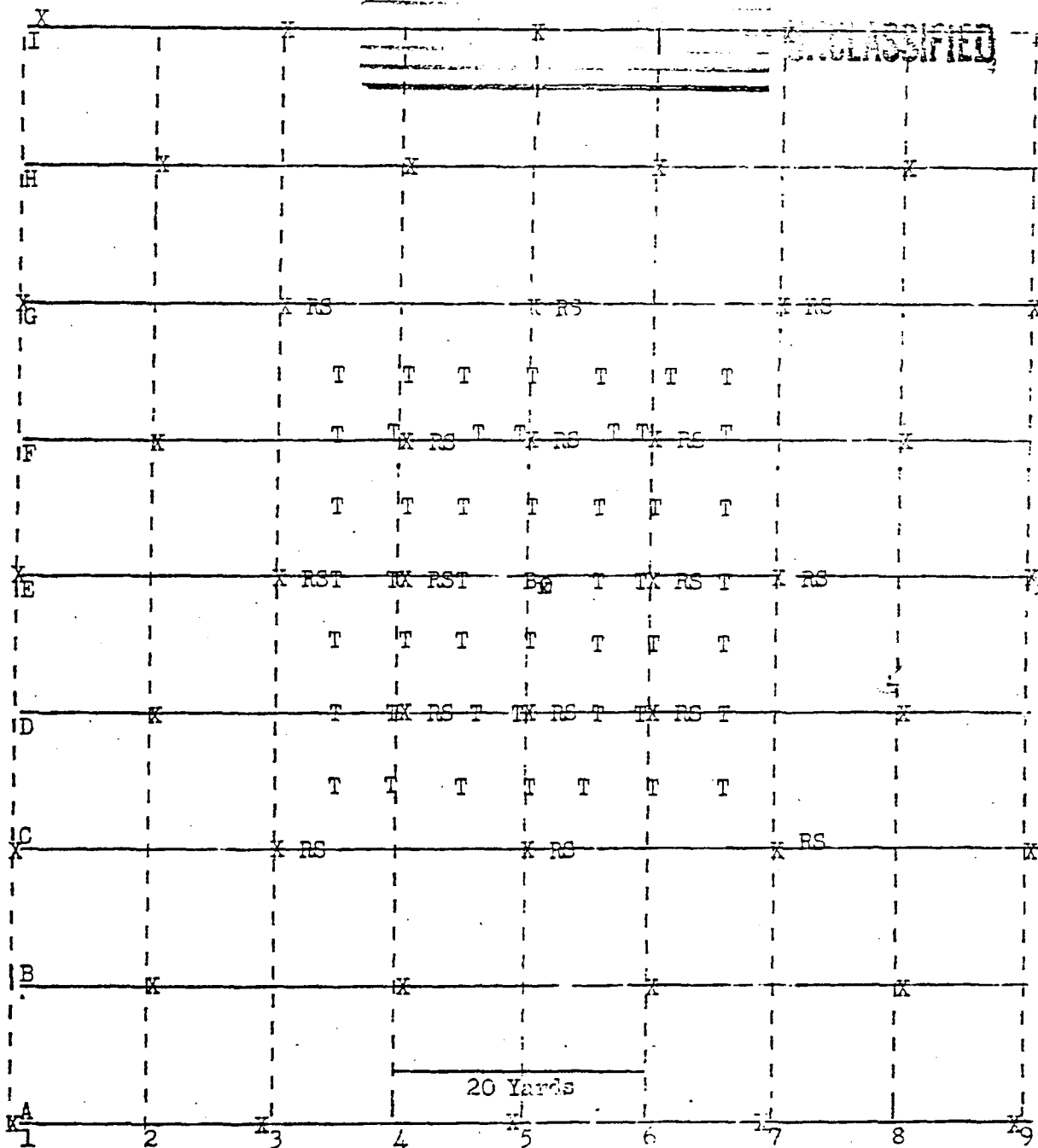
(2) Between control point and test area.

k. Coast-Guard:

Will close off the channel between Water Island and San Jose Project (West Gregorie Channel)

l. Test Officer:

Will be Captain Copeland. He will be responsible for conduct of test and subsequent work including preparation of report.



- X - L&N Total Dosage Pumps
- T - Tambourines
- RS - Rotary Sampler
- M - Mobile L&N Total Dosage Pump
- B - Bomb

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APPENDIX 1

Laboratory Method of Testing For H₂S

Ground Concentration

Principle:

The distribution of liquid H contamination is measured on dyed chargings of H (0.25% by weight of Rhodamine B in H) using sample of the charging as a standard.

Method:

Weight out accurately several quantities of bomb charge sample between 0.2 and 2.0 grams. These are spread on 8 inch diameter Tambourines and allowed to stand for approximately (1) hour. The filter paper is then torn from the tambourines and placed into wide mouth 500 cc Erlenmeyer flasks. The dye is then extracted from the filter paper by addition of 100 ml Industrial alcohol to each sample. Allow the samples to stand for approximately one hour with occasional agitation or until the dye appears to have dissolved off the filter paper. Color intensity of the dyed alcohol is then determined on a Klett Summerson colorimeter using a No. 54 light filter. The millimicron readings are then plotted against grams H per sample, thus setting up a standard curve.

Unknown samples from field tests are analyzed by the above method starting with the extraction of dye and values of grams H per unknown sample are read off directly from curve, or may be determined from factor derived from standard curve.

Factor	Concentration of Standard
	Millimicron reading of standard

Concentration of unknown = millimicron reading of unknown times factor.

Calculations:
Diameter of filter paper (Tambourine) - 8 inches or 20.32 cm.
Area of filter paper - $\pi r^2 = 324.21$ sq. cm.
Number of Tambourines per meter - 30.84

Note: Standard curve should not be prepared until day of shoot and unknown should be determined immediately thereafter because of fading of dye. Standard mustard sample containing dye should be kept under conditions similar to mustard in bomb. i.e., Place nails in sample and keep in dark place until preparing samples for staining.

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VAPOR CONCENTRATION

DB-3 Method for H Determination in bubblers:

To prepare a standard curve, weigh out accurately, a small amount of pure H, 0.1 to 0.3 grains. Dissolve the mustard in skat and dilute to 100 ml in a volumetric flask. Prepare 10 volumetric flasks and number from one to ten. The following dilutions of the first solutions are then made:

1. 1 cc to 200 cc of Skat	6. 5 cc to 100 cc of Skat
2. 1 cc to 100 cc of Skat	7. 2 cc to 25 cc of Skat
3. 1 cc to 50 cc of Skat	8. 3 cc to 25 cc of Skat
4. 3 cc to 100 cc of Skat	9. 4 cc to 25 cc of Skat
5. 2 cc to 50 cc of Skat	10. 5 cc to 25 cc of Skat

Colorimeter readings are then taken with the ten solutions as in steps 1 to 5 below. The standard curve is prepared to micrograms of H per liter of Skat.

1. Pipette 1 ml of bubbler solution into a clean dry test tube.
2. Add 8 ml DB-3 solution (6.3 g. recrystallized DB-3, per liter of 50% aqueous ethyl alcohol) to test tube and mix thoroughly
3. Heat in water bath for 2 minutes at 80°C.
4. Cool in tap water (room temperature) for 2 minutes.
5. Add 2 drops saturated K_2CO_3 solution, mix thoroughly, and take colorimeter reading immediately as color of reaction fades.

Note: Bubbler or absorption solution used in pure Skat, an insect repellent sold by Skat Company, Inc., New York, N. Y. To prepare bubblers for field test, measure 10 cc Skat by Burette into test tube and close with stopper containing bubbler tubes. When the unknown from the field is tested, take the colorimetric reading by the standard procedure, and from the standard curve read the concentration of H per liter of Skat. This figure divided by 100 gives the weight of H in the bubbler.

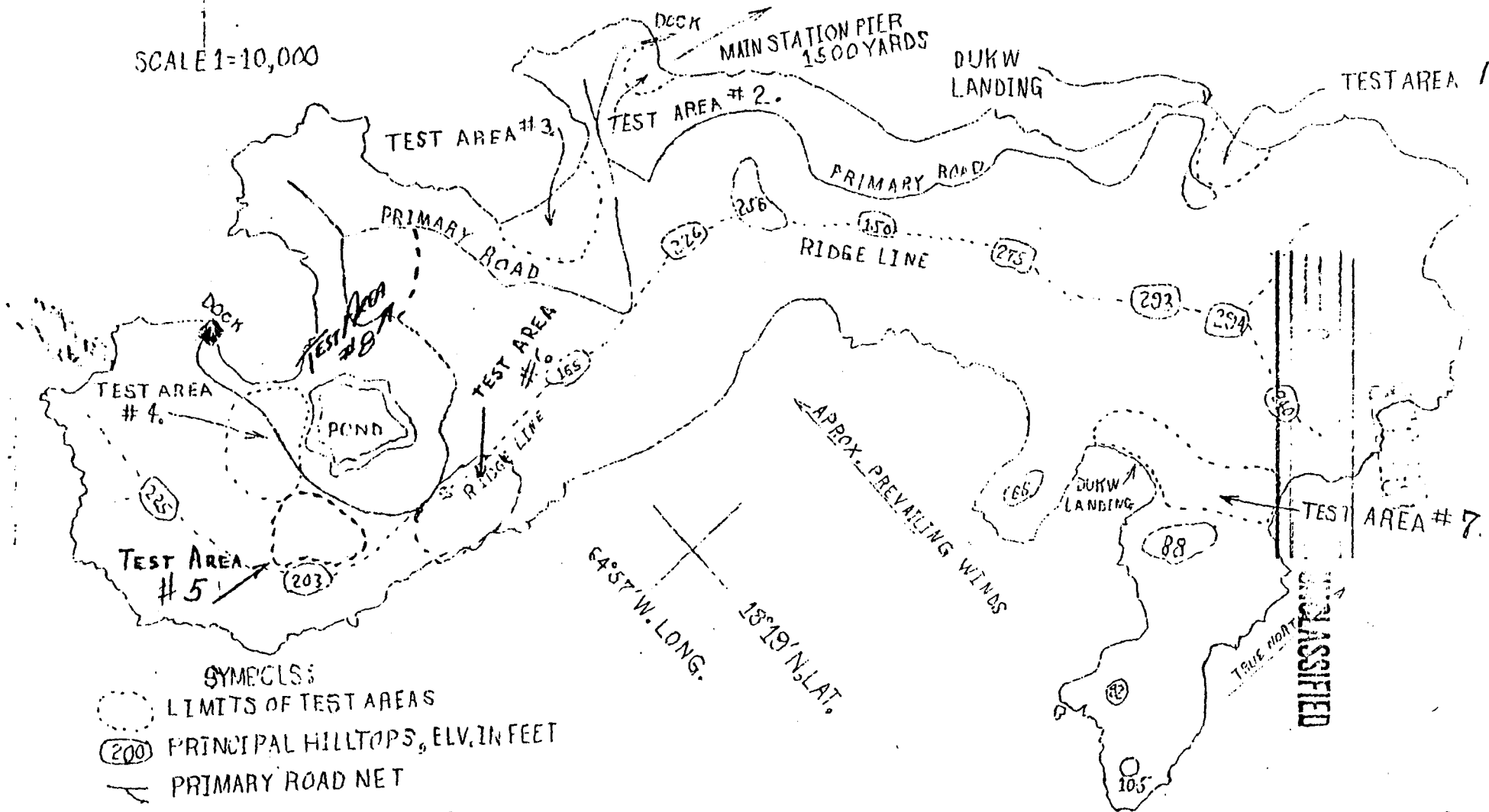
Recrystallization of DB-3:

Dissolve DB-3 from stock room in C_2H_5OH (95%). Warm slightly (45°C) to dissolve the yellow granular material. Allow the solution to cool and evaporate for two days. Remove the large yellow crystals and dry, do not wash. Melting point of crystals should be 69° - 69.5°C. The mother liquid if allowed to evaporate, further forms a second crystal having melting point of 67-67.5°C. This mother liquid can be saved and used to dissolve and recrystallize impure DB-3. Freshly prepared DB-3 should be kept in dated bottles or containers. DB-3 over three months old will be recrystallized before being used.

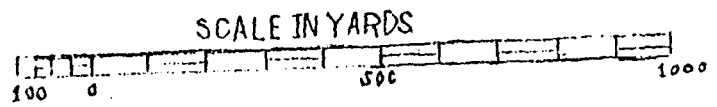
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SCALE 1=10,000



- SYMBOLS:
- LIMITS OF TEST AREAS
 - (200) PRINCIPAL HILLTOPS, ELV. IN FEET
 - PRIMARY ROAD NET



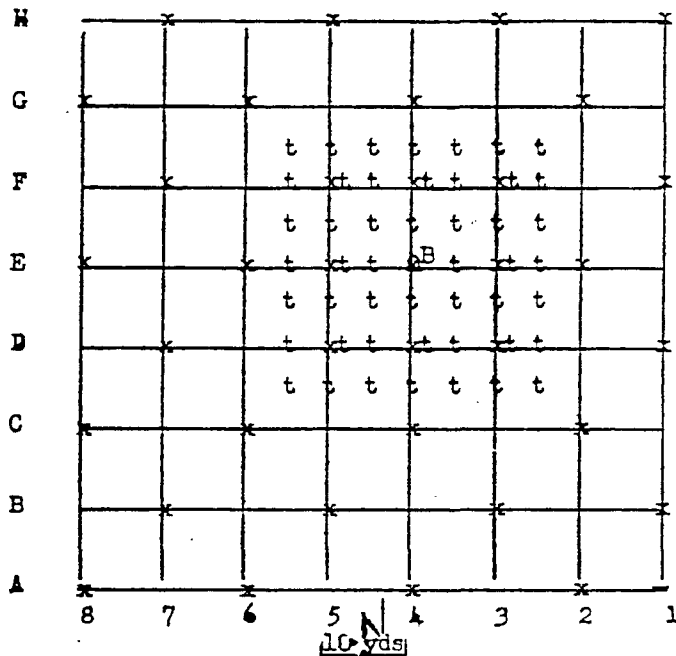
WATER ISLAND, HARBOR OF ST. THOMAS, V.I.

SJP Report No. 136

Chart No. 1

Test Area Layout

Burst Time: 0916 Hours, 23 November 1948



Q Mobile sampling unit
x I&N Total Dosage Pumps
t Tambourines
B Bomb

Target Area #4

MUNITIONS DATA:

One M70 Bomb, filled
55-57 lb. HD (dyed
0.50% DuPont Oil yellow)
fired statically in
vertical position,
tail down.

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = 0.0^{\circ}C$

(Neutral)

Wind Velocity: 5 mph ESE

Temperature: 83.2°F

Relative Humidity: 80%

Precipitation: None

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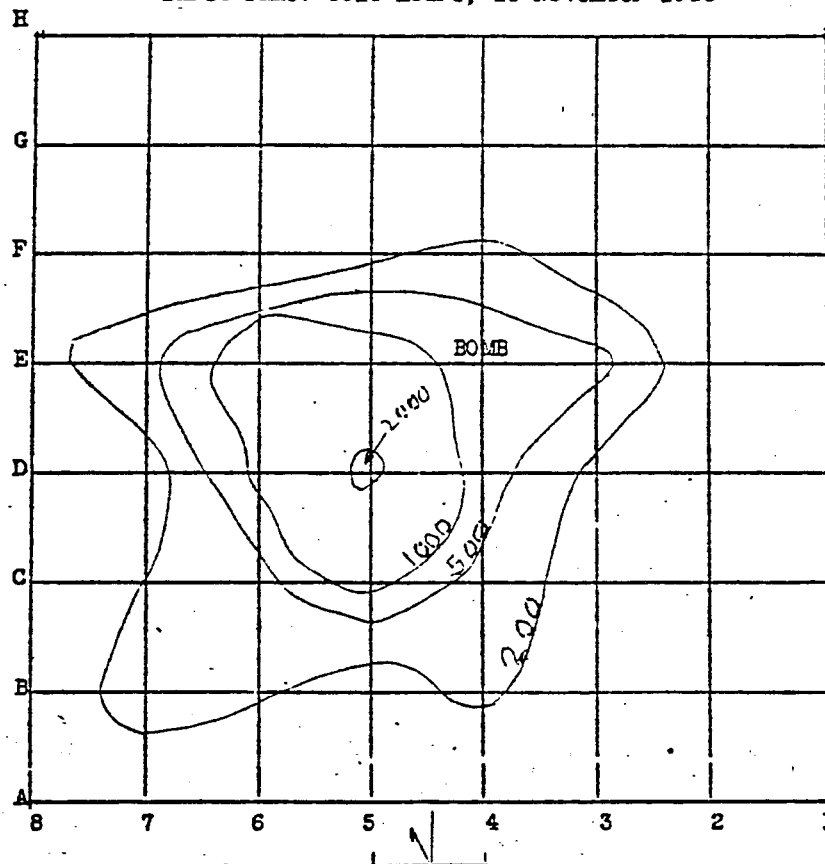
SJP Report No. 136

Chart No. 2

0-15 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
 Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0916 Hours, 23 November 1948



10 yds.
 Target Area #4

AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.162
500	.079
1000	.043
2000	.002

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = 0.8°C
 (Neutral)
 Wind Velocity: 4 mph
 ESE
 Temperature: 83.0°F
 Relative Humidity
 Precipitation: N

MUNITIONS DATA:

One M70 Bomb, filled 55-
 57 lb. HD (dye 0.50% Du-
 Pont Oil Yellow) fired
 statically in vertical
 position, tail down.

B-3

UNCLASSIFIED

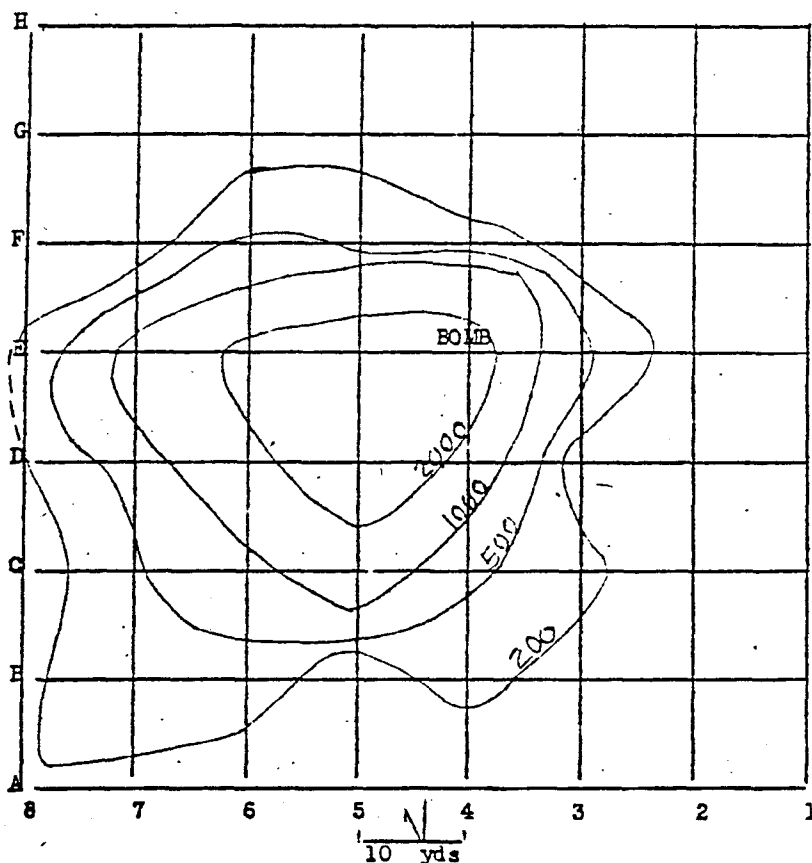
SJP Report No. 136

Chart No. 3

0-60 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000, AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0916 Hours, 23 November 1948



AREA IN ARTILLERY SQUARES
ENCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.227
500	.136
1000	.086
2000	.030

Target Area #4
METEOROLOGICAL DATA:
T_{2.0M} - T_{0.1M} = 0.7°C
(Neutral)
Wind Velocity: 7 1/2 mph E
Temperature: 84.5°F
Relative Humidity: 82%
Precipitation: None

MUNITIONS DATA:
One M70 Bomb, filled 55-
57 lb. HD (dyed 0.50% Du-
Pont Oil Yellow) fired
statically in vertical
position, tail down.

UNCLASSIFIED

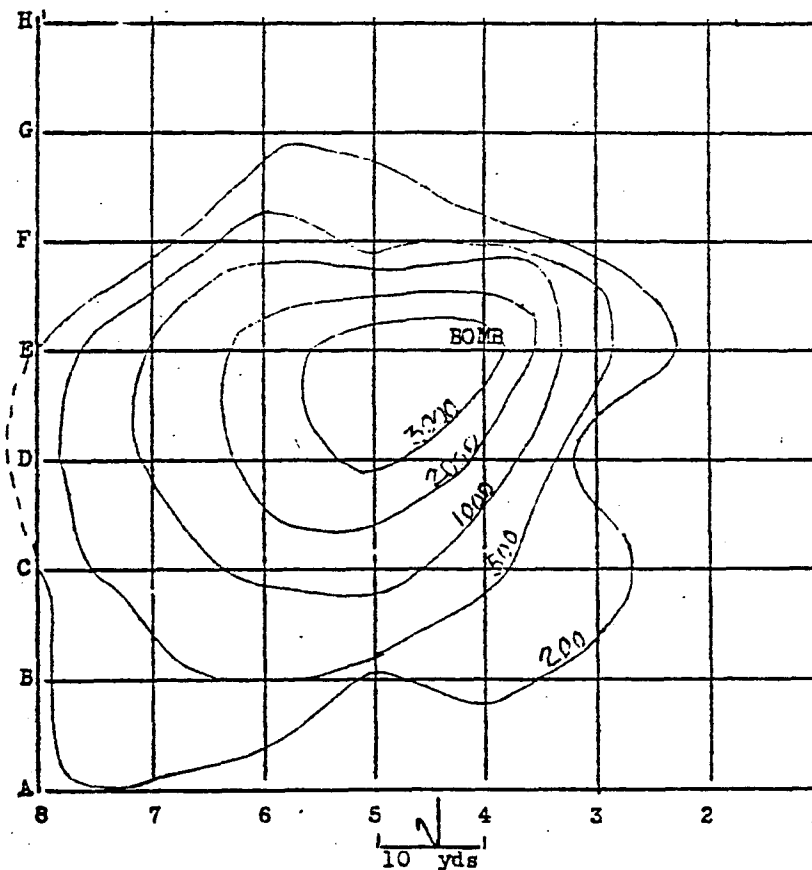
SJP Report No. 136

Chart No. 4

0-120 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000, 2000 AND 3000 CT
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0916 Hours, 23 November 1948



AREA IN ARTILLERY SQUARES
ENCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.245
500	.160
1000	.096
2000	.047
3000	.018

METEOROLOGICAL DATA:
T_{2.0M} - T_{0.1M} = -0.2°C
(Neutral)
Wind Velocity: Calm
Temperature: 83.1°F
Relative Humidity: 71%
Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-
57 lb. HD (dyed c.50% Du-
Pont Oil Yellow) fired
statically in vertical
position, tail down.



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SJP Report No. 1

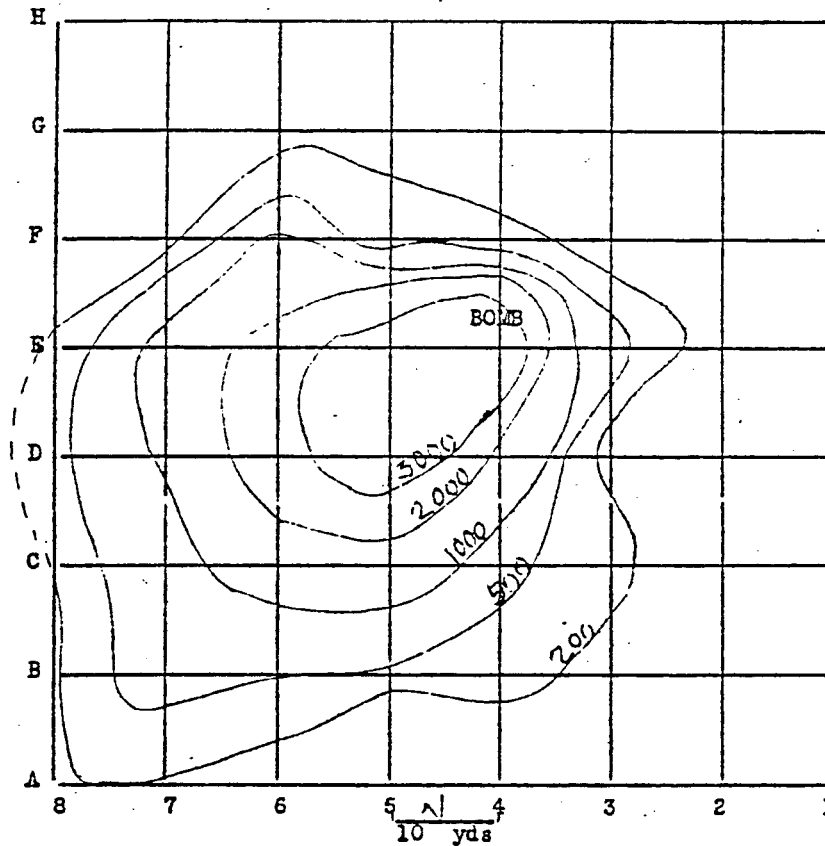
Chart No. 5

0-240 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000, 2000 AND 3000 CT
PRODUCED BY SINGLE M70 BOMB

Eighteen-Inch Sampling Height
Dosages in Milligram minutes per Cubic Meter

UNCLASSIFIED

Burst Time: 0916 Hours, 23 November 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.254
500	.170
1000	.10
2000	.05
3000	.02

Target Area #4

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = 0.1°C
 (Neutral)
 Wind Velocity: 8 mph E
 Temperature: 85.1°F
 Relative Humidity: 66%
 Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-
 57 lb. HD (dyed 0.50% Du-
 Pont Oil Yellow) fired
 statically in vertical
 position, tail down.

UNCLASSIFIED

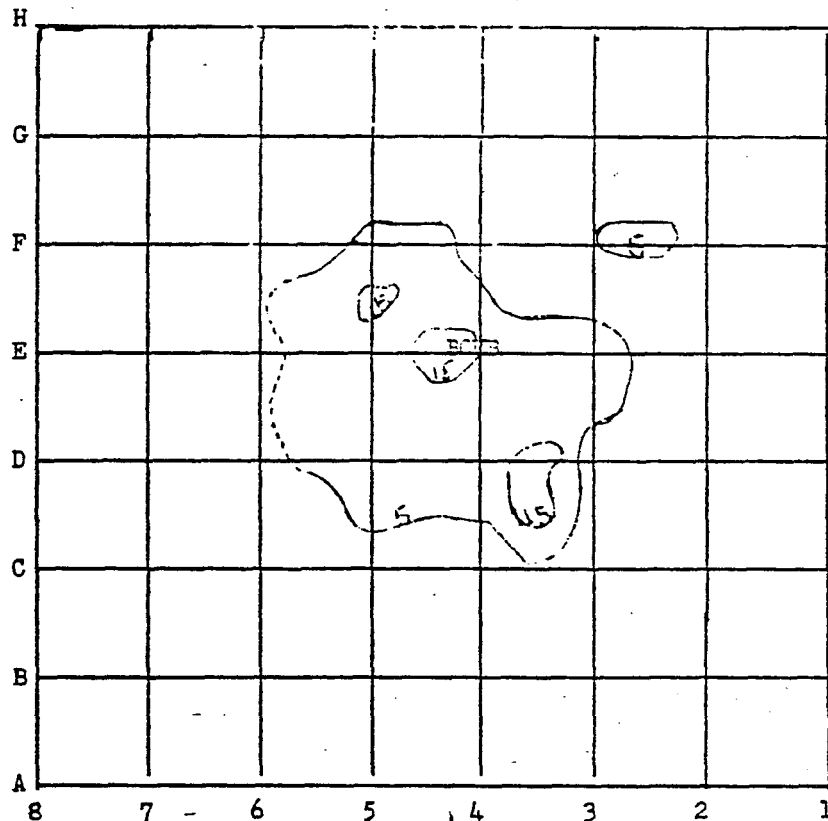
SJP Report No. 130

Chart No. 6

HD GROUND CONTAMINATION CONTOURS FOR 5 AND 15 DOSAGES
PRODUCED BY SINGLE M70 BOMB

Dosages in Grams per Square Meter

Burst Time. 0916 Hours, 23 November 1948



AREA IN ARTILLERY SQUARES
ENCLOSED BY CONTOUR LINES

<u>DOSAGE</u>	<u>AREA</u>
5	.064
15	.007

METEOROLOGICAL DATA:

Target Area #4
 $T_{2.0M} - T_{0.1M} = 0.1^{\circ}C$
(Neutral)
Wind Velocity: 8 mph E
Temperature: 85.1 $^{\circ}F$
Relative Humidity: 66%
Precipitation: None

MUNITIONS DATA:

One M 70 Bomb, filled 55-57 lb. HD (dyed 0.50% Dupont Oil Yellow) fired statically in vertical position, tail down.

B-7

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(SJPR No. 136)

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APPENDIX B
CHARTS AND TABLES
(Phase 1)

|||||

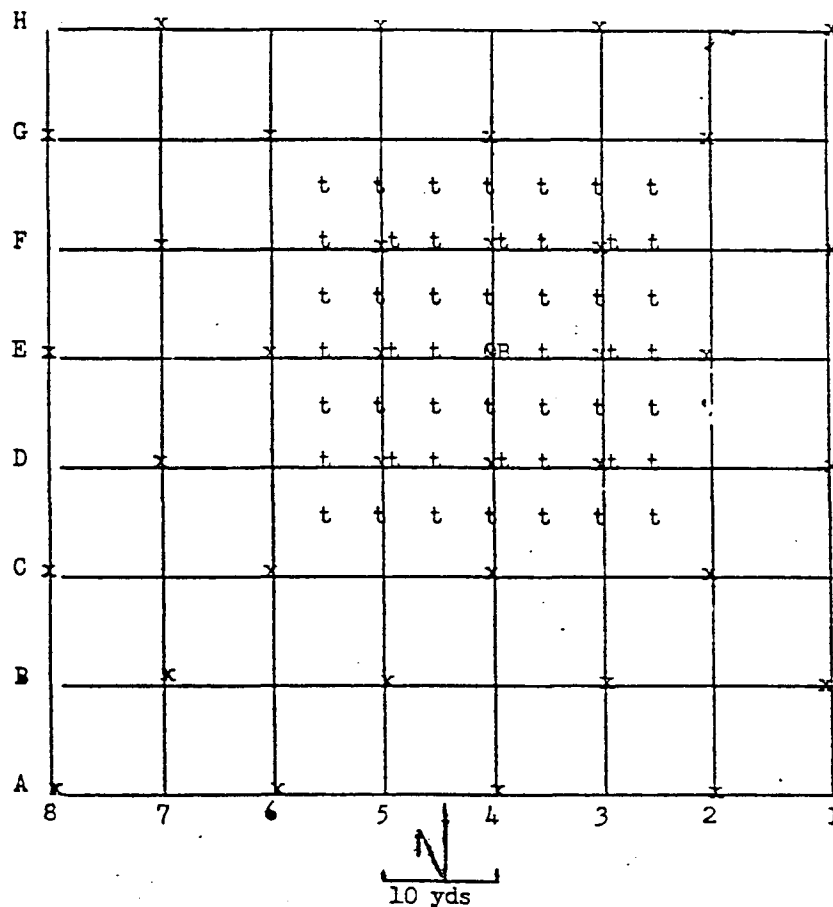
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SJP Report No. 136

Chart No. 1

Test Area Layout

Burst Time: 0912 Hours, 2 December 1948



Q Mobile sampling unit
x L&N Total Dosage Pumps
t Tambourines
B Bomb

Target Area #4

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = -0.2°C

(Neutral)

Wind Velocity: 4 mph

NNE

Relative Humidity: 82%

Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled
55-57 lb. HD (dyed
0.50% DuPont Oil Yellow)
fired statically in
vertical position,
nose down.

UNCLASSIFIED

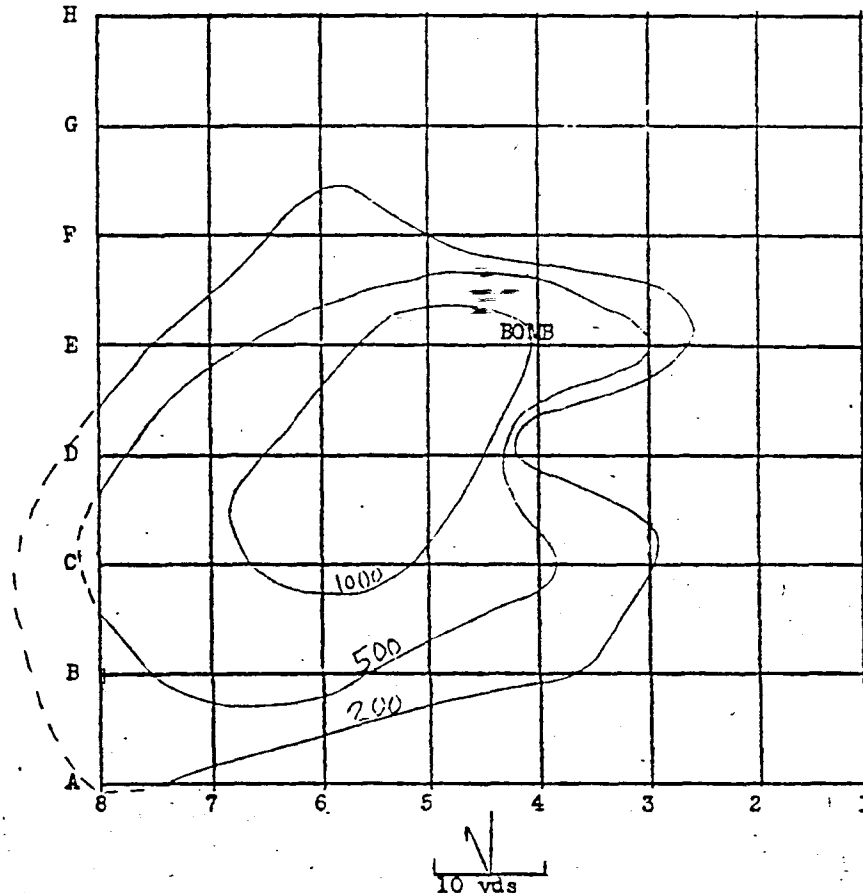
SJP Report No. 136

Chart No. 2

0-15 MINUTE HD VAPOR DOSAGE CONTOURS FOR
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0912 Hours, 2 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.227
500	.111
1000	.045

Target Area #4
METEOROLOGICAL DATA:
T_{2.0M} - 50.0°F = -0.2°C
(Neutral)
Wind Velocity: 0 mph
NNE
Temperature: 82.8°F
Relative Hu
Precipitati
CA
D-3

MUNITIONS DATA:
One M70 Bomb, filled 55-
57 lb. HD (dyed 0.50% Du-
Pont Oil Yellow) fired
statically, in vertical
position, nose down.

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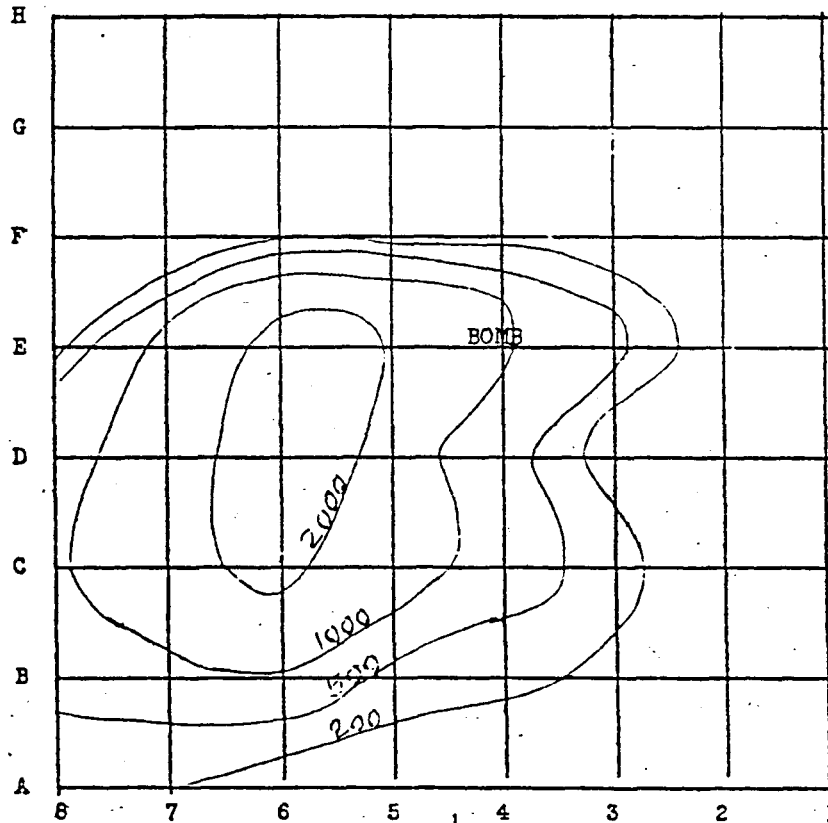
SJP Report No. 136

Chart No. 3

0-60 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
 Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0912 Hours, 2 December 1948



10 yds

Target Area #4

AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.227 ±
500	.170 ±
1000	.109
2000	.027

METEOROLOGICAL DATA:

T_{2.0M} - T_{10.1M} = -0.2°C
 (Neutral)
 Wind Velocity: 8 mph
 NNE
 Temperature: 32.8°F
 Relative Humidity: 77%
 Precipitation:

MUNITIONS DATA:

One M70 Bomb, filled 55-57 lb. HD (dyed 0.50% DuPont Oil Yellow) fired statically in vertical position, nose down.

CA
 D-4

CLASSIFIED

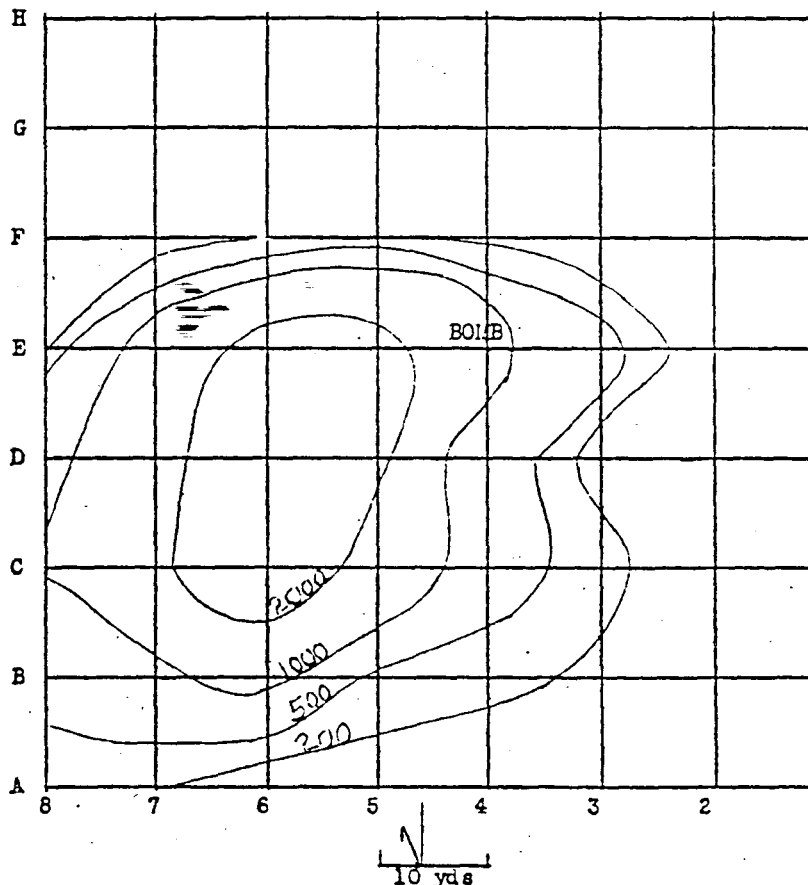
SJP Report No. 136

Chart No. 4

0-120 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
 Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0912 Hours, 2 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.227 +
500	.170 +
1000	.118
2000	.045

Target Area #4
METEOROLOGICAL DATA:
 $T_{2.0M} - T_{0.1M} = -1.2^{\circ}C$
 (Lapse)
 Wind Velocity: . mph E
 Temperature: 58°F
 Relative Humidity: 73%
 Precipitation: None

MUNITIONS DATA:
 One M70 Bomb, filled 55-
 57 lb. HD (dyed 0.50% Du-
 Pont Oil Yellow) fired
 statically in vertical
 position, nose down.

GA

CLASSIFIED

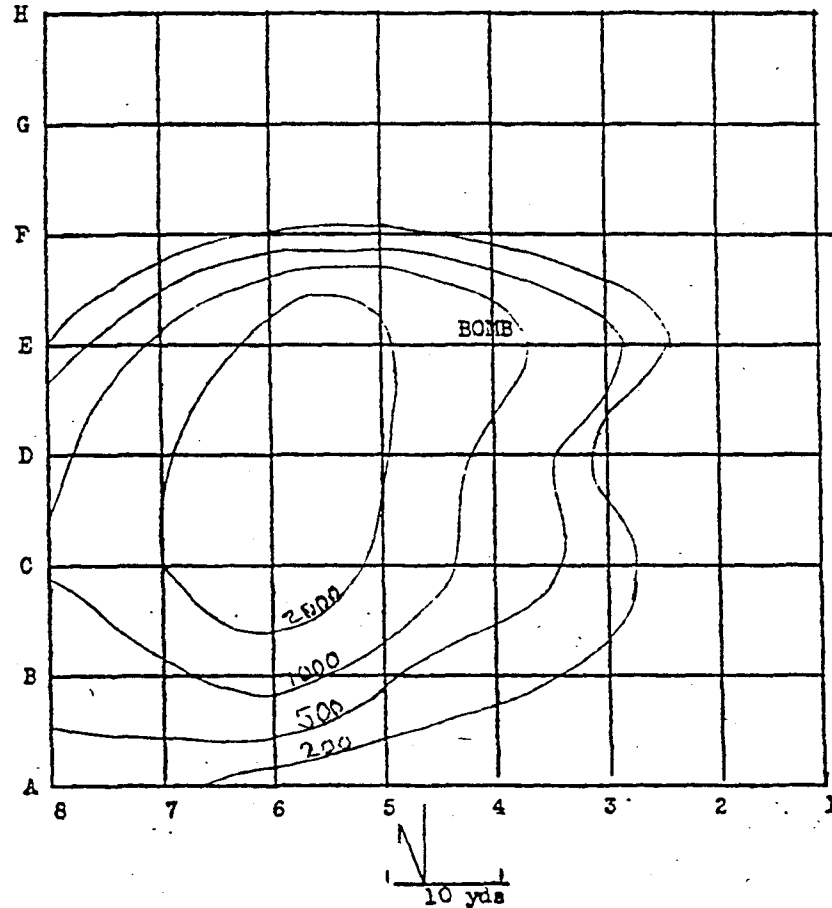
SJP Report No. 136

Chart No. 5

0-240 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
 Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0912 Hours, 2 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.227 +
500	.170 +
1000	.123
2000	.050

Target Area #4

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = -1.0^{\circ}C$
 (Neutral)
 Wind Velocity: 7 mph
 WNE
 Temperature: 85.3°F
 Relative Humidity: 73%
 Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-
 57 lb. HD (dyed 0.50% Du-
 Pont Oil Yellow) fired
 statically, nose down.

D-6

UNCLASSIFIED

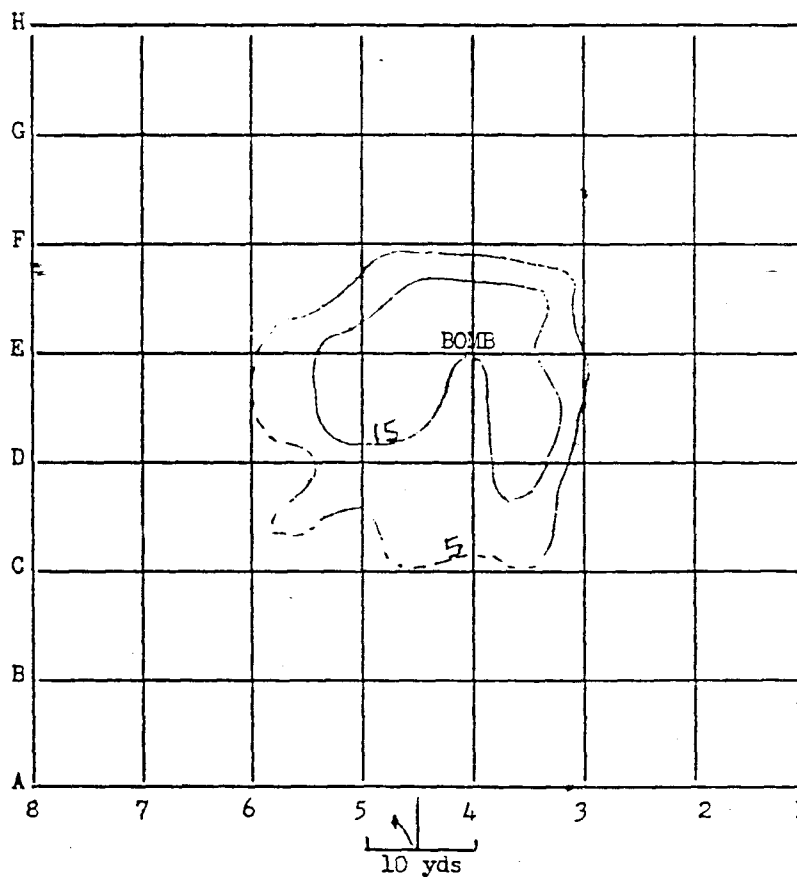
SJP Report No. 136

Chart No. 76

HD GROUND CONTAMINATION CONTOURS FOR 5 AND 15 DOSAGES
PRODUCED BY SINGLE M70 ECMB

Dosages in Grams per Square Meter

Burst Time: 0912 Hours, 2 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

DOSAGE

5
15

AREA

.070
.028

Target Area #4

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = -1.0^{\circ}C$
(Neutral)

Wind Velocity: 7 mph NNE

Temperature: 85.3°F

Relative Humidity: 73%

Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-
57 lb. HD (dyed 0.50% Du-
Pont Oil Yellow) fired
statically in vertical
position, nose down.

CANCELLED
D-87

UNCLASSIFIED

(SJPR No. 136)

APPENDIX D
CHARTS AND TABLES
(Phase 2)

UNCLASSIFIED

(SJPR No. 136)

UNCLASSIFIED

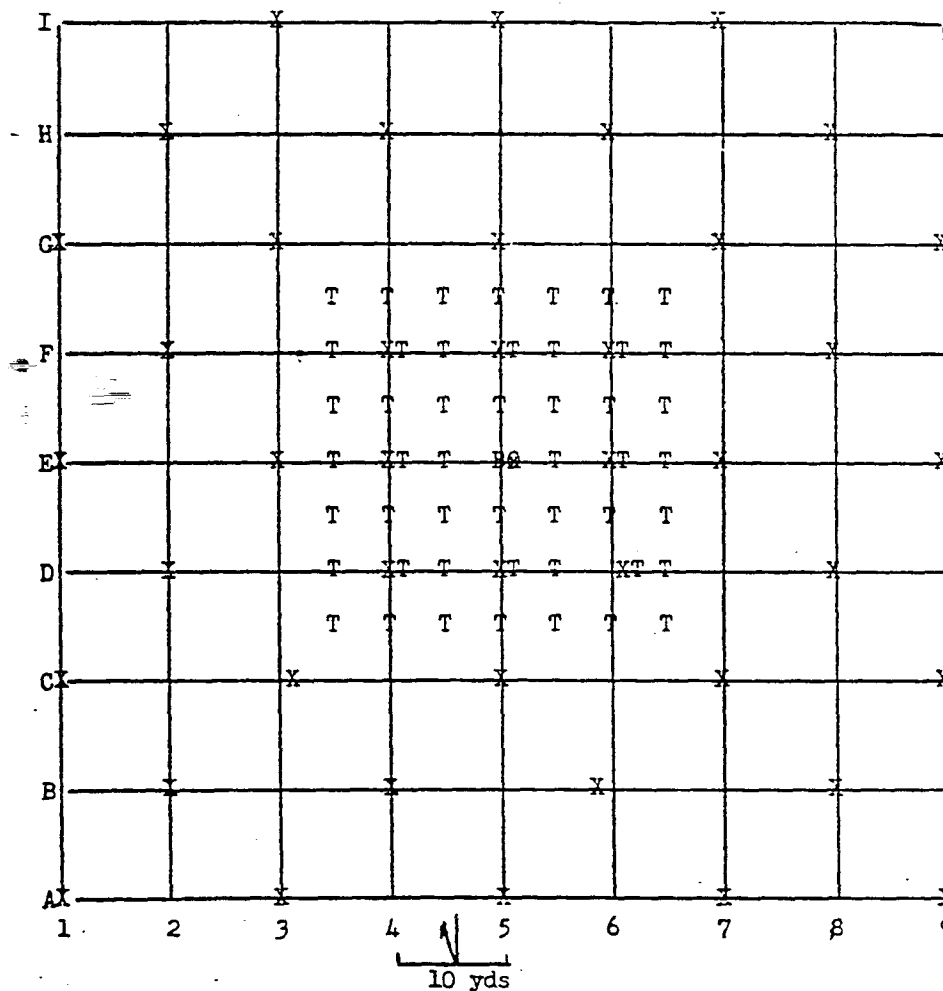
APPENDIX F
CHARTS AND TABLES
(Phase 3)

UNCLASSIFIED

SJP Report No. 136

Chart No. 1
Test Area Layout

Burst Time: 0910 Hours, 9 December 1948



Q Mobile sampling unit
X L&N Total Dosage Pumps
T Tambourines
B Bomb

Target Area #5

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = 2.3^{\circ}C$
(Inversion)

Wind Velocity: 3 mph ENE

Temperature: 80.6°F

Relative Humidity: 76%

Precipitation: None

MUNITIONS DATA:

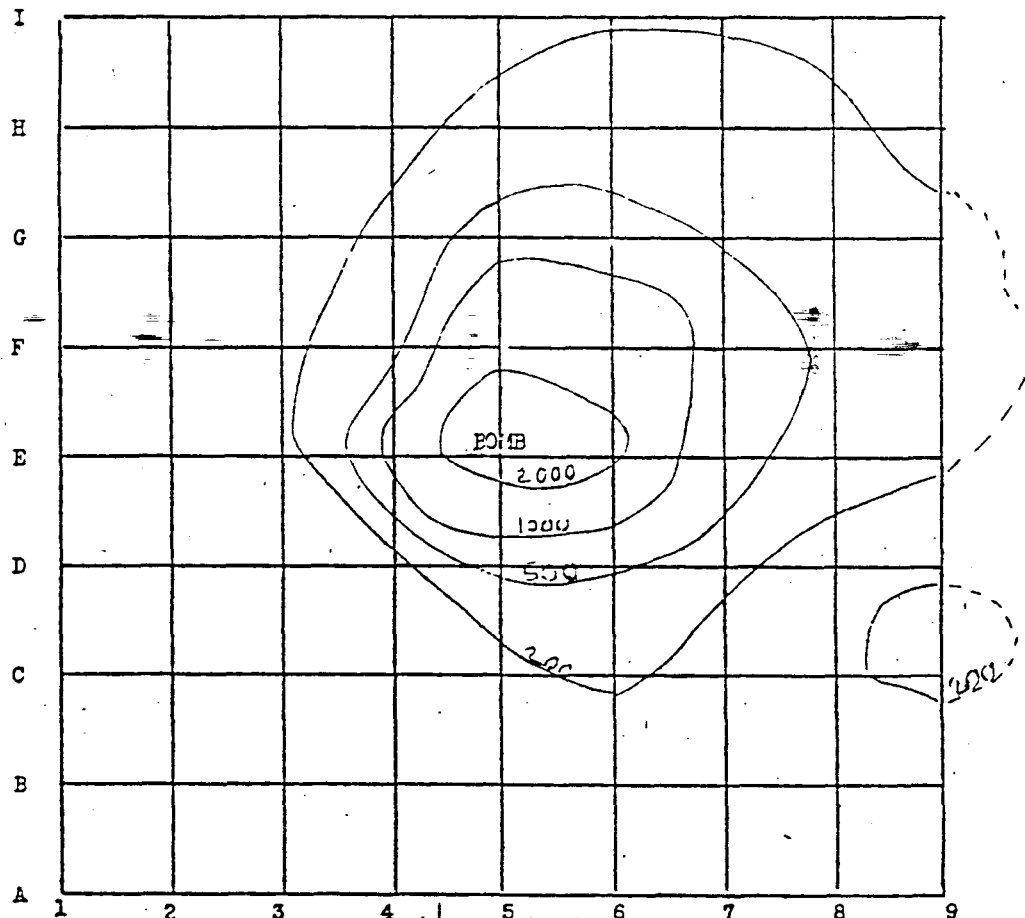
One M70 Bomb, filled 55-57
lb. HD (dyed 0.50% DuPont
Oil Yellow) fired statically
in vertical position, nose
down.

UNCLASSIFIED

SJP Report No. 136
Chart No. 2

0-15 MINUTE HD VAPOR DOSAGE CONTOUR FOR 200, 500, 1000 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0910 Hours, 9 December 1948



10 yds

Target Area #5

AREA IN ARTILLERY SQUARES
ENCLOSED BY CONTOUR LINES

CT	AREA
200	.268
500	.110
1000	.056
2000	.011

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = 1.9°C
(Inversion)
Wind Velocity: 4 mph E
Temperature: 80.7°F
Relative Humidity: 76%
Precipitation: None

MUNITIONS DATA:

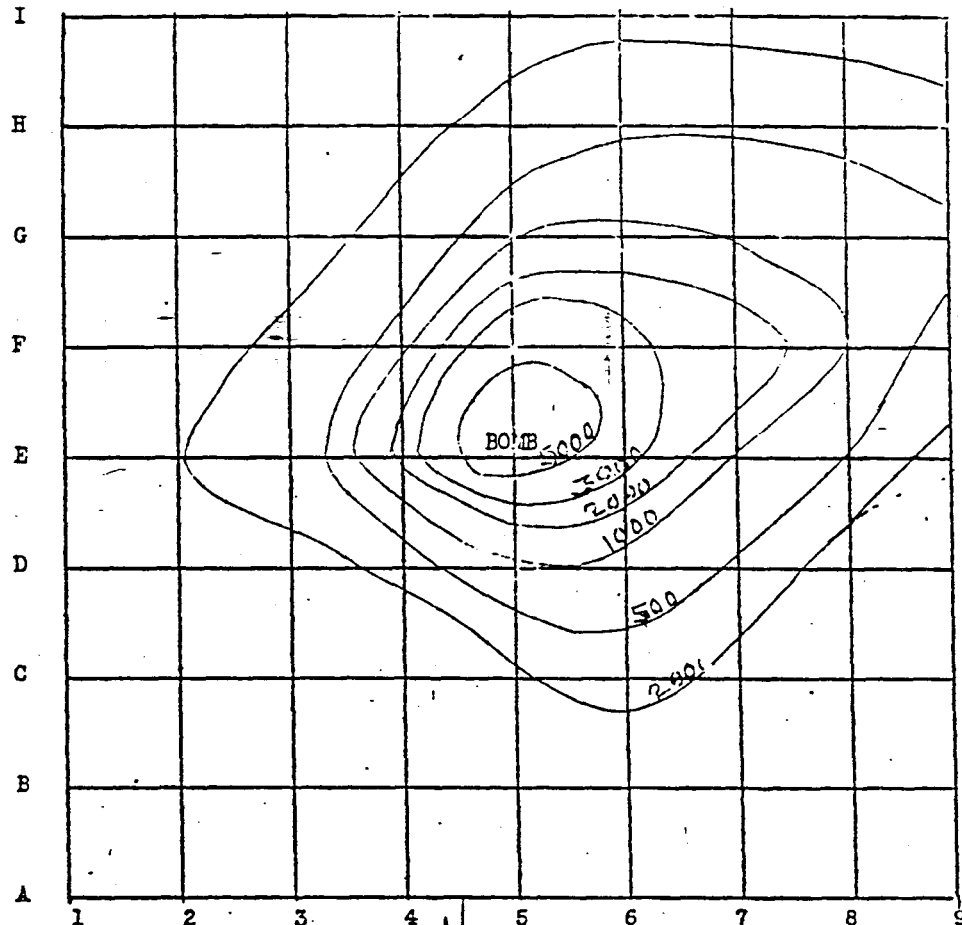
One M70 Bomb, filled 55-57 lb. HD (dyed 0.50% DuPont Oil Yellow) fired statically in vertical position, nose down.

UNCLASSIFIED
SECRET

SJP Report No. 136
Chart No. 3

0-60 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000,
2000, 3000 AND 5000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0910 Hours, 9 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.304 *
500	.175 *
1000	.091
2000	.057
3000	.034
5000	.009

10 yds
Target Area #5

METEOROLOGICAL DATA:

T 2 CM 5.11 1.000
(Neutral)
Wind Velocity: 5 mph E
Temperature: 83.3°F
Relative Humidity: 74%
Precipitation: 0.00

MUNITIONS DATA:

One M70 Bomb, filled 55-
57 lb. HD (dye 0.50% Du-
Pont Oil Yellow) fired
statically in vertical
position, nose down.

F-4

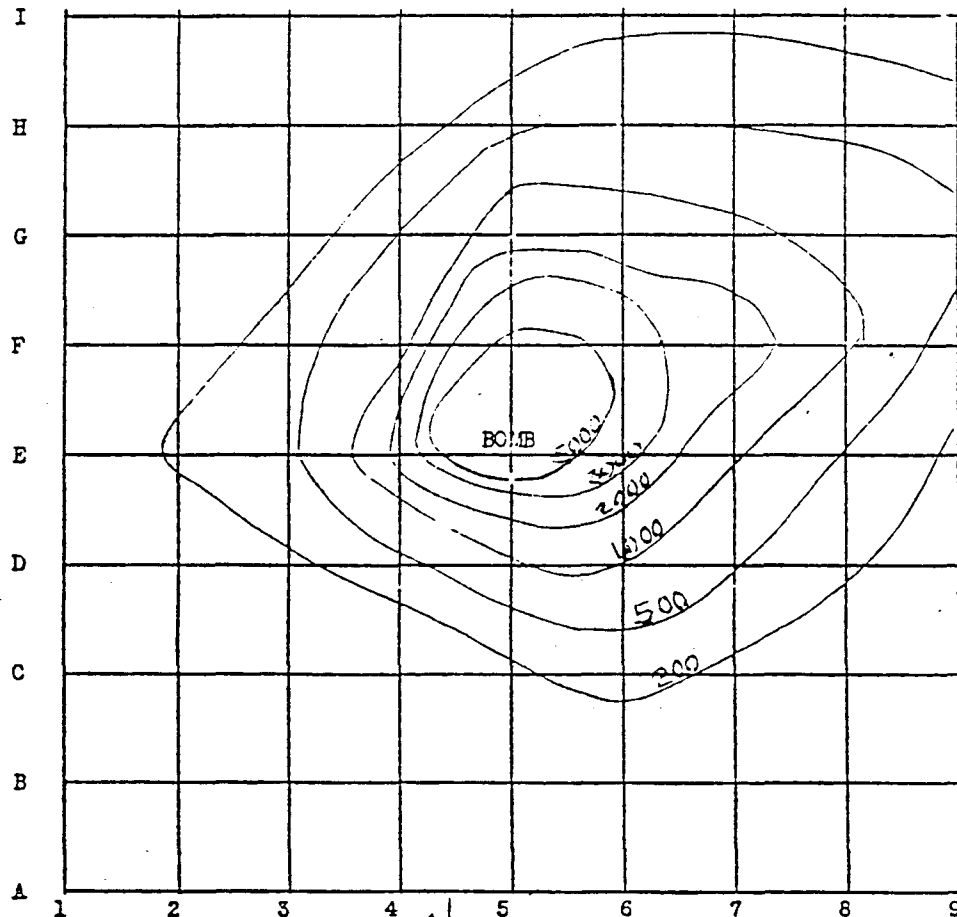
CANCELLED

UNCLASSIFIED

SJP Report No. 136
Chart No. 4

0-120 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000,
2000, 3000 AND 5000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0910 Hours, 9 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.313 ±
500	.200 ±
1000	.102
2000	.060
3000	.036
5000	.015

10 yds
Target Area #5
METEOROLOGICAL DATA:
T 2.0M 1.0°C
(Neutral)
Wind Velocity: 5 mph E
Temperature: 83.3°F
Relative Humidity: 74%
Precipitation: None

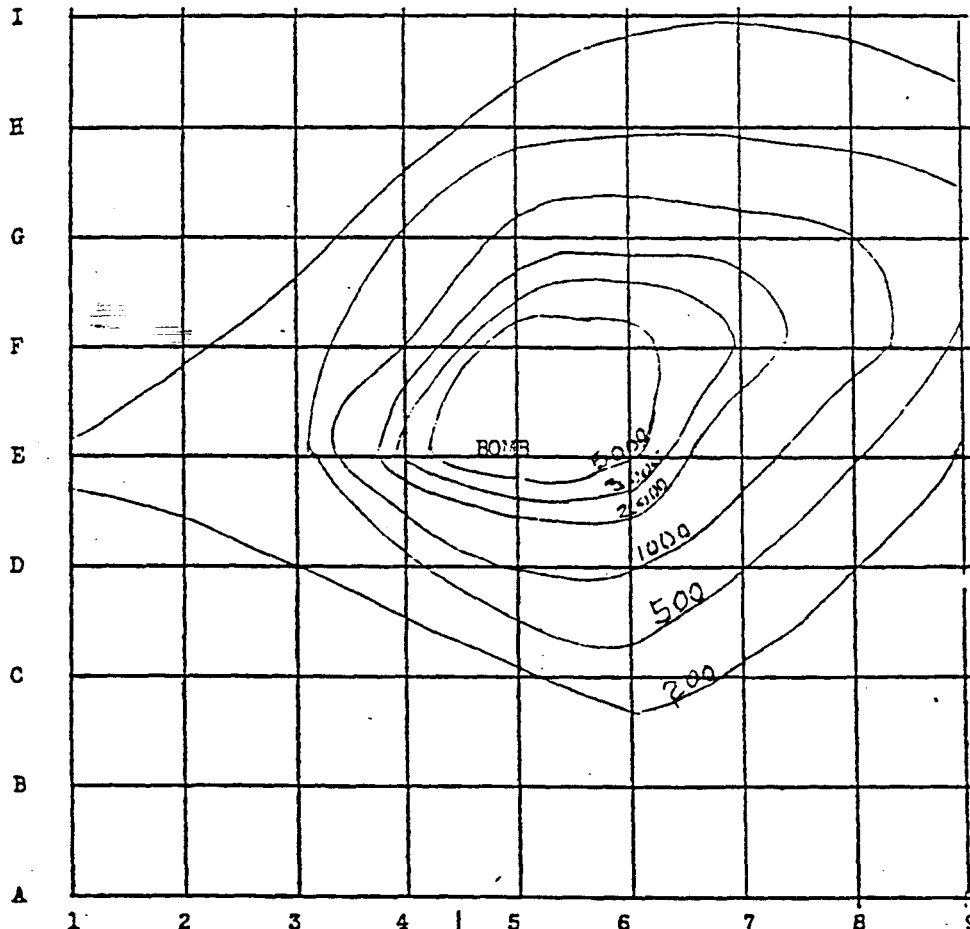
MUNITIONS DATA:
One M70 Bomb, filled 55-
57 lb. HD (dyed 0.50% Du-
Pont Oil Yellow) fired
statically in vertical
position, nose down.

~~SECRET~~ CANCELLED. UNCLASSIFIED

SJP Report No. 136
Chart No. 5

0-240 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000,
2000, 3000 AND 5000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0910 Hours, 9 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.330 *
500	.200 *
1000	.120
2000	.063
3000	.045
5000	.022

10 yds

Target Area #5

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.0M}: 1.0°C

(Neutral)

Wind Velocity: 5 mph E

Temperature: 83.3°

Relative Humidity: 74%

Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-
57 lb. HD (dyed 0.50% Du-
Pont Oil Yellow) fired
statically in vertical
position, nose down.

INCLASSIFIED

SJP Report No. 136

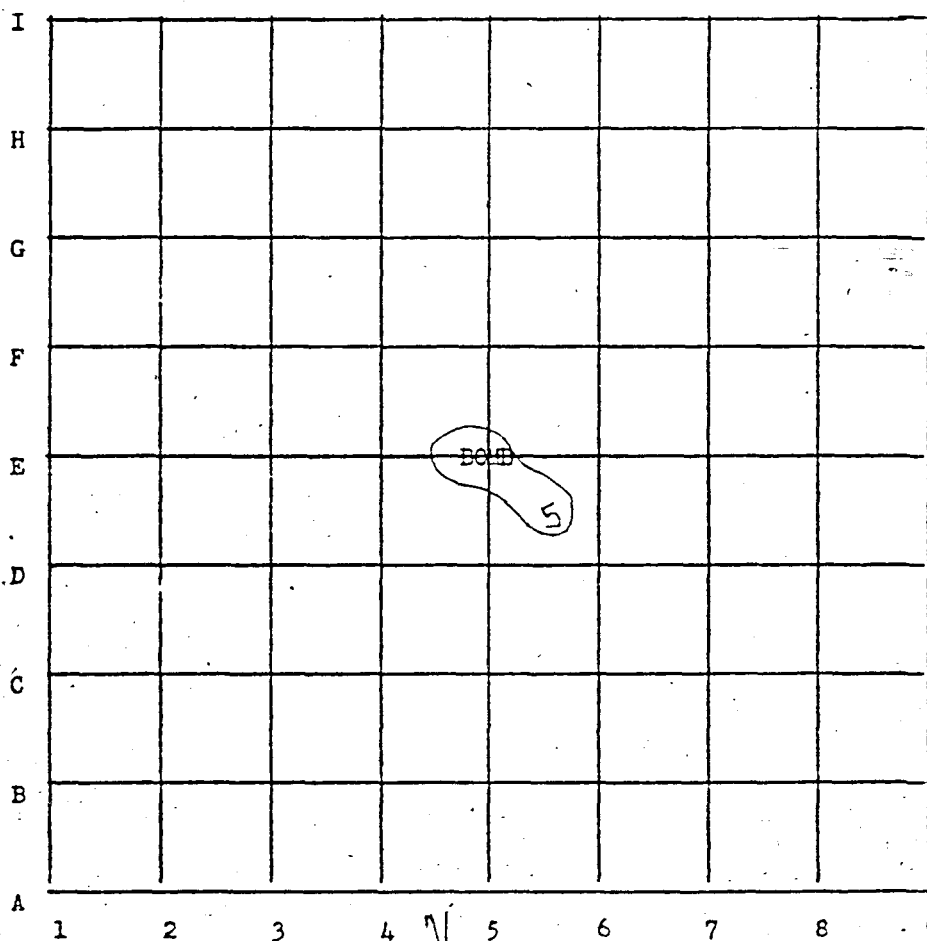
Chart No. 16

HD GROUND CONTAMINATION CONTOURS FOR 5 AND 15 DOSAGES

PRODUCED BY SINGLE M70 BOMB

Dosages in Grams per Square Meter

Burst Time: 0910 Hours, 9 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>DOSAGE</u>	<u>AREA</u>
5	.0075
15	Zero

Target Area #5

METEOROLOGICAL DATA:

T2.0M - T0.1M = 1.4°C
(Inversion)

Wind Velocity: 3 mph NNE

Temperature: 80°F

Relative Humidity: 74%

Precipitation: .09 in.

MUNITIONS DATA:

One M70 Bomb, filled 55-
57 lb. HD (dyed 0.50%

DuPont Oil Yellow) fired
statically in vertical

position, nose down.

UNCLASSIFIED

(SJPR No. 136)

APPENDIX H
CHARTS AND TABLES
(Phase 4)

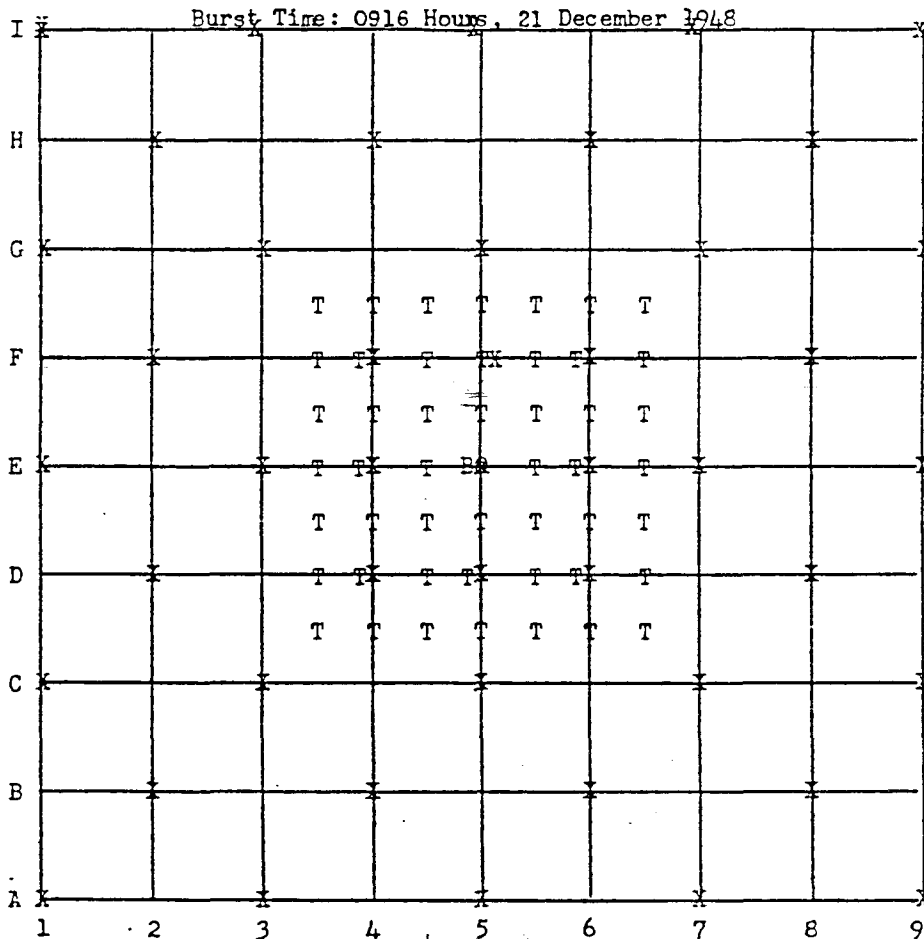
UNCLASSIFIED

UNCLASSIFIED

SJP Report No. 136

Chart No. 1

Test Area Layout



10 yds.

Q Mobile sampling unit
X L&N Total Dosage Pumps
T Tambourines
B Bomb

Target Area #5
METEOROLOGICAL DATA:
T_{2.0M}-T_{0.1M} = 3.5°C
(Inversion)
Wind Velocity: 3mph ENE
Temperature: 79.9°F
Relative Humidity: 85%
Precipitation: None

MUNITIONS DATA:
One M70 Bomb, filled
55-57 lb. HD (dyed 0.50%
DuPont Oil Yellow)
fired statically in ver-
tical position, nose
down.

R.H.

58%

73

73

69

72

56

63

*

*

and in

the

led 55-
0.50% Du-
fired sta-
al position,

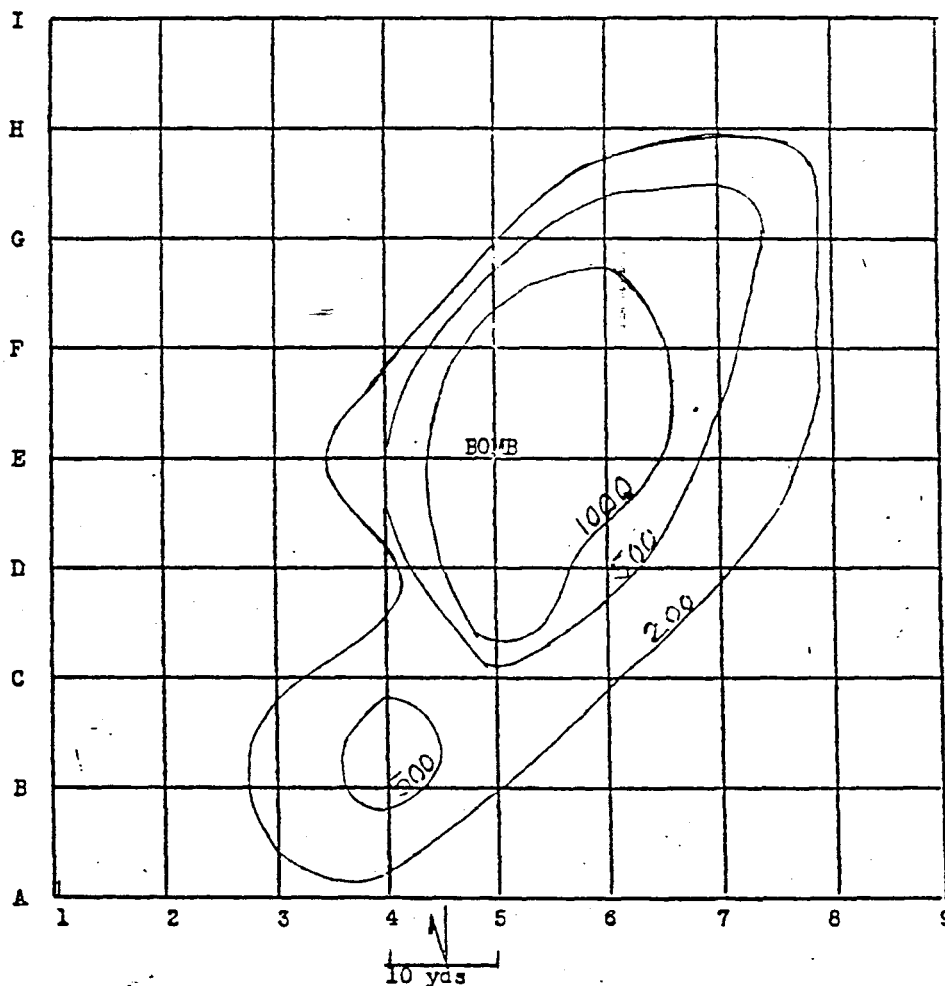
UNCLASSIFIED

SJP Report No. 136

Chart No. 2

0-15 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500 AND 1000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
 Dosages in Milligram Minutes per Cubic Meter
 Burst Time: 0916 Hours, 21 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.207
500	.106
1000	.057

Target Area 7/5

METEOROLOGICAL DATA:
 $T_{2.0M} - T_{0.1M} = 3.5^{\circ}C$
 (Inversion)
 Wind Velocity: 3mph ENE
 Temperature: $79.9^{\circ}F$
 Relative Humidity: 73%
 Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-
 57 lb. HD (dyed 0.50% Du-
 Pont Oil Yellow) fired
 statically in vertical
 position, nose down.

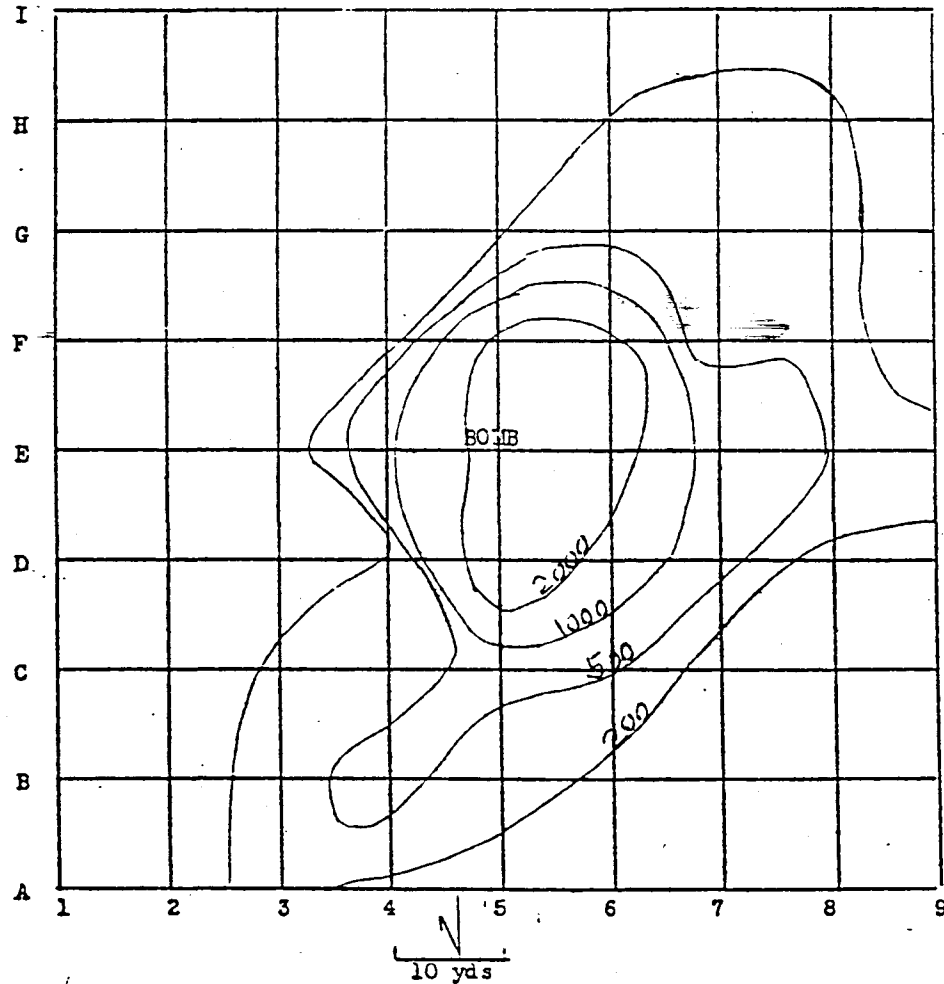
UNCLASSIFIED

_____ C. H. H.

SJP Report No. 136
Chart No. 3

0-60 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in milligram Minutes per Cubic Meter
Burst Time: 0916 Hours, 21 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.275
500	.125
1000	.070
2000	.031

Target Area #5

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = 4.0°C
(Inversion)
Wind Velocity: 5 mph ENE
Temperature: 83.7°F
Relative Humidity: 73%
Precipitation: None

MUNITIONS DATA:

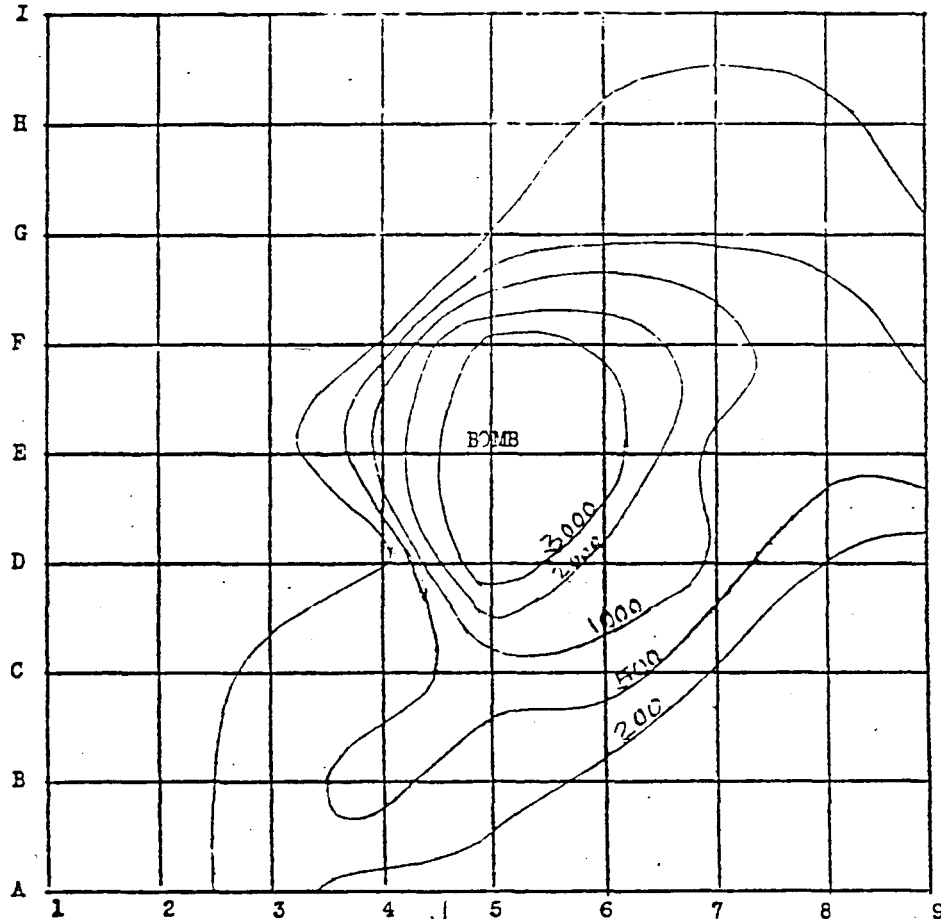
One M70 Bomb, filled 55-
57 lb. HD (dyed 0.50%
DuPont Oil Yellow) fired
statically in vertical
position, nose down.

UNCLASSIFIED

SJP Report No. 136
Chart No. 4

0-120 MINUTE HD DOSAGE CONTOURS FOR 200, 500, 1000, 2000 AND 3000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0916 Hours, 21 December 1948



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.300 ±
500	.166 ±
1000	.091
2000	.052
3000	.030

Target Area #5
METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = 2.5^{\circ}C$
(Inversion)
Wind Velocity: 4 mph ENS
Temperature: 84.5°F
Relative Humidity: 66%
Precipitation: None

MUNITIONS DATA:

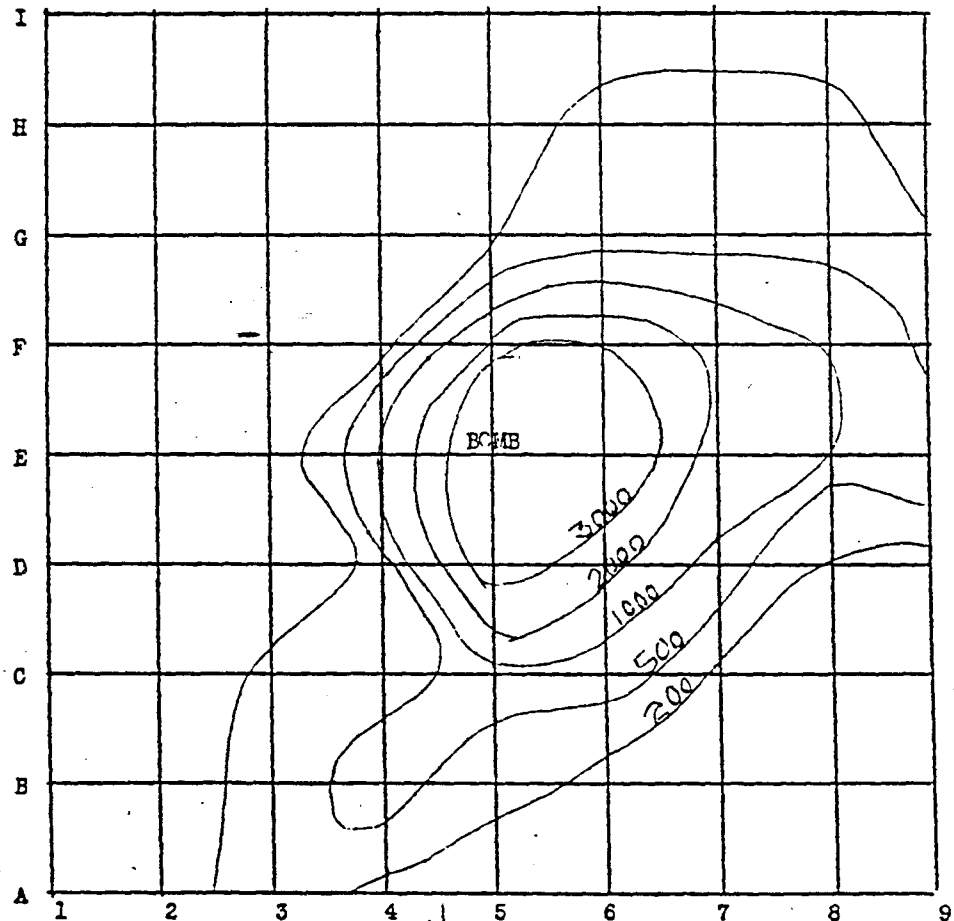
One M70 Bomb, filled 55-
57 lb. HD (dyed 0.50% Du-
Pont Oil Yellow) fired
statically in vertical
position, nose down.

UNCLASSIFIED

Chart No. 5

0-240 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000, 2000 AND 3000
CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
 Dosages in Milligram Minutes per Cubic Meter
 Burst Time: 0916 Hours, 21 December 1948



AREA IN ARTILLERY SQUARES
ENCLOSED BY CONTOUR LINES

CT	AREA
200	.300 ±
500	.168 ±
1000	.102
2000	.057
3000	.031

Target Area #5

METEOLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = .5^{\circ}C$
 (Neutral)
 Wind Velocity: 6mph ENE
 Temperature: 88.3°F
 Relative Humidity: --
 Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-
 57 lb. HD (dyed 0.50% Du-
 Pont Oil Yellow) fired
 statically in vertical
 position, nose down.

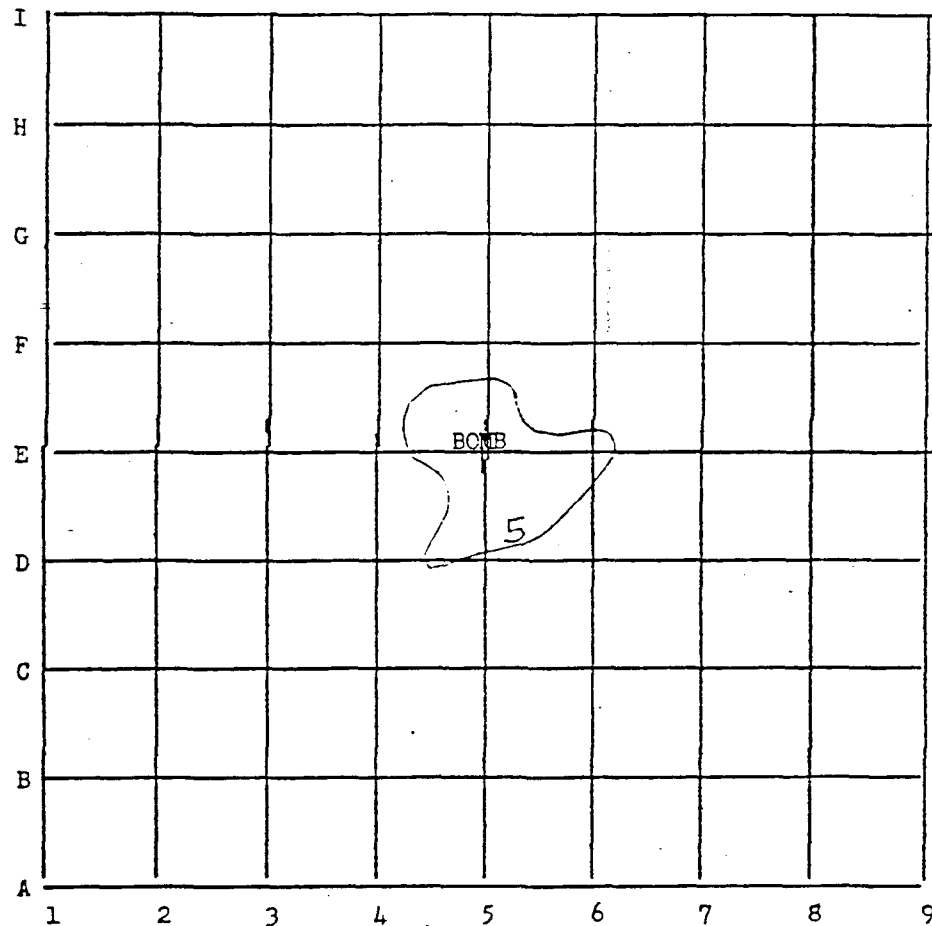
UNCLASSIFIED

SJP Report No. 136

Chart No. 76

HD GROUND CONTAMINATION CONTOURS FOR 5 AND 15 DOSAGES
PRODUCED BY SINGLE M70 BOMB

Dosages in Grams per Square Meter
Burst Time: 0916 Hours, 21 December 1948



10 yds.

Target Area #5

AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

DOSAGE

5
15

AREA

.021

METEOROLOGICAL DATA:

T_{2.0M-T_{0.1M}} = .5°C
(Neutral)

Wind Velocity: 6mph ENE

Temperature: 88.3°F

MUNITIONS DATA:

One M70 Bomb, filled
55-57lb. HD(dyed 0.50%
DuPont Oil Yellow) fired
statically in vertical
position, nose down.

RECLASSIFIED

(SJFR No. 136)

UNCLASSIFIED

APPENDIX J

CHARTS AND TABLES

(Phase 5)

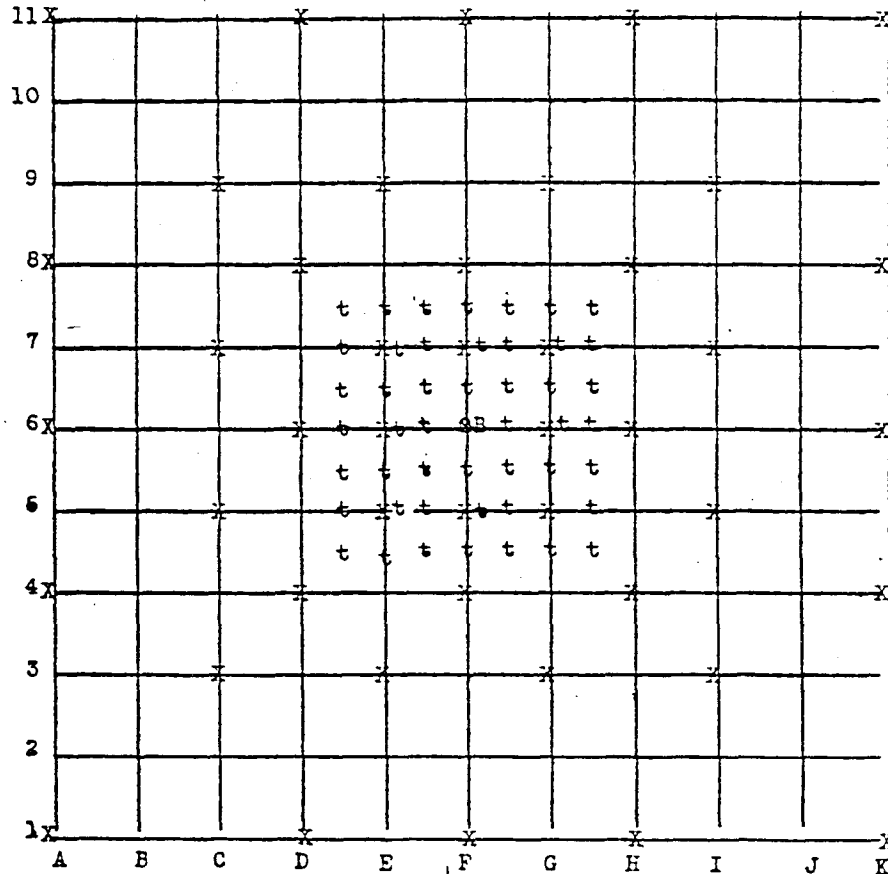
UNCLASSIFIED

SJP REPORT No. 136

Chart No. 1

Test Area Layout

Burst Time: 0900 Hours, 13 January 1949



@ Mobile sampling unit
 x L&N Total Dosage Pumps
 t Tambourines
 B Bomb

Target Area #3

METEOROLOGICAL DATA :

$T_{2.0M} - T_{0.1M} = 2.2^{\circ}C$

(Inversion)

Wind Velocity: Calm

Temperature: $79^{\circ}F$

Relative Humidity: ~~77%~~

Precipitation: Non

MUNITIONS DATA:

One M70 Bomb, filled
 55-57 lb. HD (dyed
 0.25% DuPont Oil yellow)
 fired statically in
 vertical position,
 nose down, 7 in. below
 ground level.

UNCLASSIFIED

SJP Report No. 136

Table 1

Meteorological Data

Time of Burst: 0900 Hours, 13 January 1949

Time	Temperature, C							Wind		R. H.
	Soil	0.1m	0.3m	1.0m	2.0m	3.0m	4.0m	Dir	Speed	
0830	20.5	24.0	25.0	25.6	27.0	26.0	26.2	NE	C	92%
0845	21.0	25.0	26.0	26.1	27.2	26.4	27.0	N	C	77%
0915	21.0	25.1	27.3	27.0	27.5	26.8	27.3	N	3	81%
0930	21.4	25.8	27.5	28.1	28.0	27.0	27.8	NNE	3	75%
1000	21.8	26.0	27.7	27.1	26.8	26.0	26.1	N	2	84%
1030	22.8	28.0	30.0	30.2	29.8	28.5	28.3	N	3	78%
1100	24.1	27.3	27.9	28.1	27.7	26.5	26.5	N	1	85%
1200	26.4	34.0	34.2	32.5	31.7	29.9	30.0	W	C	74%
1300	30.0	30.4	30.0	28.2	27.3	26.0	26.1	NE	3	84%

There was no rainfall during the test.

The Meteorology Station was set up 60 yards SW of the Bomb Burst.

MUNITIONS DATA:

One M70 Bomb, filled 55-57 lbs. HD (dyed 0.25% DuPont Oil Yellow) fired statically in vertical position, nose down, 7 in. below ground level.

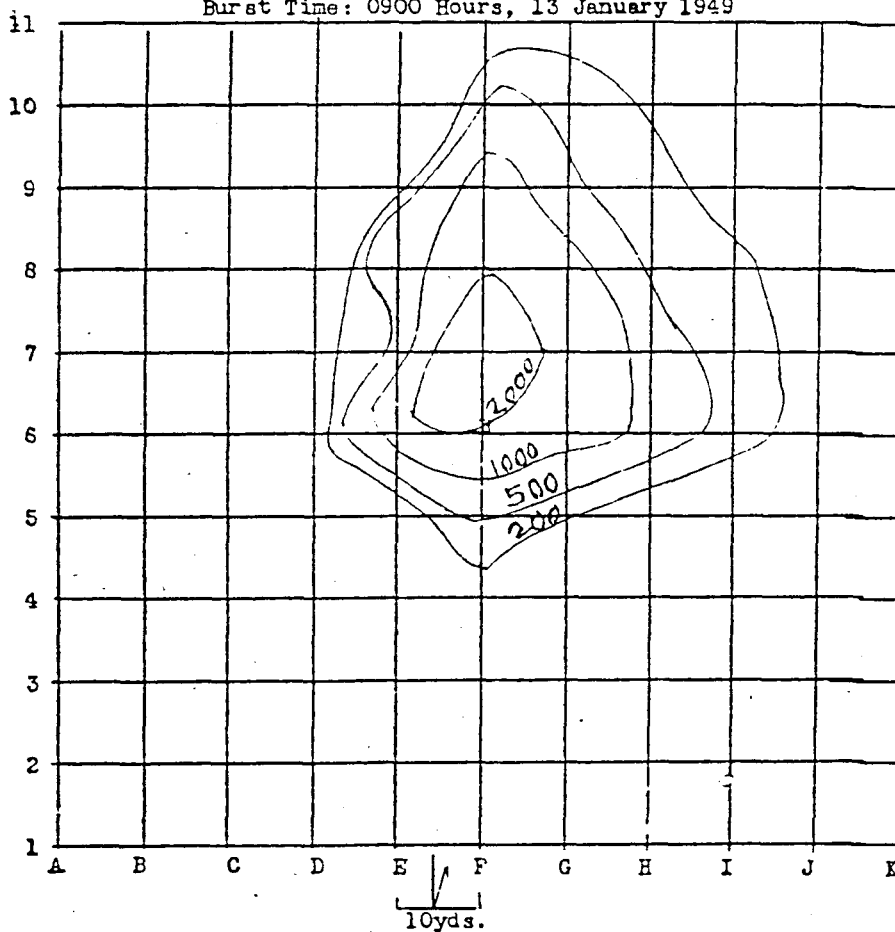
SJP Report No. 136

Chart No. 2

0-15 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000 AND 2000
CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in milligram Minutes per Cubic Meter

Burst Time: 0900 Hours, 13 January 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.232
500	.140
1000	.088
2000	.020

Target Area #8

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = 2.4°C

(Inversion)

Wind Velocity: 5 mph N

Temperature: 87.1°F

Relative humidity: 81%

Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled

55-57 lb. HD (dyed 0.25%

DuPont Oil Yellow) fared

statically in vertical

position, nose down, 7 in.

below ground level.

UNCLASSIFIED

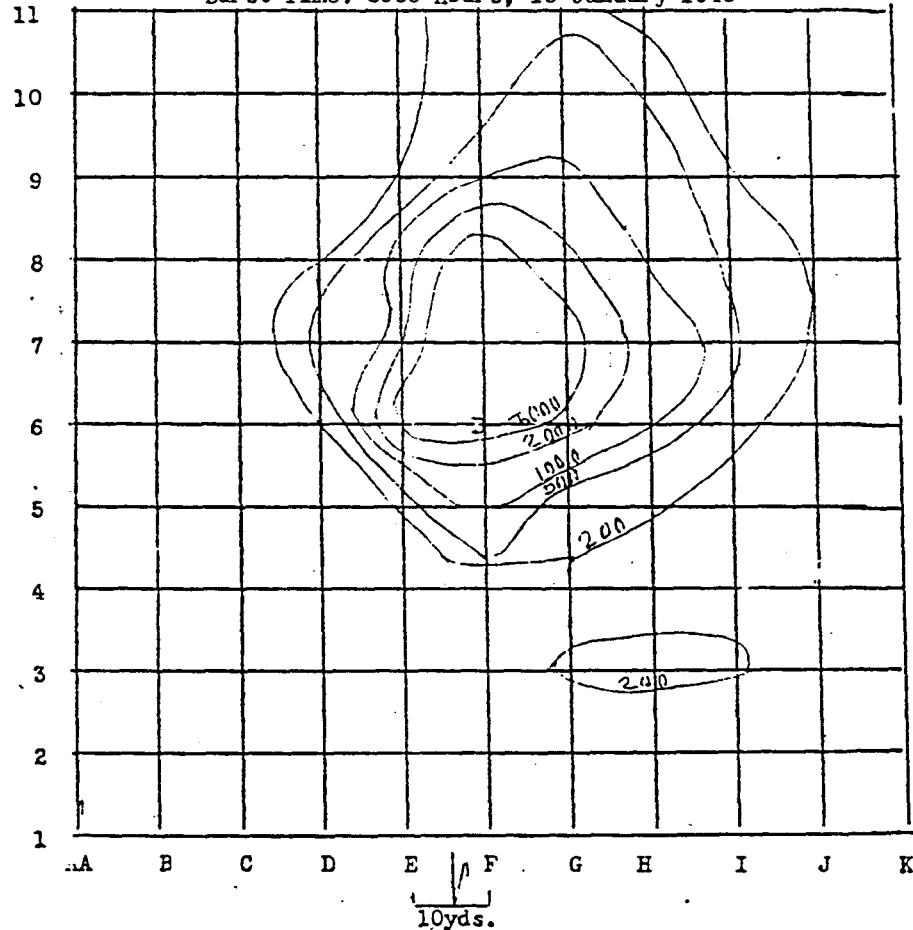
SJP Report No. 136

Chart No. 3

0-60 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000, 2000
AND 3000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0900 Hours, 13 January 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.308
500	.184
1000	.120
2000	.072
3000	.040

Target Area #8

METEOROLOGICAL DATA:

T2.0M - T0.1M = 0.8°C
(Neutral)
Wind Velocity: 2 mph N
Temperature: 81.9°F
Relative Humidity: 84%
Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled
55-57 lb. HD (dyed 0.25%
DuPont Oil Yellow)
fired statically in
vertical position, nose
down, 7 in. below ground
level.

UNCLASSIFIED

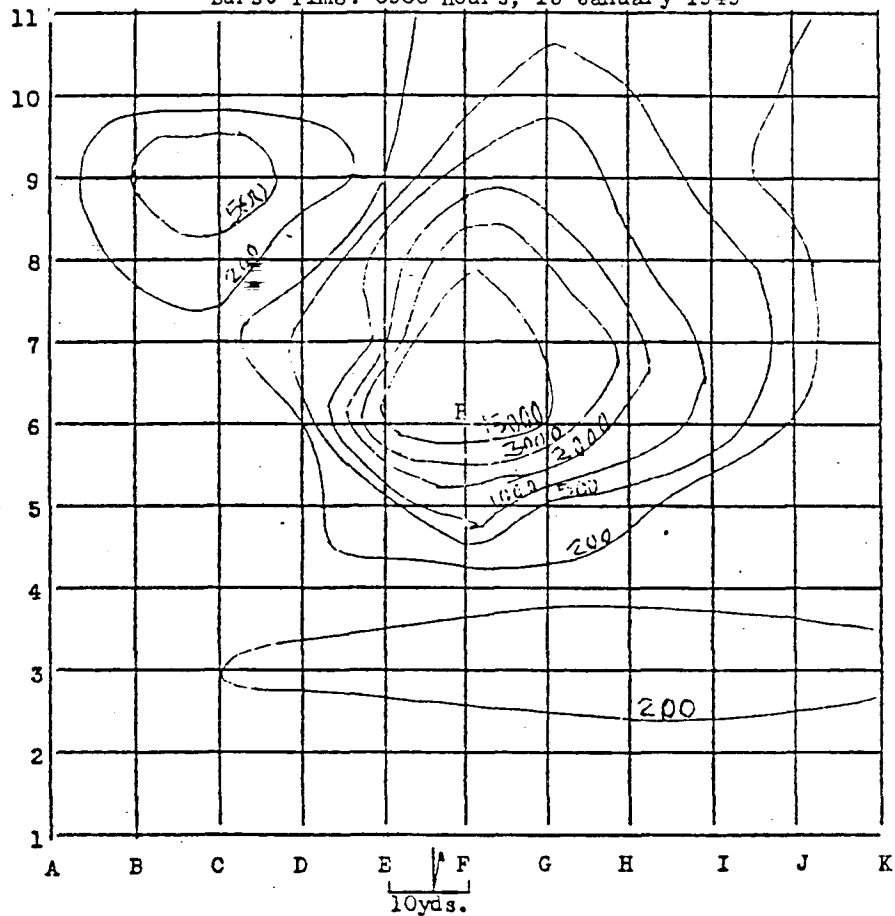
SJP Report No. 136

Chart No. 4

0-120 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000, 2000,
3000 AND 5000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter

Burst Time: 0900 Hours, 13 January 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.496
500	.240
1000	.144
2000	.092
3000	.064
5000	.032

Target Area #8

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = 0.4^{\circ}C$

(Neutral)

Wind Velocity: 1 mph N

Temperature: 82.2°F

Relative Humidity: 85%

Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled
55-57 lb. HD (dyed
0.25% DuPont Oil Yellow)
fired statically in
vertical position, nose
down, 7 in. below ground
level.

UNCLASSIFIED

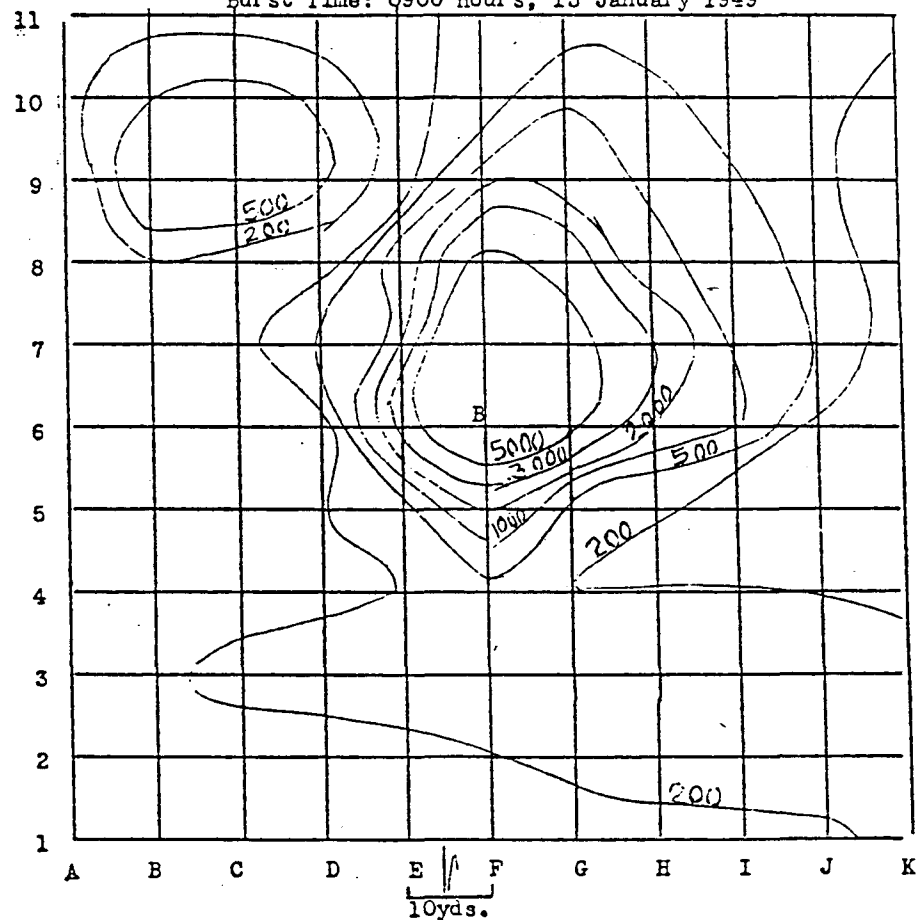
SJP Report No. 136

Chart No. 5

O-240 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000, 2000,
3000 AND 5000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter

Burst Time: Q900 Hours, 13 January 1949



AREA IN ARTILLERY SQUARES INCLOSED BY CONTOUR LINES	
CT	AREA
200	.640
500	.272
1000	.145
2000	.100
3000	.076
5000	.040

Target Area #8
METEOROLOGICAL DATA:
 $T_{2.0M} - T_{0.1M} = -3.1^{\circ}C$
(Lapse)
Wind Velocity: 3 mph NE
Temperature: 86°F
Relative Humidity: 84%
Precipitation: None

MUNITIONS DATA:
One M70 Bomb, filled
55-57 lb. HD (dyed
0.25% DuPont Oil Yel-
low) fired statically
in vertical position,
nose down, 7 in. be-
low ground level.

UNCLASSIFIED

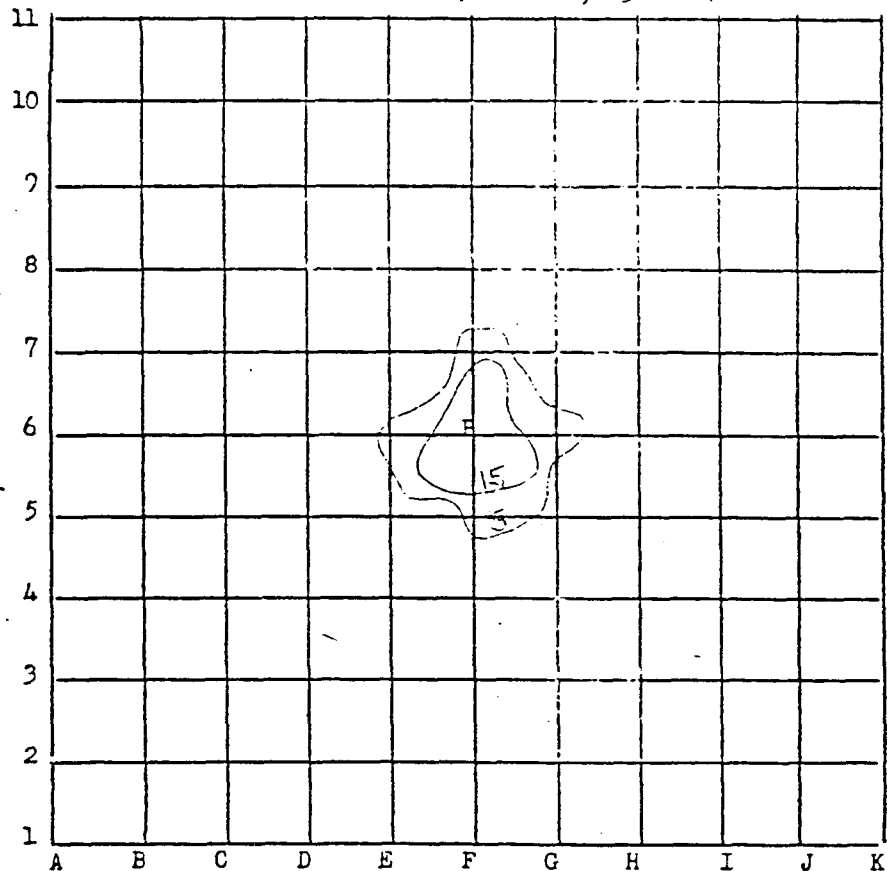
SJP Report No. 136

Chart No. 76

HD GROUND CONTAMINATION CONTOURS FOR 5 AND 15 DOSAGES
PRODUCED BY SINGLE M70 BOMB

Dosages in Grams per Square Meter

Burst Time: 0900 Hours, 13 Jan 48



10 yds.
Target Area #8

AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>DOSAGE</u>	<u>AREA</u>
5	.036
15	.016

METEOROLOGICAL DATA:

$T_{3.0M} - T_{0.1M} = -3.1^{\circ}C$
(Lapse)
Wind Velocity: 3 mph NE
Temperature: 86 F
Relative Humidity: 84%
Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-
57 lb. HD (dyed 0.25%
duPont Oil Yellow) fired
statically in vertical
position, nose down,
7 in. below ground level.

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(SJPR No. 136)

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APPENDIX I

CHARTS AND TABLES

(Phase 6)

CANCELLED

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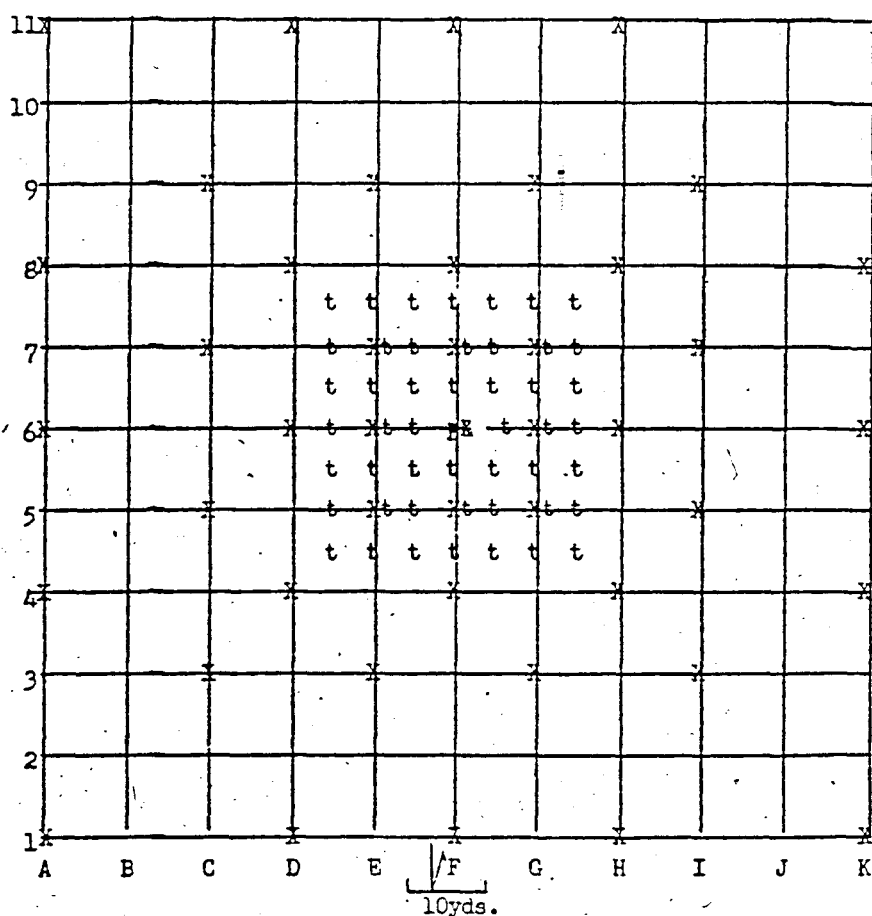
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SJP Report No. 136

Chart No. 1

Test Area Layout

Burst Time: 0911 Hours, 25 January 1949



Target Area #8

Q Mobile sampling unit
X L&N Total Dosage Pumps
t Tambourines
B Bomb

METEOROLOGICAL DATA:
T2.0M - T0.1M = -0.5°C
(Neutral)
Wind Velocity: 5 mph NE
Temperature: 83.3°F
Relative Humidity: 60%
Precipitation:

MUNITIONS DATA:

One M70 Bomb, filled 55-57
lb. HD (dye 0.25% DuPont
Oil Red) fired statically in
position, nose down,
below ground level.

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SJP

~~CANCELLED~~ ~~UNCLASSIFIED~~
 Meteorological Data

Time of Burst: 0911 Hours, 25 January 1949

Time	Temperatures °C							Wind		P.H.
	Soil	0.1m	0.3m	1.0m	2.0m	3.0m	4.0	Dir	Speed	
0815	24.0	26.0	27.0	25.5	25.5	25.5	25.5	NNE	4	61
0830	24.0	26.0	27.0	25.5	25.8	25.6	25.6	NNE	4	63
0845	28.0	26.0	27.0	25.5	25.8	25.6	25.0	NNE	3	66
0900	24.5	28.0	28.5	28.0	27.5	27.5	27.5	NNE	5	60
0915	24.6	28.0	28.5	28.0	27.5	27.5	27.5	NNE	5	60
0930	24.6	28.0	28.5	28.4	27.5	27.5	22.5	NNE	4	54
1000	24.6	27.0	27.0	25.8	27.6	26.0	26.0	NNE	5	75
1030	26.4	31.0	30.0	29.6	29.6	26.0	27.0	E	4	76
1100	28.0	34.0	33.0	31.0	30.0	27.0	28.0	E	4	73
1130	30.0	35.0	33.5	31.0	30.0	27.0	27.0	E	4	57
1200	31.0	36.0	34.0	30.0	30.0	27.0	27.0	E	4	57
1300	27.0	39.0	36.0	34.0	33.0	28.0	28.0	E	3	58

The Meteorology Station was set up 60 yds. SW of bomb burst. Wind speed was measured below canopy at 6 feet above ground level.

There was no precipitation during the test.

MUNITIONS DATA:

One M70 Bomb, filled 55-
 57 lb. HD (dyed 0.25% Du-
 Pont Oil Red) fired sta-
 tically in vertical position
 nose down 7' below

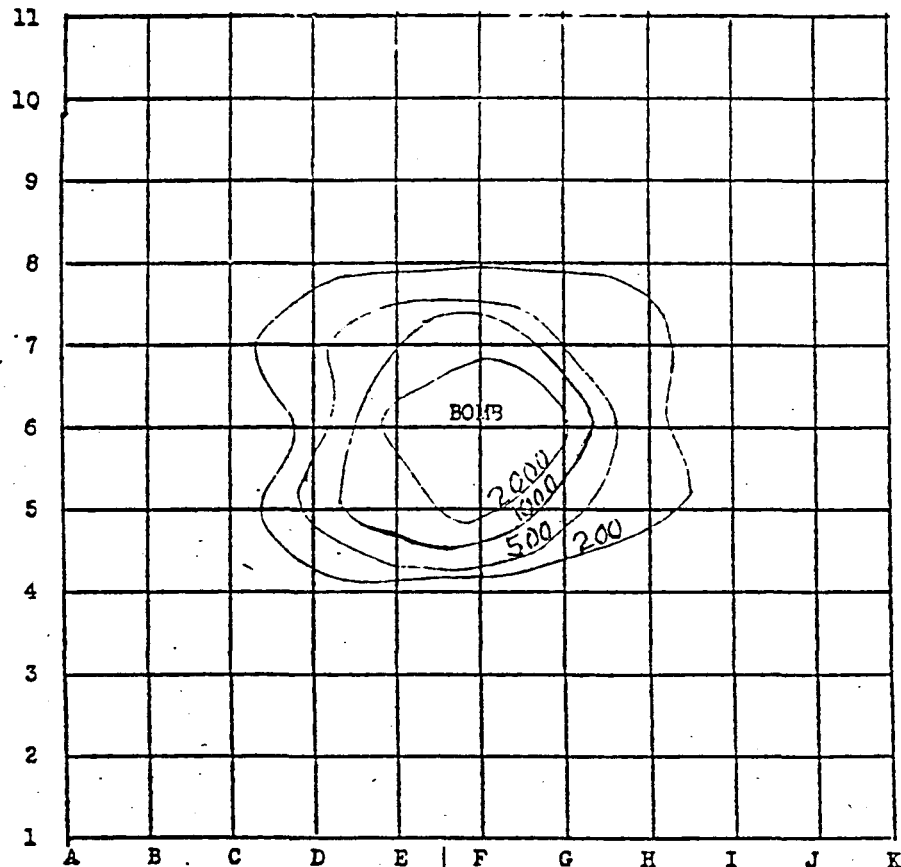
~~CANCELLED~~ ~~UNCLASSIFIED~~

SJP Report No. 136

Chart No. 2

0-15 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000
AND 2000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0911 Hours, 25 January 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.170
500	.096
1000	.064
2000	.032

Target Area #8

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = -0.5°C

(Neutral)

Wind Velocity: 4mph NNE

Temperature: 83.3°F

Relative Humidity: 54%

Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-57

lb. HD (dyed 0.25% DuPont

Oil Red) fired statically

in vertical position, nose

down, 7 in. below ground

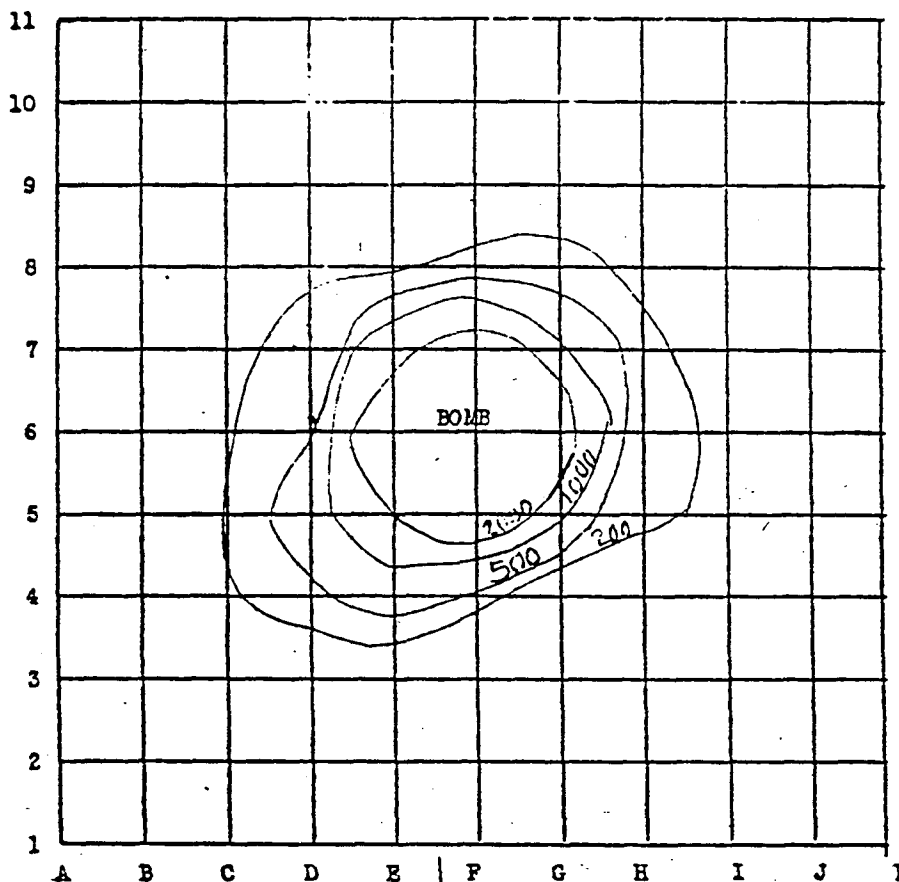
level.

SJP Report No. 136

Chart No. 3

0-60 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000
AND 2000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 09:1 Hours, 25 January 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.220
500	.132
1000	.088
2000	.048

Target Area #8
METEOROLOGICAL DATA:
 $T_{2.0M} - T_{0.1M} = 0.6^{\circ}C$
(Neutral)
Wind Velocity: 5 mph NNE
Temperature: $80.6^{\circ}F$
Relative Humidity: 75%
Precipitation: None

MUNITIONS DATA:
One M70 Bomb, filled 55-
57 lb. HD (dyed 0.25% Du-
Pont Oil: Red) fired
statically in vertical
position, nose down 7 in.
below ground level.

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L-4

SJP Report No. 136

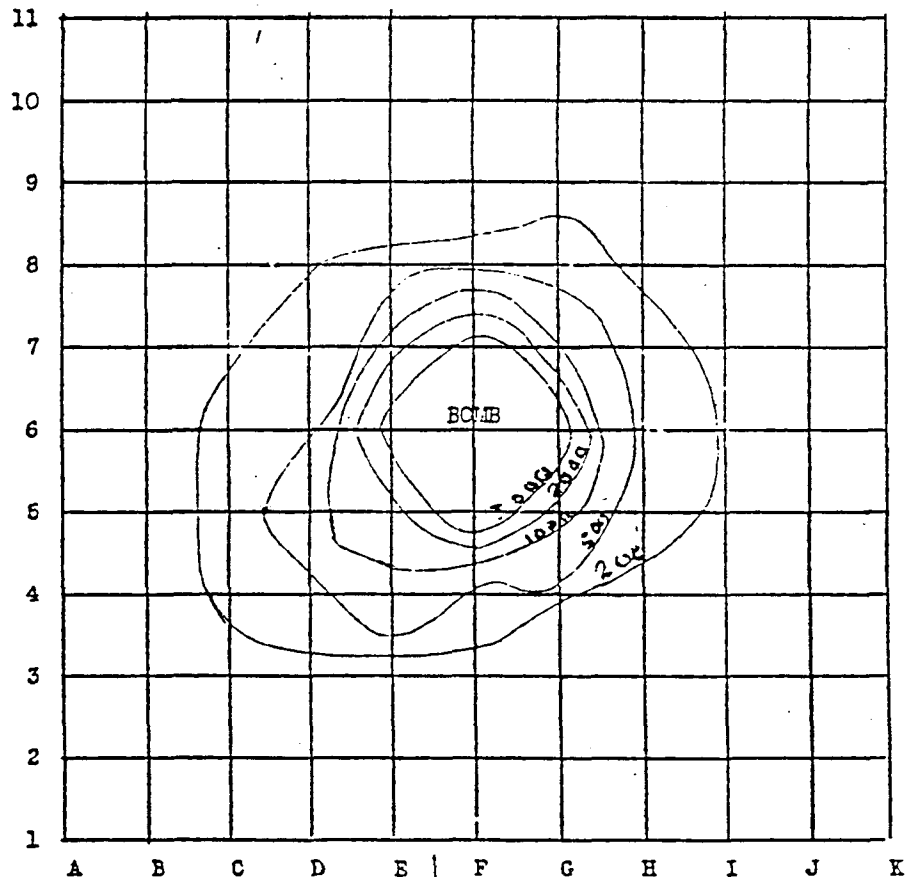
Chart No. 4

~~CANCELLED~~

UNGLAS

0-120 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000,
2000 AND 3000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0911 Hours, 25 January 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.268
500	.140
1000	.090
2000	.052
3000	.032

Target Area #8

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = -4.0^{\circ}C$
(Lapse)

Wind Velocity: 4 mph E

Temperature: $91.4^{\circ}F$

Relative Humidity: 73%

Precipitation: NONE

AMMUNITIONS DATA:

One M70 Bomb, filled 55-57

lb. HD (dyed 0.25% DuPont

Oil Red) fired statically

in vertical position, nose

down, 7 in. below ground

level.

~~CANCELLED~~

UNCLASSIFIED

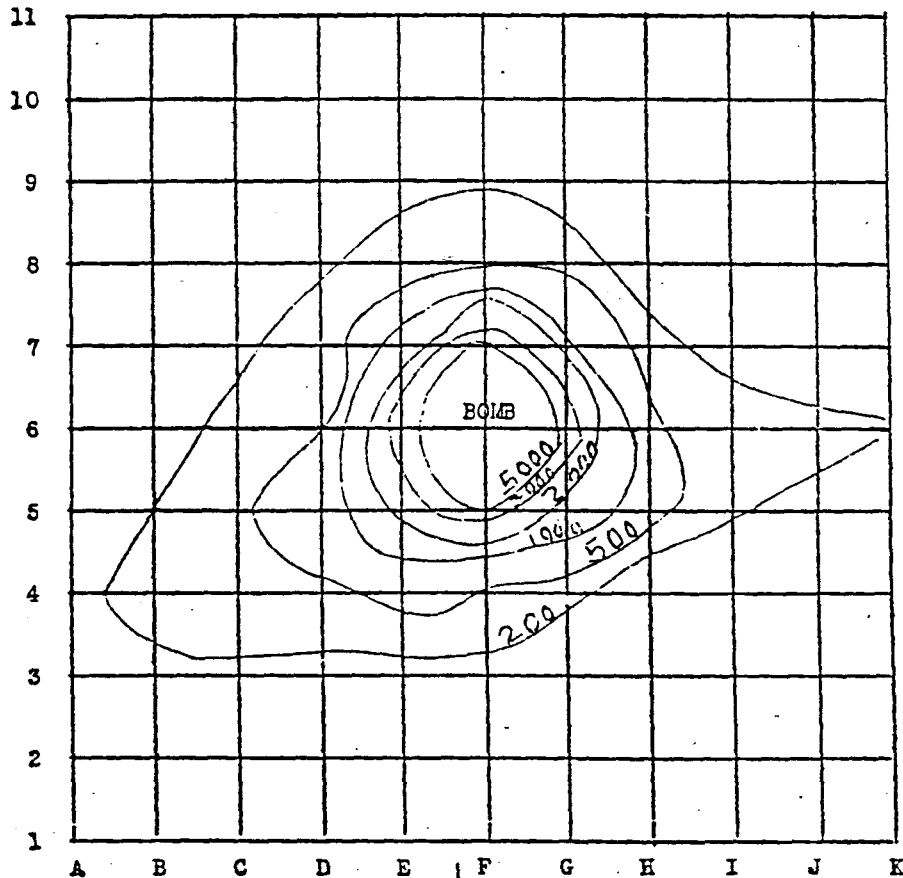
1-5

SJP Report No. 136

Chart No. 5

0-240 MINUTE HD VAPOR DOSAGES CONTOURS FOR 200, 500, 1000, 2000, 3000 AND 5000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0911 Hours, 25 January 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.308
500	.160
1000	.092
2000	.064
3000	.040
5000	.028

Target Area #8

METEOROLOGICAL DATA:
 $T_{2.0M} - T_{0.1M} = -6.0^{\circ}C$
 (Lapse)
 Wind Velocity: 3 mph E
 Temperature: $97^{\circ}F$
 Relative Humidity: 66%
 Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-57
 lb. HD (dyed 0.25% DuPont
 Oil Red) fired statically
 in vertical position, nose
 down, 7 in. below ground

CANCELLED

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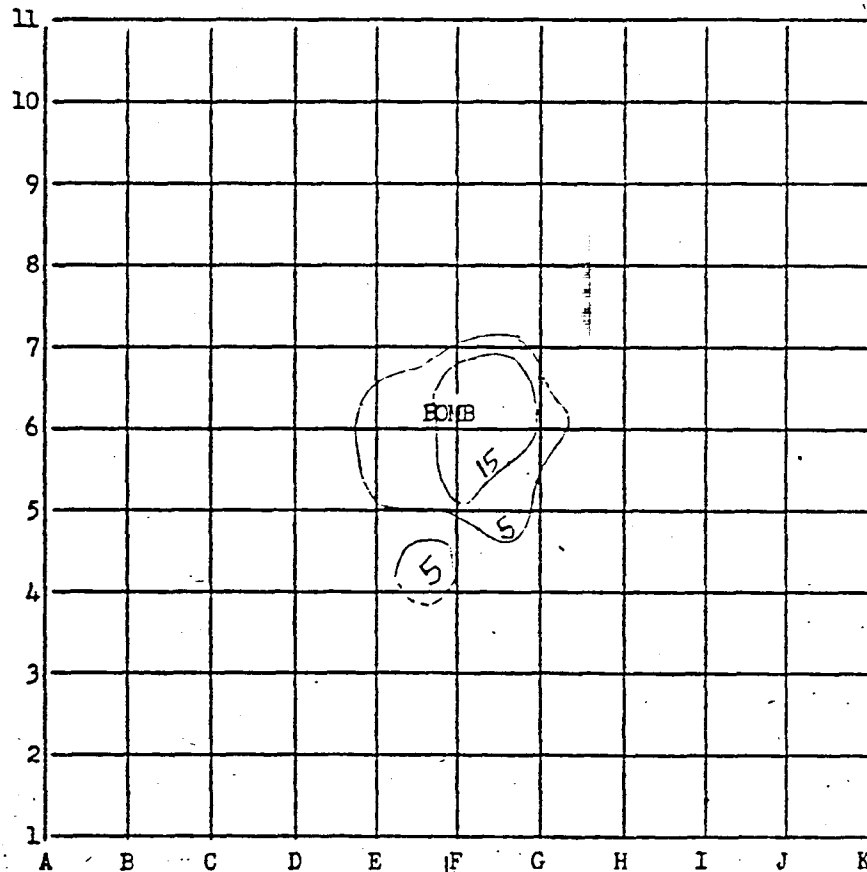
SJP Report No. 1

Chart No. 76

HD GROUND CONTAMINATION CONTOURS FOR 5 AND 15 DOSAGES
PRODUCED BY SINGLE M70 BOMB

Dosages in Grams per Square Meter

Burst Time: 0911 Hours, 25 January 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

DOSAGE

5
15

AREA

.046
.016

Target Area #8

METEOROLOGICAL DATA:

$T_{2.0K} - T_{0.1M} = -6.0^{\circ}C$
(Lapse)

Wind Velocity: 3 mph E
Temperature: 97°F

Relative Humidity: 58%
Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled 55-57
lb. HD (dyed 0.25% DuPont
Oil Red) fired statically
in vertical position, nose
down, 7 in. below ground
level.

~~CANCELLED~~

UNCLASSIFIED

(SJPR No. 136)

UNCLASSIFIED

APPENDIX N
CHARTS AND TABLES
(Phase 7)

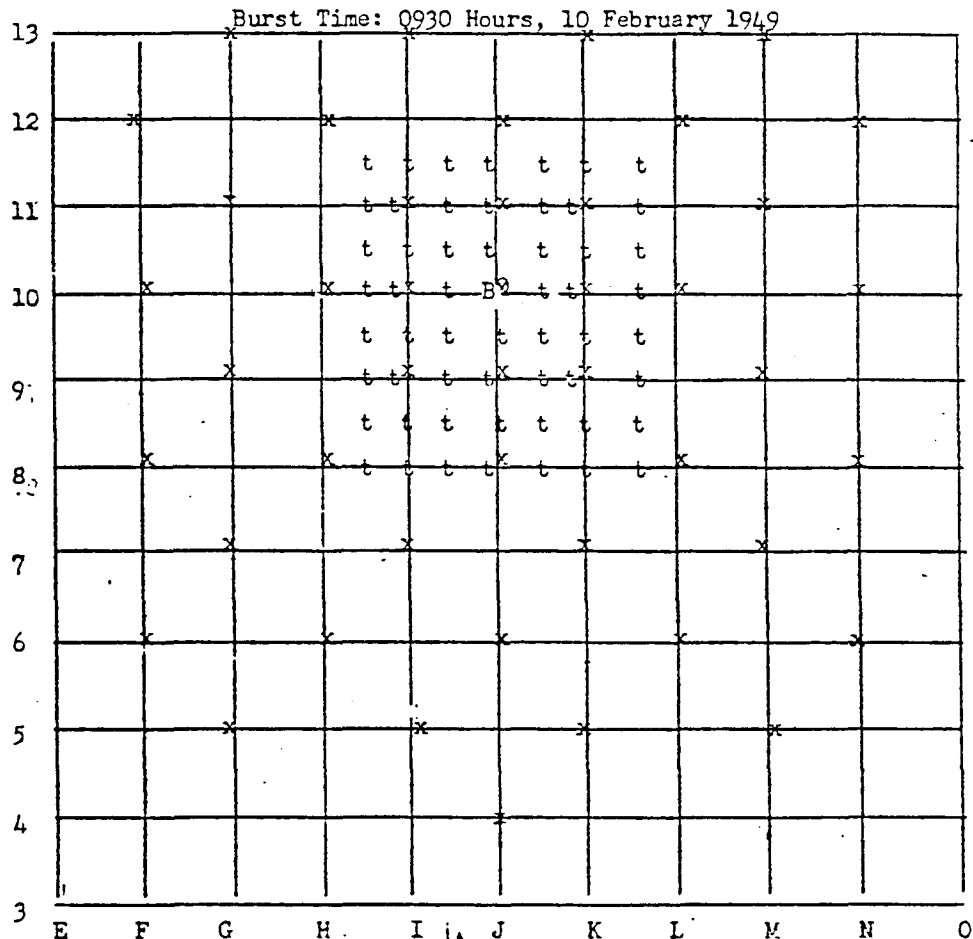
UNCLASSIFIED

SJP Report No. 136

Chart No. 1

Test Area Layout

UNCLASSIFIED



Target Area #6

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = -1.0°C

(Neutral)

Wind Velocity: 3 mph NNE

Temperature: 93.2°F

Relative Humidity: 82%

Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled
55-57 lb. HD (dyed 0.25%
DuPont Oil Red) fired
statically in vertical
position, nose down,
6in. below ground level.

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SJP Report No. 136

Table 1

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Meteorological Data

Time of Burst: 0930 Hours, 10 February 1949

Time	Soil	0.1m	0.3m	Temperatures °C				Wind		R.H.
				1.0m	2.0m	3.0m	4.0m	Dir	Speed	
0815	25.0	27.0	26.5	26.0	26.0	26.0	26.0	NNE	3	71%
0830	25.0	27.0	26.5	26.0	26.0	26.0	26.0	NNE	3	71
0845	25.4	27.2	26.8	26.6	26.2	26.0	26.0	NNE	3	71
0900	26.6	27.6	27.1	27.0	26.8	27.0	27.4	E	2	84
0915	28.6	28.4	28.2	28.2	28.0	27.4	27.6	NNE	3	84
0930	33.0	32.6	34.0	30.0	31.6	30.0	28.6	NNE	3	82
1000	34.0	33.2	34.6	30.2	31.6	30.2	28.8	NNE	4	76
1030	36.0	34.1	36.0	32.0	31.6	30.0	29.0	E	3	76
1100	36.1	34.1	36.6	32.0	32.0	30.0	29.6	NNE	4	82
1130	36.2	34.1	34.0	33.4	32.0	31.0	29.6	NNE	3	82
1200	36.6	34.2	34.2	30.1	33.0	30.1	28.8	NNE	2	79
1300	36.4	34.2	34.0	30.4	31.1	31.6	29.0	NNE	3	82.5
1400	36.4	33.8	34.2	32.4	32.0	32.0	30.6	E	2	82.5

The Meteorological Station was set up 30 yards NNW of the bomb burst. There was no precipitation during the test.

MUNITIONS DATA:

One M70 Bomb, filled 55-
57 lb. HD (dyed 0.25% Du-
Pont Oil Red) fired sta-
tically in vertical position,
nose down, 6 in. below
ground level.

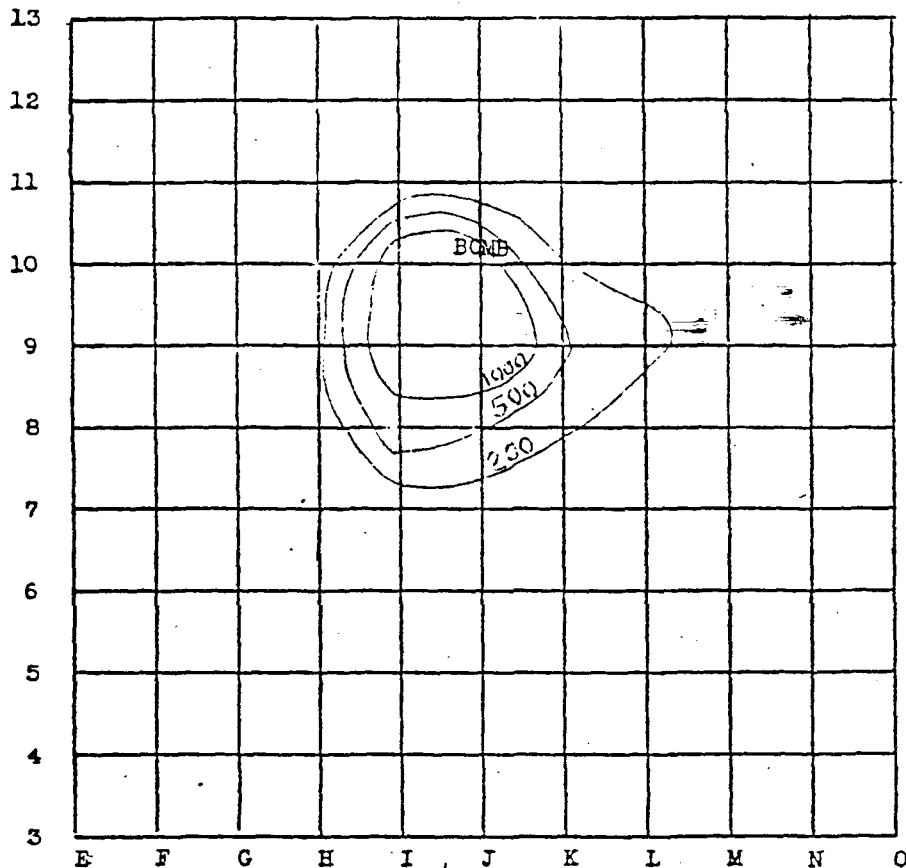
UNCLASSIFIED

N-2

SJP Report No. 136
Chart No. 2

0-15 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, AND 1000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0930 Hours, 10 February 1949



10 yds

Target Area #6

AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.100
500	.060
1000	.032

METEOROLOGICAL DATA:

T 2.0M -T 0.1M = -1.0°C
(Neutral)
Wind Velocity: 3 mph NNE
Temperature: 93.2°F
Relative Humidity: 80%
Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled
55-57 lb. HD (dyed
0.25% DuPont Oil Red)
fired statically in
vertical position,
nose down, 6 in. below
ground level.

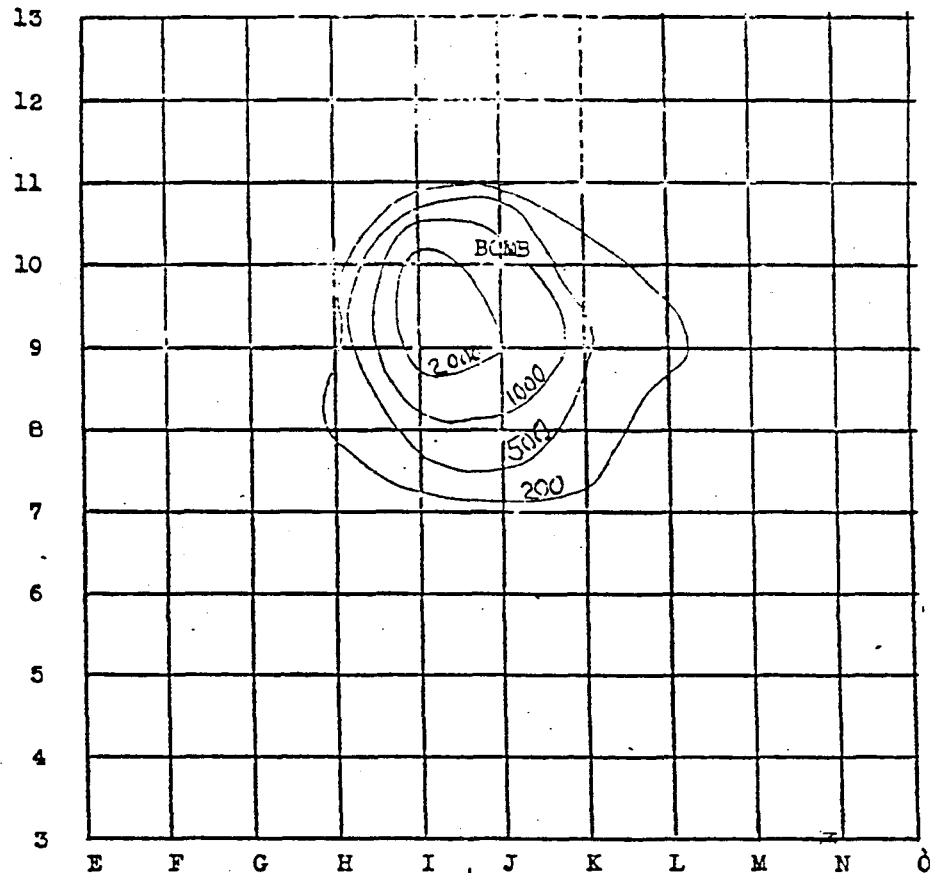
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SJP Report No. 136
Chart No. 3

0-60 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

UNCLASSIFIED

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0930 Hours, 10 February 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.128
500	.072
1000	.044
2000	.016

Target Area #6

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = -2.4^{\circ}C$
(Lapse)

Wind Velocity: 3 mph E

Temperature: $9^{\circ}F$

Relative Humidity: 76%

Precipitation: None

MUNITIONS DATA:

One M70 Bomb filled
55-57 lb. HD (dyed
0.25% DuPont Oil Red)
fired statically in
vertical position,
nose down, 6 in. below
ground level.

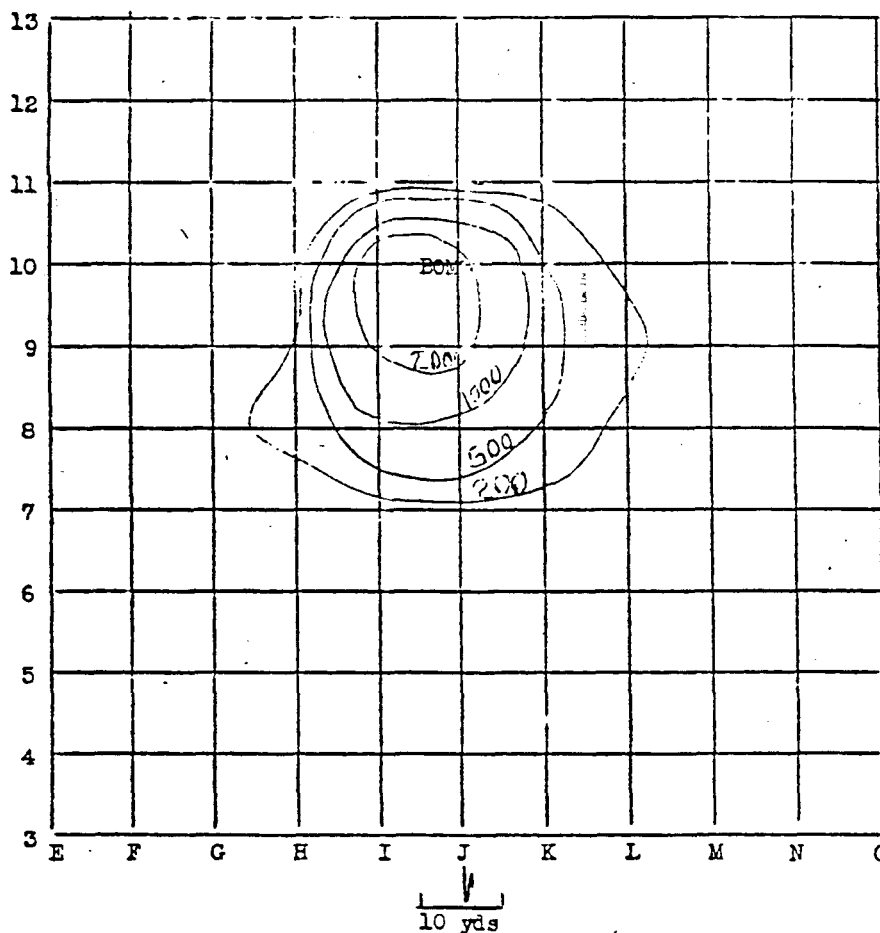
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SJP Report No. 136

Chart No. 4

0-120 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
 Dosages in Milligram Minutes per Cubic Meter
 Burst Time: 0930 Hours, 10 February 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.136
500	.084
1000	.052
2000	.020

Target Area #6
 METEOROLOGICAL DATA:
 $T_{2.0M} - T_{0.1M} = -2.0^{\circ}C$
 (Lapse)
 Wind Velocity: 3 mph NNE
 Temperature: $93.2^{\circ}F$
 Relative Humidity: 82%
 Precipitation: None

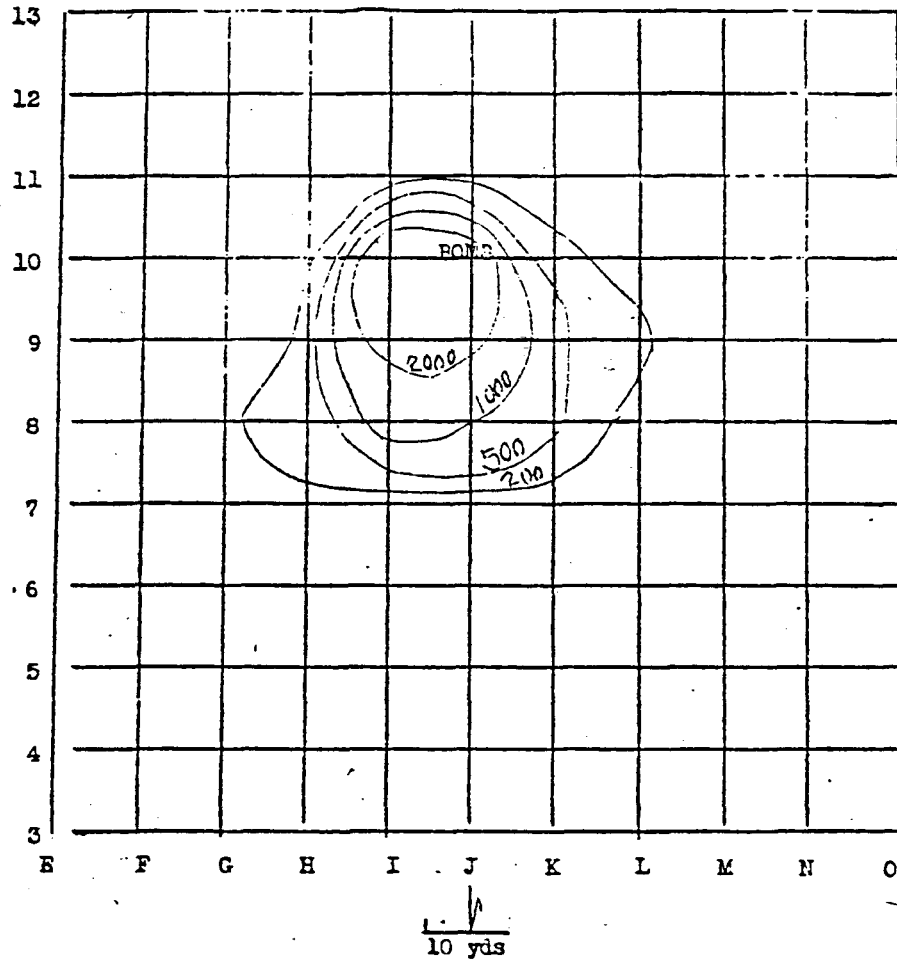
MUNITIONS DATA:
 One M70 Bomb filled
 55-57 lb. HD (aged
 0.25% DuPont Oil Rod)
 fired statically in
 vertical position,
 nose down, 6 in. below
 ground level.

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0-240 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000 AND 2000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
 Dosages in Milligram Minutes per Cubic Meter
 Burst Time: 0930 Hours, 13 February 1949

UNCLASSIFIED



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

CT	AREA
200	.138
500	.088
1000	.052
2000	.024

Target Area #6

METEOROLOGICAL DATA:

T 2.0M - T 0.1M - -2.6°C
 (Lapse)
 Wind Velocity: 3 mph NNE
 Temperature: 93.2°F
 Relative Humidity: 82.5 %
 Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled
 55-57 lb. HD (dyed
 0.25% DuPont Oil Red)
 fired statically in
 vertical position,
 nose down, 6 in. below
 ground level.

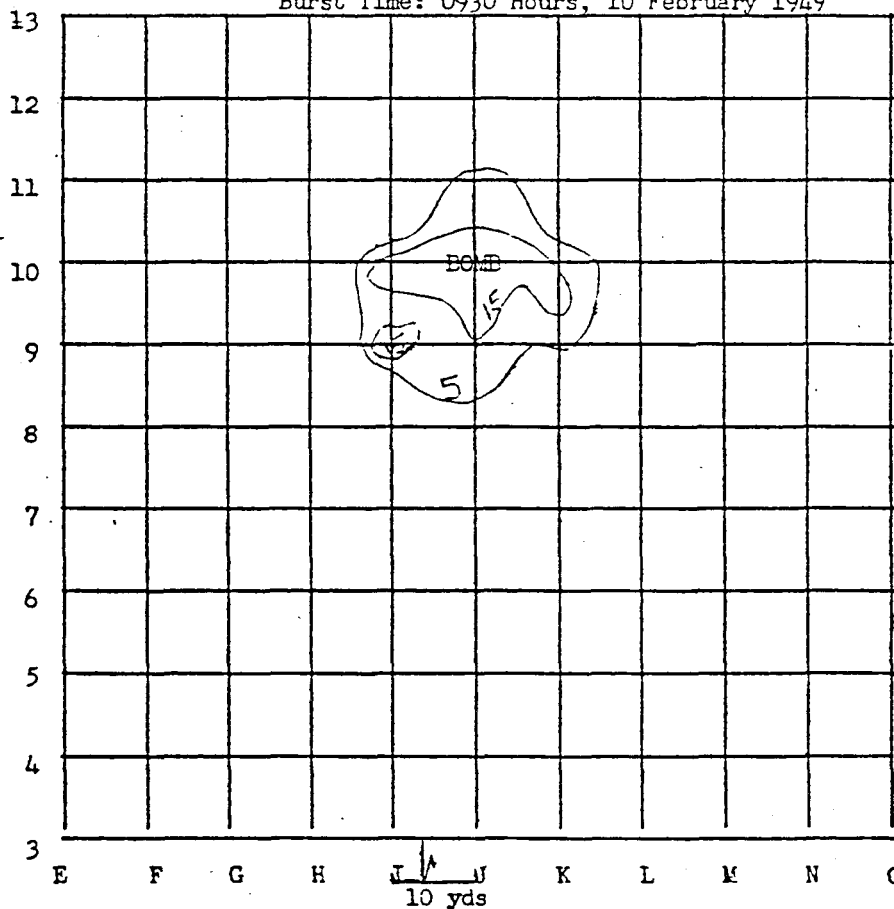
SJP Report No. 136

Chart No. 46

HD GROUND CONTAMINATION CONTOURS FOR 5 AND 15 DOSAGES
PRODUCED BY SINGLE M70 POMB

Dosages in Grams per Square Meter

Burst Time: 0930 Hours, 10 February 1949



Target Area #6

AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>DOSAGE</u>	<u>AREA</u>
5	.053
15	.022

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.1M} = -2.6°C
(Lapse)
Wind Velocity: 3 mph WNE
Temperature: 93.2°F
Relative Humidity: 82.5%
Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled
55-57 lb. HD (dyed
0.25% DuPont Oil Red
fired statically in
vertical position,
nose down, 6 in. be-
low ground level.

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(SJPR No. 136)

~~CANCELLED~~ UNCLASSIFIED

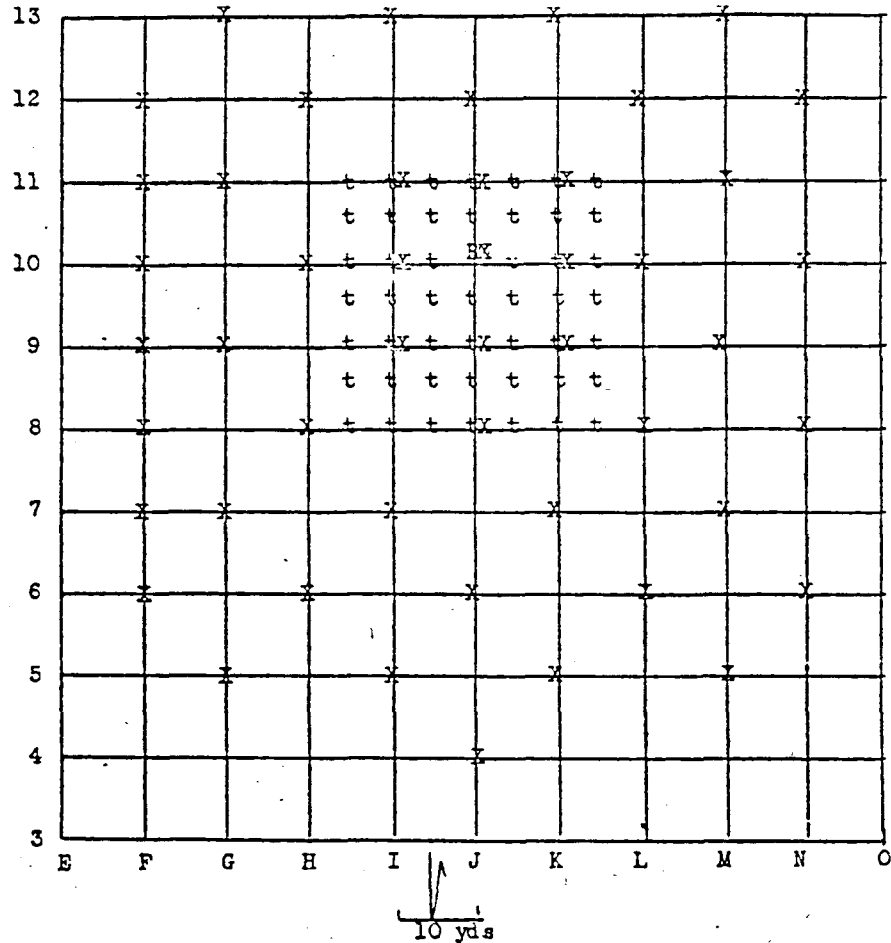
APPENDIX P
CHARTS AND TABLES
(Phase 8)

UNCLASSIFIED

SJP Report No. 136
Chart No. 1

Test Area Layout

Burst Time: 0925 Hours, 23 February 1949



X Mobile Sampling Unit
 X L&N Total Dosage Pumps
 t Tambourines
 B Bomb

Target Area #6

METEOROLOGICAL DATA:

T 2.0M -T 0.1M = -6°C
 (Lapse)
 Wind Velocity: 4 mph E
 Temperature: 86°F
 Relative Humidity: 66.5%
 Precipitation: None

MUNITIONS DATA:

One M70 Bomb, filled
 55-57 lb. HD (dyed
 0.25% DuPont Oil Red)
 fired statically in
 vertical position,
 nose down 6 in. below
 ground level.

UNCLASSIFIED

SJP Report No. 136

Table 1

Meteorological Data

Time of Burst: 0925 Hours, 23 February 1949

Time	Soil	Temperatures °C						Dir	Wind Speed	R.H.
		0.1M	0.3M	1.0M	2.0M	3.0M	4.0M			
0845	24.6	28.6	27.6	31.0	25.6	27.0	27.0	E	4	84
0900	24.0	31.0	29.6	33.0	26.6	27.6	27.6	E	3	84
0915	24.6	32.0	29.6	33.0	27.0	27.0	27.0	E	3	80
0930	25.0	33.0	30.0	23.6	27.0	27.0	27.0	E	4	66.5
1000	25.6	34.0	30.6	34.0	28.0	27.0	27.6	E	5	60.5
1030	27.0	34.0	30.6	34.0	28.0	27.6	27.6	NNE	3	85
1100	28.6	34.0	36.6	34.0	28.0	27.6	28.0	NNE	2	74
1130	32.0	34.0	30.8	34.0	28.6	27.6	27.8	E	3	59
1200	37.0	34.0	30.0	34.6	28.8	28.0	28.0	E	3	71
1300	32.0	34.0	32.0	32.0	29.0	29.0	29.0	E	3	67

The Meteorology Station was set up 30 yards NNW of the bomb burst.
There was no precipitation during the test.

MUNITIONS DATA:

One M70 Bomb, filled 55-57
lb. HD (dyed 0.25% DuPont
Oil Red) fired statically
in vertical position, nose
down, 6 in. below ground level.

P-2

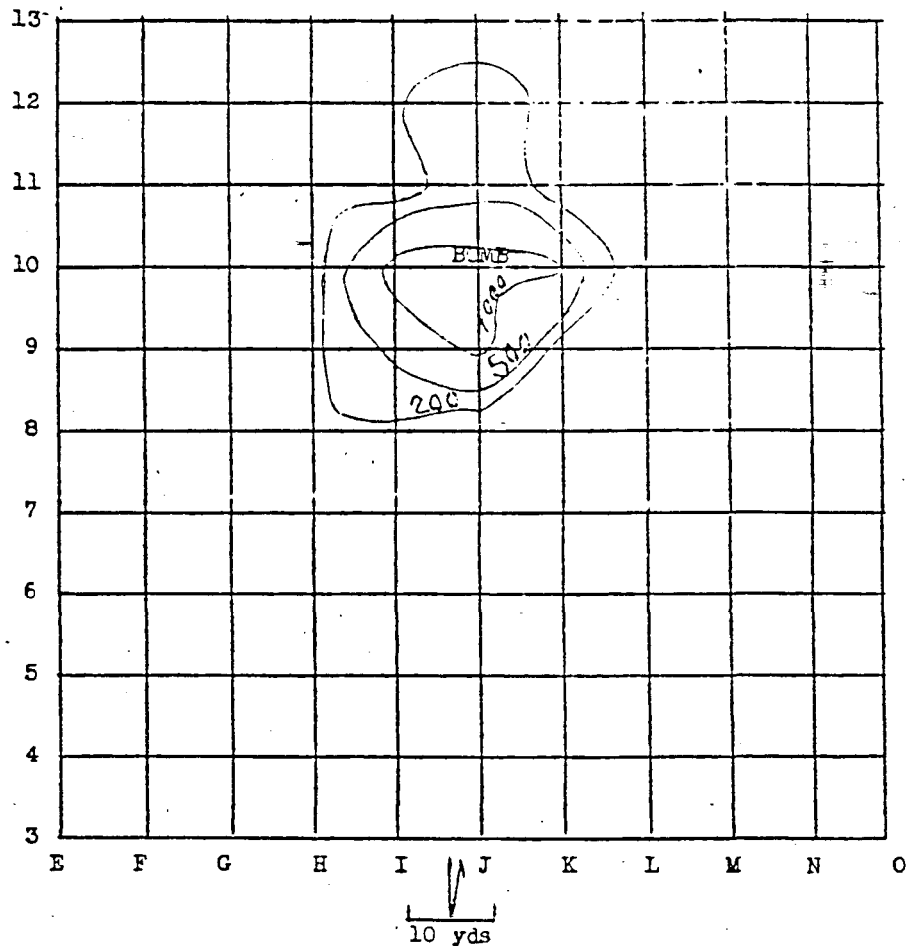
UNCLASSIFIED

SJP Report No

Chart No. 2

0-15 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500 AND 1000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0925 Hours, 23 February 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.096
500	.040
1000	.016

Target Area #6
METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = -6^{\circ}C$
(Lapse)
Wind Velocity: 4 mph E
Temperature: 86°F
Relative Humidity: 66.5%
Precipitation: None

MUNITIONS DATA:

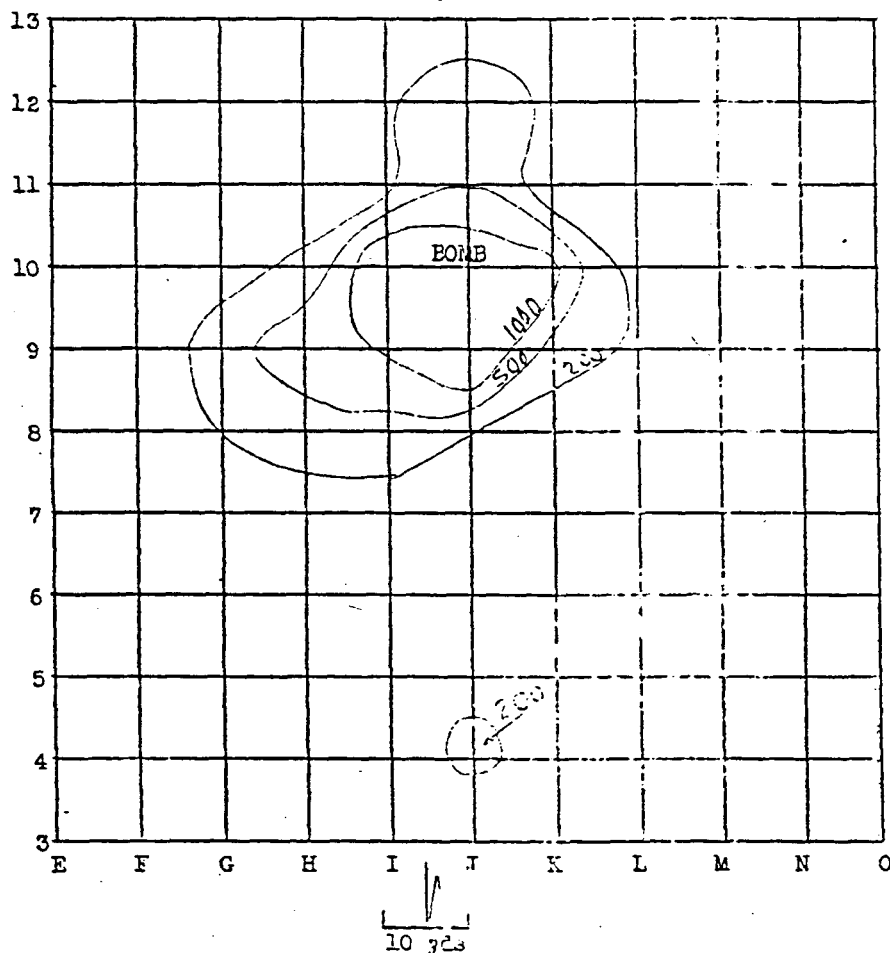
One M70 Bomb, filled 55-
57 Lb. HD (dyed 0.25%
DuPont Oil Red) fired
statically in vertical
position, nose down 6in.
below ground level.

UNCLASSIFIED

SJP Report No. 136
Chart No. 3

0-60 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500 AND 1000 CFS
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram minutes per Cubic Meter
Burst Time: 0925 Hours, 23 February 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.155
500	.072
1000	.036

Target Area #6

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = -6^{\circ}C$
(Lapse)
Wind Velocity: 5 mph NNE
Temperature: 60.6°F
Relative Humidity: 85%

MUNITIONS DATA:

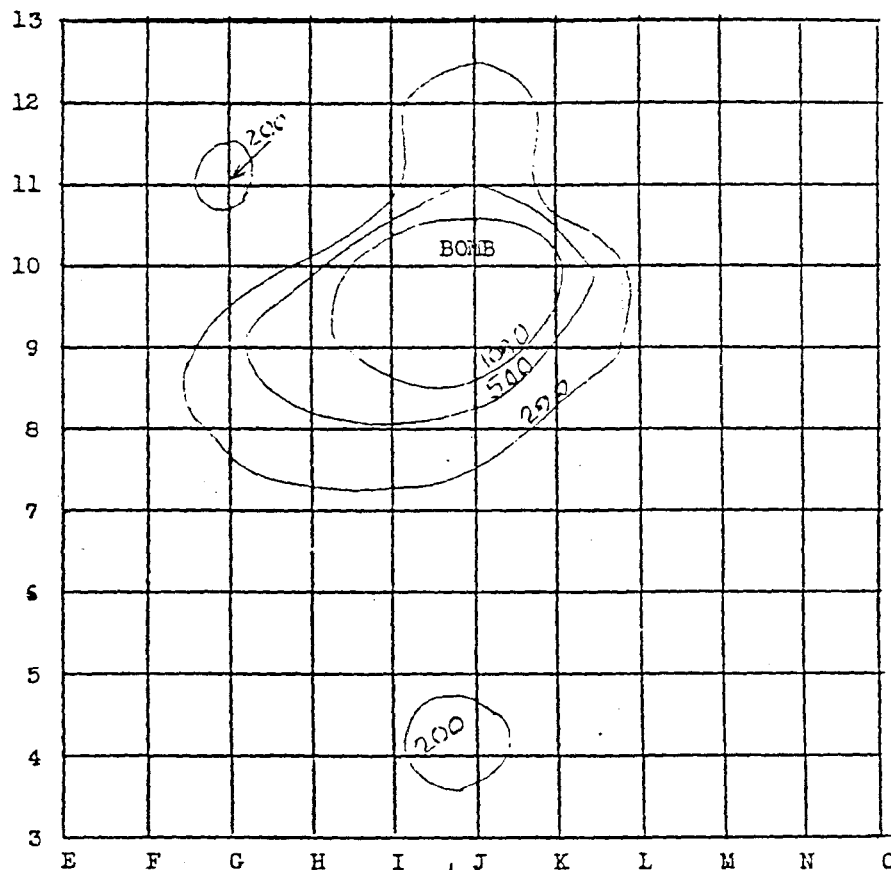
One M70 Bomb, filled 55-
57 lb HD (dyed 0.25% Du-
Pont Oil Red) fired
statically in vertical
position, nose down 6 in.
ground level.

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SJP Report No.
Chart No. 4

0-120 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500 AND 1000 CT'S
PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0925 Hours, 23 February 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>CT</u>	<u>AREA</u>
200	.176
500	.080
1000	.040

Target Area #6

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.1M} = -5^{\circ}C$
(Lapse)
Wind Velocity: 3 mph E
Temperature: 81.7°F
Relative Humidity: 59%
Precipitation: None

AMMUNITIONS DATA:

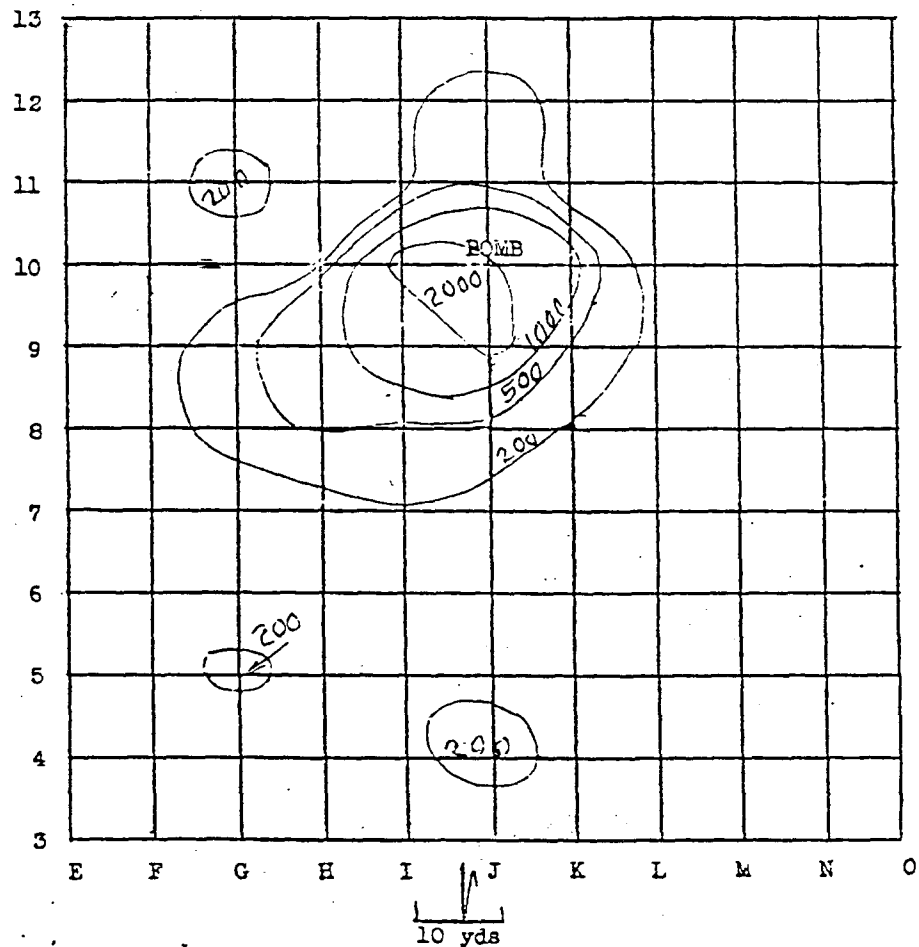
One M70 Bomb, filled 55-57 lb HD (dyed 0.25% DuPont Oil Red) fired statically in vertical position, nose down 6 in. below ground level.

UNCLASSIFIED

SJP Report No. 136
Chart No. 5

0-240 MINUTE HD VAPOR DOSAGE CONTOURS FOR 200, 500, 1000
AND 2000 CT'S PRODUCED BY SINGLE M70 BOMB

Eighteen Inch Sampling Height
Dosages in Milligram Minutes per Cubic Meter
Burst Time: 0925 Hours, 23 February 1949



Target Area #6
AREA IN ARTILLERY SQUARES METEOROLOGICAL DATA:
INCLOSED BY CONTOUR LINES $T_{2.0M} - T_{0.1M} = -5^{\circ}C$
(Lapse)

CT	AREA
200	.192
500	.084
1000	.048
2000	.012

Wind Velocity: 3 mph E
Temperature: 84.2°F
Relative Humidity: 67%
Pressure:
///

MUNITIONS DATA:

One M70 Bomb, filled 55-
57 lb. HD (dyed 0.25% Du-
Pont Oil Red) fired
statically in vertical
position, nose down, 6 in.
below ground level.

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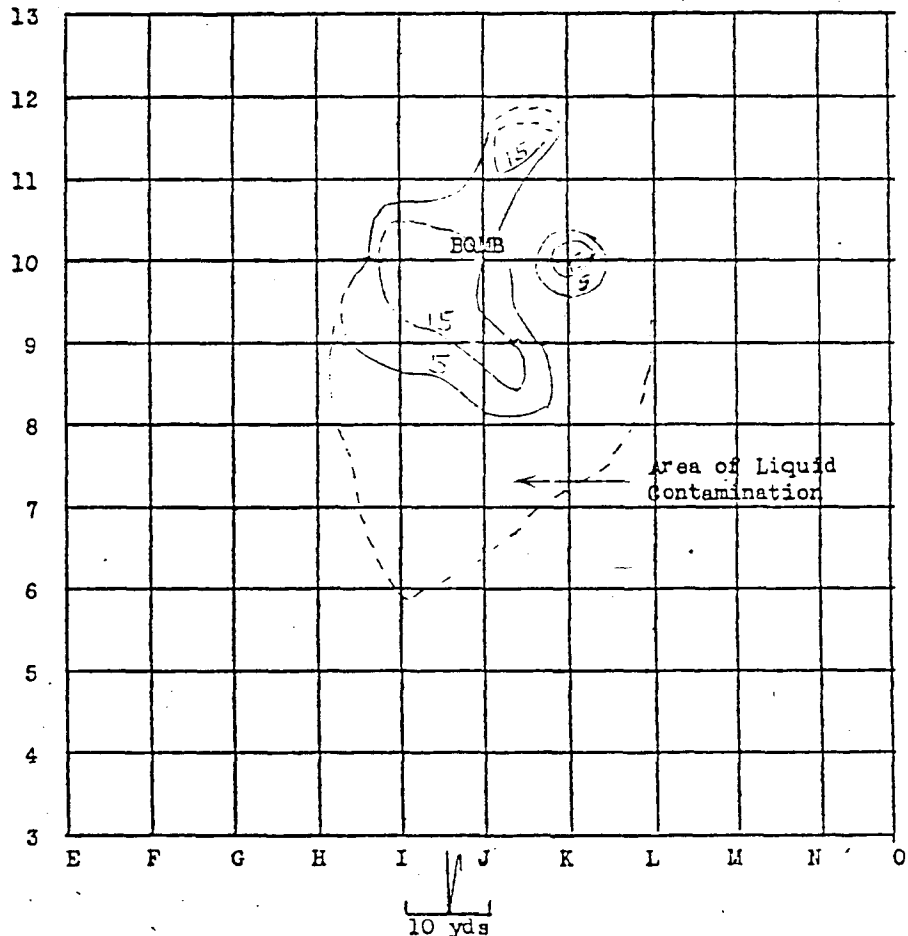
SJP Report No. 136

Chart No. 76

HD GROUND CONTAMINATION CONTOURS FOR 5 AND 15 DOSAGES
PRODUCED BY SINGLE M70 BOMB

Dosages in Grams per Square Meter

Burst Time: 0925 Hours, 23 February 1949



AREA IN ARTILLERY SQUARES
INCLOSED BY CONTOUR LINES

<u>DOSAGE</u>	<u>AREA</u>
5	.056
15	.024

Target Area #6

METEOROLOGICAL DATA:

T2.0M - T0.1M = -5°C

(Lapse)

Wind Velocity: 3 mph E

Temperature: 84.2°F

Relative Humidity: 67%

Precipitation: None

MUNITIONS DATA:

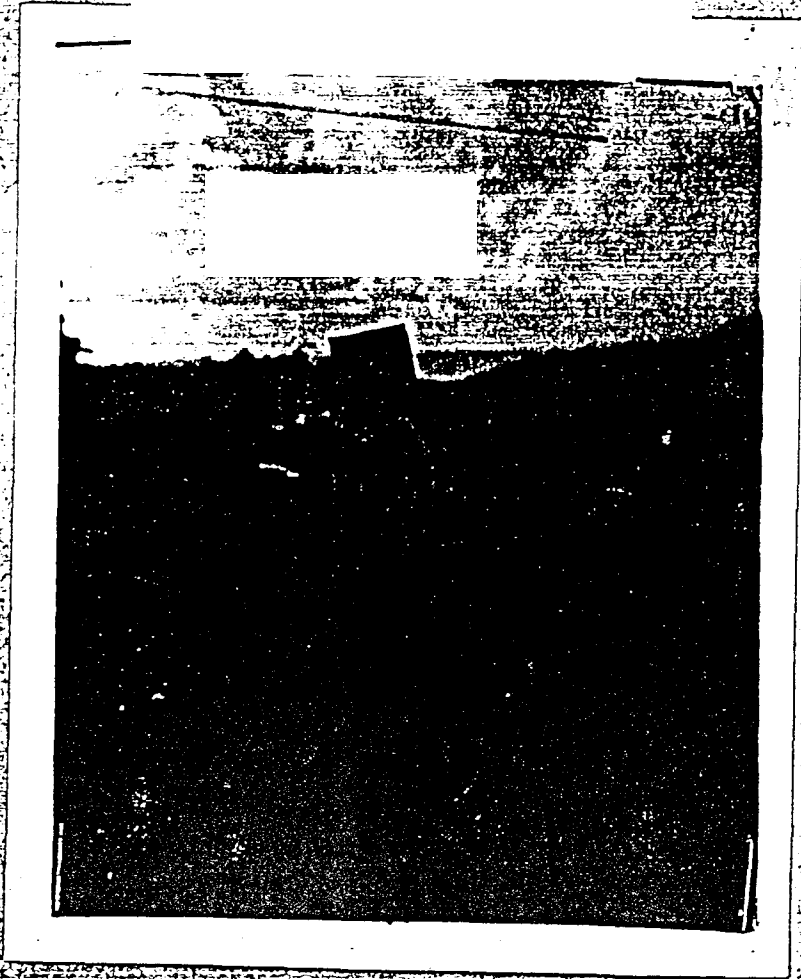
One M70 Bomb, filled 55-
57 lb. HD (dyed 0.25% Du-
Pont Oil Red) fired
statically in vertical
position, nose down, 6 in.
below ground level.

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(SJPR No. 136)

APPENDIX R
REPRESENTATIVE PHOTOGRAPHS

== CANCELLED == UNCLASSIFIED



Open area, onshore wind

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Wooded area, onshore wind

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Wooded area, onshore wind

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SAN JOSE PROJECT PROGRESS REPORT
NUMBER 176
STATIC TEST IN THE OPEN OF A SINGLE E23
SMOKE POT, HD FILLED

SEP 6 1949

HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

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REPORT NUMBER 176

STATIC TEST IN THE OPEN OF A SINGLE
E23 SMOKE POT, HD FILLED

by

Technical Staff, San Jose Project

Regraded

by authority of OCC conf C
9 Dec 1954

by

L. A. Walker JLT
Member Classified Documents Review Committee
CML & RAD LABS, A Cml C, Md.

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(SJFR No. 176)

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REPORT NUMBER 176

STATIC TEST IN THE OPEN OF A SINGLE

E23 SMOKE POT. HD FILLED

Submitted by:

Technical Staff
San Jose Project

Approved:

Speers G. Ponder
SPEERS G. PONDER
Major, Cml C
Technical Director

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(SJPR No. 176)

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STATIC TEST IN THE OPEN OF A SINGLE

E23 SMOKE POT, HD FILLED

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STATIC TEST IN THE OPEN OF A SINGLE

E23 SMOKE POT, HD FILLED

This test was performed in four phases during the period 27 July 1949 through 10 August 1949. As an additional phase, nine smoke pots were tested simultaneously on 15 August 1949 in an effort to determine the effectiveness of multiple burning. The same area and sampling layout were used in all phases.

In each of the first four phases, an E23 Smoke Pot, filled HD and dyed with Dupont oil red was burned statically in an open area, Test Area #4 on Water Island. Phases were conducted and repeated both in early morning and mid-morning to obtain desired conditions of lapse and inversion.

Burning times of the thirteen pots tested ranged from seven to twelve and one-half minutes. Functioning was in several instances erratic. On several occasions a considerable portion of the agent was left in the pot and it was not uncommon for a pot to swell noticeably from heat of burning. Overall efficiency ranged from 2.7% to 60%.

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REPORT NUMBER 176

STATIC TEST IN THE OPEN OF A SINGLE

E23 SMOKE POT, HD FILLED

1. AUTHORITY:

Letter, OCCmLC, CMLWR-P 400.112/118 S.J., Subject: Test Program for San Jose Project, dated 23 July 1948.

2. OBJECT:

To determine dosage field, rate of dosage achievement, total dosage, decomposition loss and overall efficiency for a single E23 Smoke Pot, HD filled, when fired statically in an open area.

3. REFERENCE AND HISTORY:

No previous tests of HD filled E23 Smoke Pots have been run at the San Jose Project.

4. SPECIAL CONDITIONS:

a. Reference letter dated 7 April 1949, from Chief, Proving Ground Section, Development Branch, Research and Engineering Division, pots used in this test were rejected by the Navy due to erratic burning characteristics.

b. There was no precipitation during any phase of the test.

c. The test was run during periods of reasonable wind velocities.

d. The test was conducted in four phases:

(1) Conducted and repeated in mid-morning to obtain lapse conditions.

(2) Conducted and repeated in early morning to obtain inversion conditions.

e. An additional phase was conducted by burning nine pots simultaneously under lapse conditions.

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5. PROCEDURE:

- a. Single E23 Smoke Pots, filled HD, dyed with Dupont oil red were burned statically on land in an open area. The Smoke Pots were placed in accordance with Diagram I of attached plan of test.

(1) Vapor assessment was accomplished by total dosage pumps and rotary distributors using Dugway and impinger bubblers. All samples were taken at a height of 12 inches and 66 inches at a flow rate of one liter per minute. Samples were collected in 10 cc of DEP. Method of analysis is described in Appendix I, Plan of Test No. 136.

(2) Vapor sampling was accomplished on a grid consisting of three arcs of circles with radii of 25, 50 and 75 yards located downwind from the E23 Smoke Pot. Sampling positions were spaced 5 yards apart on the arc of 25 yard radius, 10 yards apart on the arc of 50 yards radius and 15 yards apart on the arc of 75 yards radius. A detailed sampling diagram is included with the attached plan of test as Chart I.

(a) Sampling time for the L&N total dosage pump was zero to 20 minutes.

(b) Sampling times for the rotary distributors were:

1. Zero to two minutes
2. Two to four minutes
3. Four to six minutes
4. Six to eight minutes
5. Eight to ten minutes
6. Ten to twelve minutes
7. Twelve to twenty minutes

(3) Ground contamination was to be determined by visual inspection of jump cards, however, in an effort to arrive at a standard for visual estimate, tambourines were used in all phases and results obtained colorimetrically.

(4) For sampling diagram, see Chart I of attached plan of test.

- b. For the one multiple phase, nine E23 Smoke Pots, filled HD, dyed with Dupont oil red were burned statically on land in an open area. The Smoke Pots were placed in three rows on a grid two feet from center to center. Two additional rows of jump cards were placed downwind from the pots, otherwise sampling was accomplished in the same manner as for the single tests.

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c. Calculations

(1) Overall efficiency was calculated in the following manner:

Let V_s = volume of air actually sampled
 V_t = total volume of test sector
 n = number of times test sector volume is changed
due to wind velocity
 A_c = Agent actually collected in bubbler tubes
 A_e = Agent efficiently dispersed in area
 A_f = Weight of agent in pot as filling

then:

$$\frac{V_s}{n \cdot V_t} = \frac{A_c}{A_e} \quad \text{or} \quad A_e = \frac{A_c \cdot n \cdot V_t}{V_s}$$

$$\frac{A_e \times 100}{A_f} = \% \text{ Efficiency of munition}$$

(2) Decomposition loss was determined using the Volhard Method.

6. RESULTS:

a. Phase 1 - 0900 hours, 27 July 1949 - Lapse Temperature Gradient,
Average Wind Speed - 8 mph

- (1) Burning time: 12.5 minutes
- (2) Decomposition loss: Readings below range of Volhard Method,
and decomposition could not be calculated
- (3) Overall efficiency: 2.7%
- (4) There were 3800 cc of agent remaining in the pot after
burning.
- (5) The pot burned for approximately five minutes before any
agent was dispersed.

b. Phase 2 - 0903 hours, 2 August 1949 - Neutral Temperature Gradient,
Average Wind Speed - 7.6 mph

- (1) Burning time: 7 minutes
- (2) Decomposition loss: Readings below range of Volhard Method,
and decomposition could not be calculated
- (3) Overall efficiency: 54.0%
- (4) Bottom of pot swelled noticeably from the heat

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6. RESULTS: (Cont'd)

- c. Phase 3 - 0505 hours, 5 August 1949 - Neutral Temperature Gradient, Average Wind Speed - 6.7 mph
 - (1) Burning time: - 9.5 minutes
 - (2) Decomposition loss: See page D-8, Appendix D
 - (3) Overall efficiency: 27.1%
 - (4) The bottom of the pot swelled noticeably from the heat.
- d. Phase 4 - 0500 hours, 10 August 1949 - Neutral Temperature Gradient - Average Wind Speed - 6.7 mph
 - (1) Burning time: 9.3 minutes
 - (2) Decomposition loss: See page E-8, Appendix E
 - (3) Overall efficiency: 60%
 - (4) All of the agent was dispersed in the first 7 minutes of burning
- e. Phase 5 - 0908 hours, 15 August 1949 - Lapse Temperature Gradient - Average Wind Speed - 7 mph
 - (1) Burning time: 7½ to 11 minutes, average - 10 minutes
 - (2) Decomposition loss: See page F-8, Appendix F
 - (3) Overall efficiency: 10.95%
 - (4) The nine pots were placed, three to a row, on a grid 2 feet center to center
 - (5) Two rows of jump cards were added downwind
 - (6) There were 2400 cc of agent left in one of the pots.

7. CONCLUSIONS:

Due to the fact that the pots used in this test were rejects and erratic functioning could be expected, no conclusions will be drawn.

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APPENDIX A

PLAN OF TEST

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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

2 March 1949

PLAN OF TEST NUMBER 176

STATIC TEST IN THE OPEN OF A SINGLE

E23 SMOKE POT HD FILLED

1. AUTHORITY:

Letter, CCCmLC, CMLWR-P 400.112/118 S.J., Subject: Test Program for San Jose Project, dated 23 July 1948.

2. OBJECT:

To determine dosage field, rate of dosage achievement, total dosage, decomposition loss, and overall efficiency for a single E23 Smoke Pot, HD Filled, when fired statically in an open area.

3. REFERENCE AND HISTORY:

No tests of HD filled E23 Smoke Pots have been run at San Jose Project.

4. SPECIAL CONDITIONS:

- a. There should be no precipitation during the test.
- b. Wind velocity should be less than 7 miles per hour in the target area during the test.
- c. Test will be conducted in two phases:
 - (1) Test will be conducted and repeated under lapse conditions.
 - (2) Test will be conducted and repeated under inversion or neutral conditions.

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5. PROCEDURE:

- a. A single E23 Smoke Pot, HD Filled, dyed 0.25% Dupont oil red, will be fired statically on land in an open area. The Smoke Pot will be placed in accordance with diagram I.

- (1) Vapor assessment will be accomplished by total dosage pumps and rotary distributors, using a Dugway bubbler and an impinger bubbler in parallel at each sampling position and at each sampling height. All samples will be taken at a height of 12 inches and 66 inches at a flow rate of one liter per minute. Samples will be collected in 10 cc of Skat. The method of analysis described in Appendix I, Plan of Test No. 136 will be used.
- (2) Vapor sampling will be accomplished on a grid consisting of three arcs of circles with radii of 25 yards, 50 yards, and 75 yards located downwind from the E23 smoke pot. Sampling positions will be spaced 5 yards apart on the arc with 25 yard radius; 10 yards apart on arc with 50 yard radius; and 15 yards apart on arc with 75 yard radius. Five consecutive sampling positions directly downwind of the E23 Smoke Pot on each of the three arcs will consist of a rotary distributor, L&N Total Dosage pump and bubblers; all other sampling positions will consist of L&N Total Dosage pump and bubblers. Dugway bubblers and impinger bubblers will be operated in parallel on all sampling positions. For detailed Chemical Sampling Diagram, see Chart I.

(a) Sampling time for L&N Total Dosage Pumps:

1. Zero to 20 minutes

(b) Sampling time for Rotary Distributors:

1. Zero to two minutes.
2. Two minutes to four minutes.
3. Four minutes to six minutes.
4. Six minutes to eight minutes
5. Eight minutes to ten minutes.
6. Ten minutes to twelve minutes.
7. Twelve minutes to twenty minutes.

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5. PROCEDURE: (Cont'd)

- (3) Ground contamination (if any) and area of ground contamination will be determined by visual inspection of jump cards. The jump cards will be placed on a two yard grid, over an area 10 yards by 10 yards, with the E23 Smoke Pot in the center of the grid.

- (4) For sampling diagram, see Chart I.

6. LOCATION:

Test will be run on Water Island.

7. TIME:

As soon as all necessary equipment is available.

8. REPORT:

The report will be forwarded to Army Chemical Center, Research and Engineering Division.

9. SERVICES AND EQUIPMENT:

a. Safety Section.

- (1) Will enforce safety regulations and provide safety point.
- (2) Will provide protective clothing and equipment as needed.

b. Range Section.

- (1) Will lay out test area.

c. Chemical Test Section.

(1) Laboratory Group.

- (a) Will analyze all samples.

(b) Will furnish:

1. 35 jump cards.
2. 242 Dugway bubblers charged Skat.
3. 242 Impinger bubblers charged Skat.

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(SJPPT No. 176)

9. SERVICES AND EQUIPMENT:

(2) Field Sampling Group.

(a) Will provide personnel for operating and servicing sampling equipment.

(b) Will provide:

1. 15 rotary distributors.
2. 62 L&N Total Dosage Pumps.

d. Munitions and Weapons Section:

(1) Will furnish, emplace and fire a single E23 Smoke Pot charged HD.

e. Physiological Section.

(1) No function.

f. Photographic and Graphic Arts Section.

(1) Will take photographs of setup prior to firing of munition. Motion pictures will be taken of the functioning munition (approximately 10 minutes).

g. Meteorological Section.

(1) Will collect meteorological data at 15 minute intervals beginning one hour before the test and at 5 minute intervals during the test.

(2) The following data will be collected:

- (a) Wind velocity and direction at 2 m.
- (b) Surface temperature.
- (c) Air temperature at 1 m.
- (d) Vertical temperature gradient (2 m - 0.3 m)
- (e) Relative humidity.
- (f) Cloud coverage of sky (tenths).

h. Transportation Officer.

(1) Will furnish necessary land and water transportation.

(2) Will furnish necessary water patrol.

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9. SERVICES AND EQUIPMENT: (Cont'd)

i. Ration Officer.

(1) Will furnish meals as requested by Test Officer.

j. Surgeon.

(1) Will furnish aid man 30 minutes prior to test time until such time as released by Test Officer.

k. Communications Officer.

(1) Will provide necessary communications.

l. Guard Section.

(1) Will furnish guards as requested.

m. Test Officers.

(1) Major Kenneth W. Copeland and Captain Luke H. West.

Kenneth W. Copeland
KENNETH W. COPELAND
Major, Cml C
Test Officer

APPROVED:

Jay S. Stockhardt
JAY S. STOCKHARDT
Captain, Cml C
Deputy Technical Director

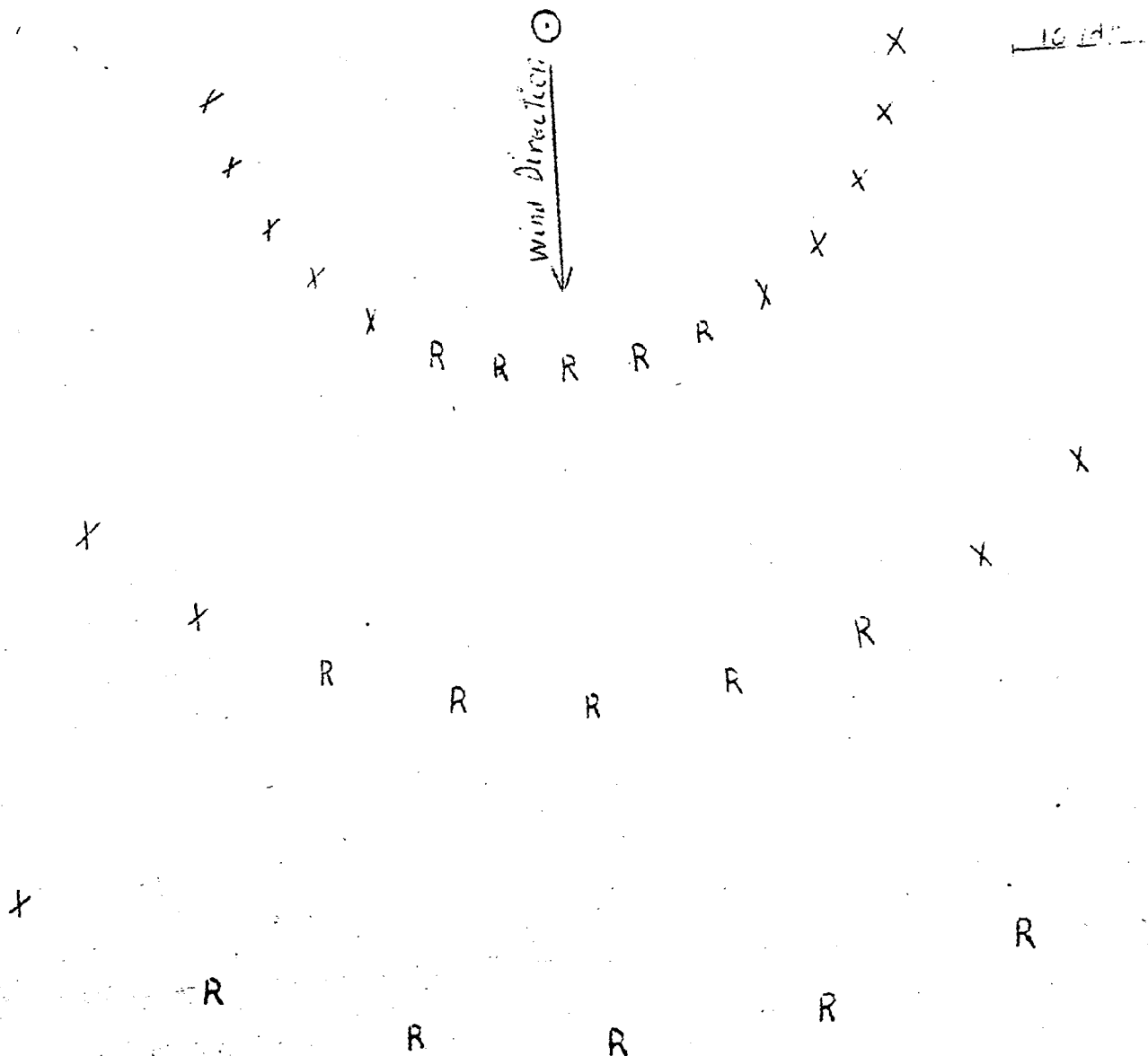
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(SJPFT No. 176)

Chemical Sampling Diagram



- O - E23 Smokepot HD Filled
- R - Rotary Samples 12" and 66" heights
- X - Total Dosage Pumps, 12" and 66" height

CHART I

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HEADQUARTERS, SAN JOSE PROJECT
Office of the Technical Director
St. Thomas, Virgin Islands

26 April 1949

AMENDMENT TO
PLAN OF TEST NUMBER 176
STATIC TEST IN THE OPEN OF A SINGLE
E23 SMOKE POT, HD FILLED

1. Par 4 b of Plan of Test No. 176 is rescinded and the following substituted in lieu thereof:

Test may be run at any reasonable wind velocity.

2. Par 5 a (1) is rescinded and the following substituted in lieu thereof:

Vapor assessment will be accomplished by total dosage pumps and rotary samplers, using two impinger bubblers in parallel at each sampling position and each sampling height. All samples will be taken at a height of 12 inches and 66 inches at a flow rate of one liter per minute. One of each pair of bubblers will contain 10 ml of 2% NaOH solution, and the other bubbler will contain 20 ml of diethyl phthalate. The NaOH will be analyzed for total chloride by the turbidometric or Volhard method, depending on the quantity of chloride present. The diethyl phthalate will be analyzed by the standard DB3 method. A comparison of results is expected to indicate the decomposition occurring.

3. Par 9 c (1)(b) is amended to read as follows.

1. 35 jump cards
2. 242 impinger bubblers charged NaOH
3. 242 impinger bubblers charged diethyl phthalate

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APPENDIX B

RESULTS OF PHASE 1

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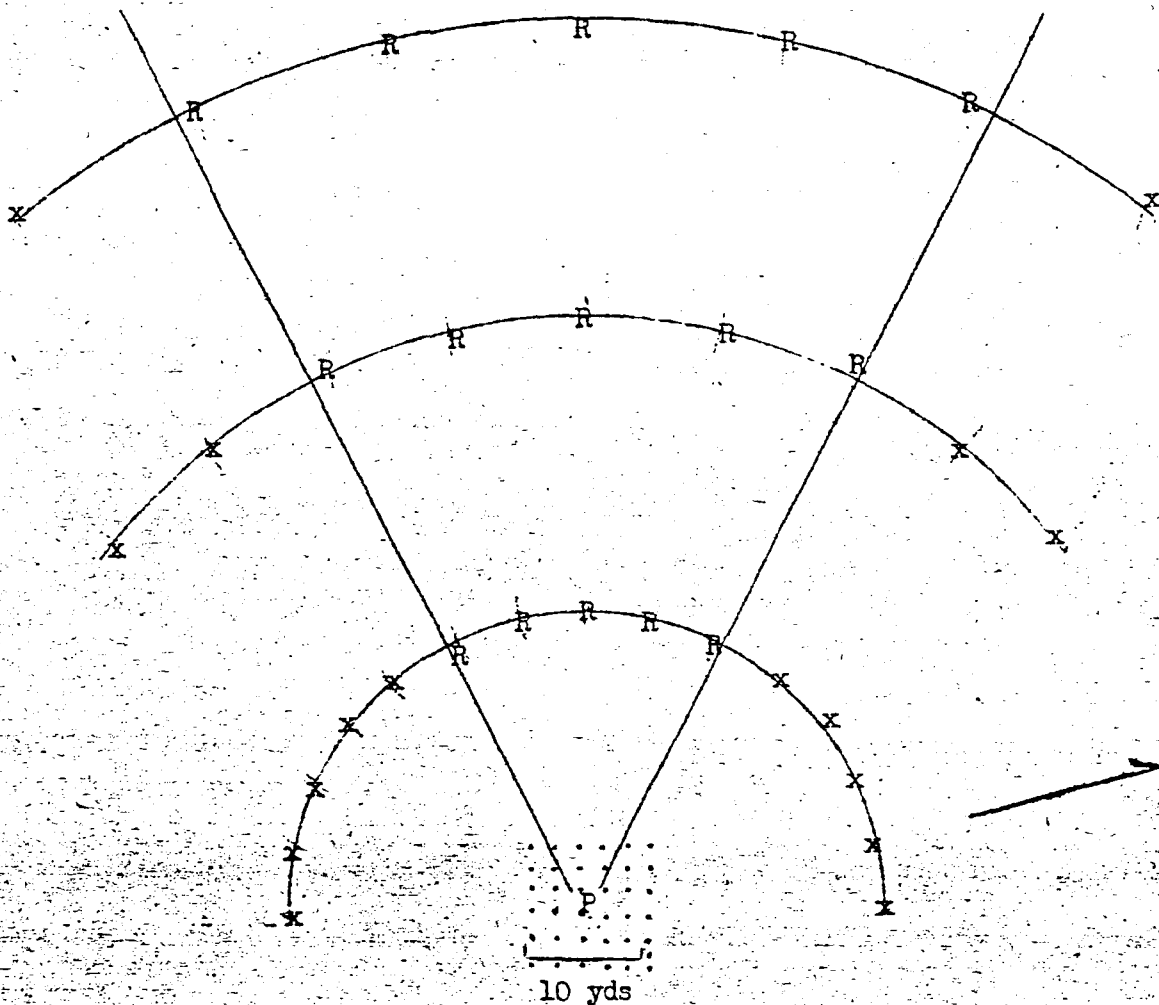
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Chart No. 1B

Test Area Layout

Time of Test: 0900 Hours, 27 July 1949

Burning Time: 12.5 minutes



Test Area #4

- P - E23 Smoke Pot
- R - Rotary Sampler
- x - Total Dosage Pump
- Jump Card

METEOROLOGICAL DATA: F

$T_{2.0M} - T_{0.3M} = 0.9^{\circ}C$
(Neutral)
Wind Velocity: 8mph ENE
Temperature: $86^{\circ}F$
Relative Humidity: 76%
Precipitation: None

MUNITIONS DATA:

M-5, Mod 1, EA-48,
Lot No. 4847-65-1
One E23 Smoke Pot,
filled 18.6 lbs. HD
(dyed 0.25% Du Pont
Oil Red) statically
fired in open

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Time of Test: 0900 Hours, 27 July 1948

Burning Time: 12.5 minutes

Time	Soil	Temperature, °C				Wind		R.H.	Cloud Coverage
		0.1m	0.3m	1.0m	2.0m	Dir	Speed		
0815	29.0	30.0	30.0	29.0	29.5	ESE	10MPH	71%	.6
0830	28.0	30.0	29.0	29.0	29.5	ESE	8	76	.7
0845	29.0	33.0	33.0	29.5	29.5	ESE	8	76	.5
0900	28.5	30.2	28.6	30.0	29.5	ENE	8	76	.8
0905	29.0	30.0	28.5	28.5	30.0	E	6	73	.9
0910	29.0	30.7	31.5	29.0	29.0	E	10	73	.9
0915	29.0	30.6	30.5	29.0	28.5	E	9	80	.9
0920	29.0	30.4	31.0	29.5	29.0	E	10	76	.8

The Meteorology Station was set up 35 yards north of the smoke pot.

There was a trace of rain at 0915.

MUNITIONS DATA:

One E23 Smoke Pot, E-5, Mod. 1,
EA6-48, Lot No. 4847-65-1, filled
18.6 lbs. HD (dyed 0.25% DuPont Oil
Red) statically fired in open.

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HD VAPOR DOSAGE PR

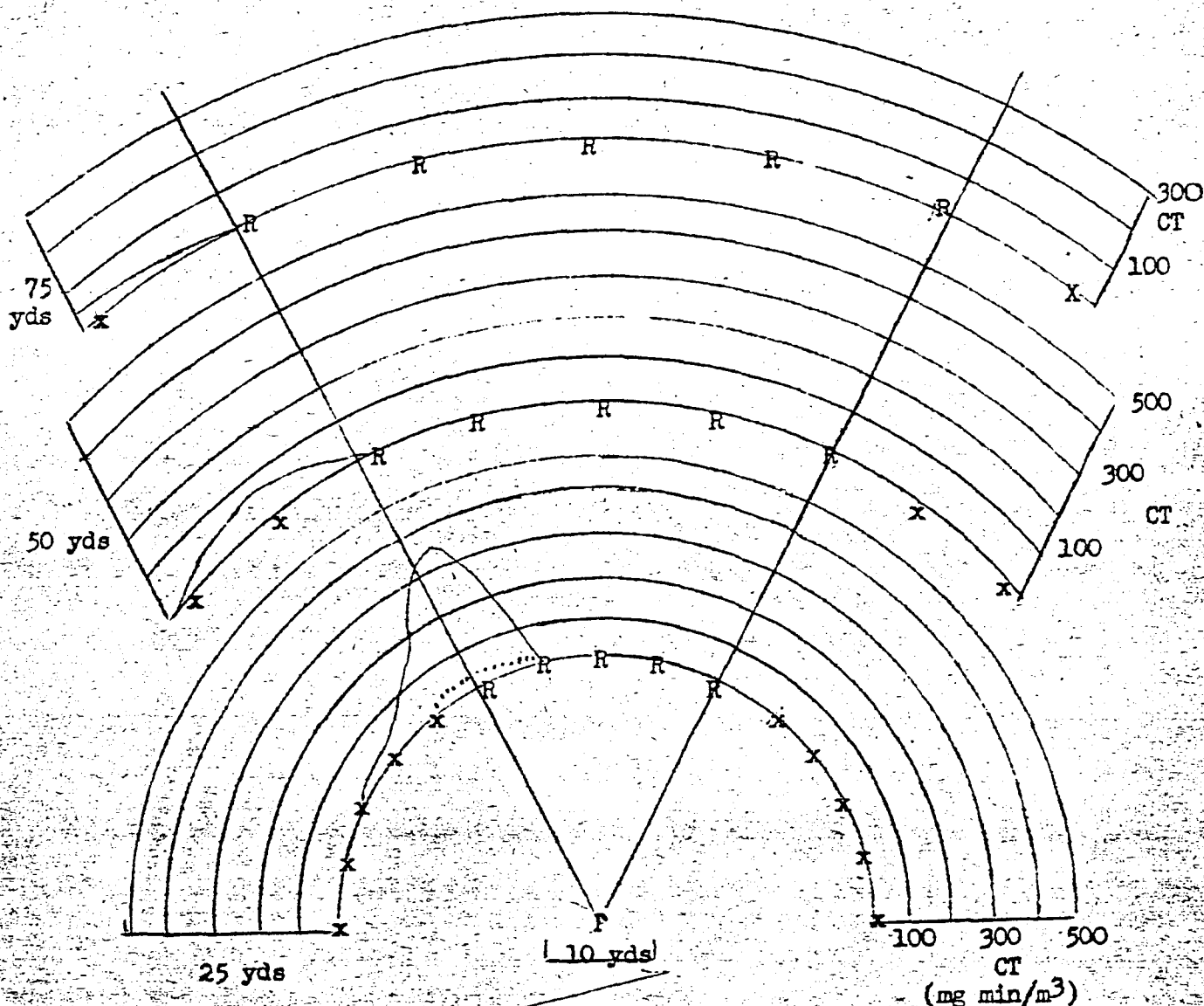
POT

Twelve Inch Sampling Height

Time of Test: 0900 Hours, 27 July 1949

Burning Time: 12.5 minutes

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Test Area #4

- P - E23 Smoke Pot
- R - Rotary Sampler
- x - Total Dosage Pump
- - 0-2 minutes
- - 0-20 minutes

METEOROLOGICAL DATA:

T_{2.0M-T0.3M} = -2.5°C
(Lapse)
Wind Velocity: 10mph E
Temperature: 84.2°F

MUNITIONS DATA:

One E23 Smoke Pot,
M-5, Mod. 1, EA6-48,
Lot No. 4847-65-1,
filled 18.6 lbs. HD
(dye 0.25% DuPont Oil
Red) stationary
in open.

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SJP Report No. 176

Chart No. 32

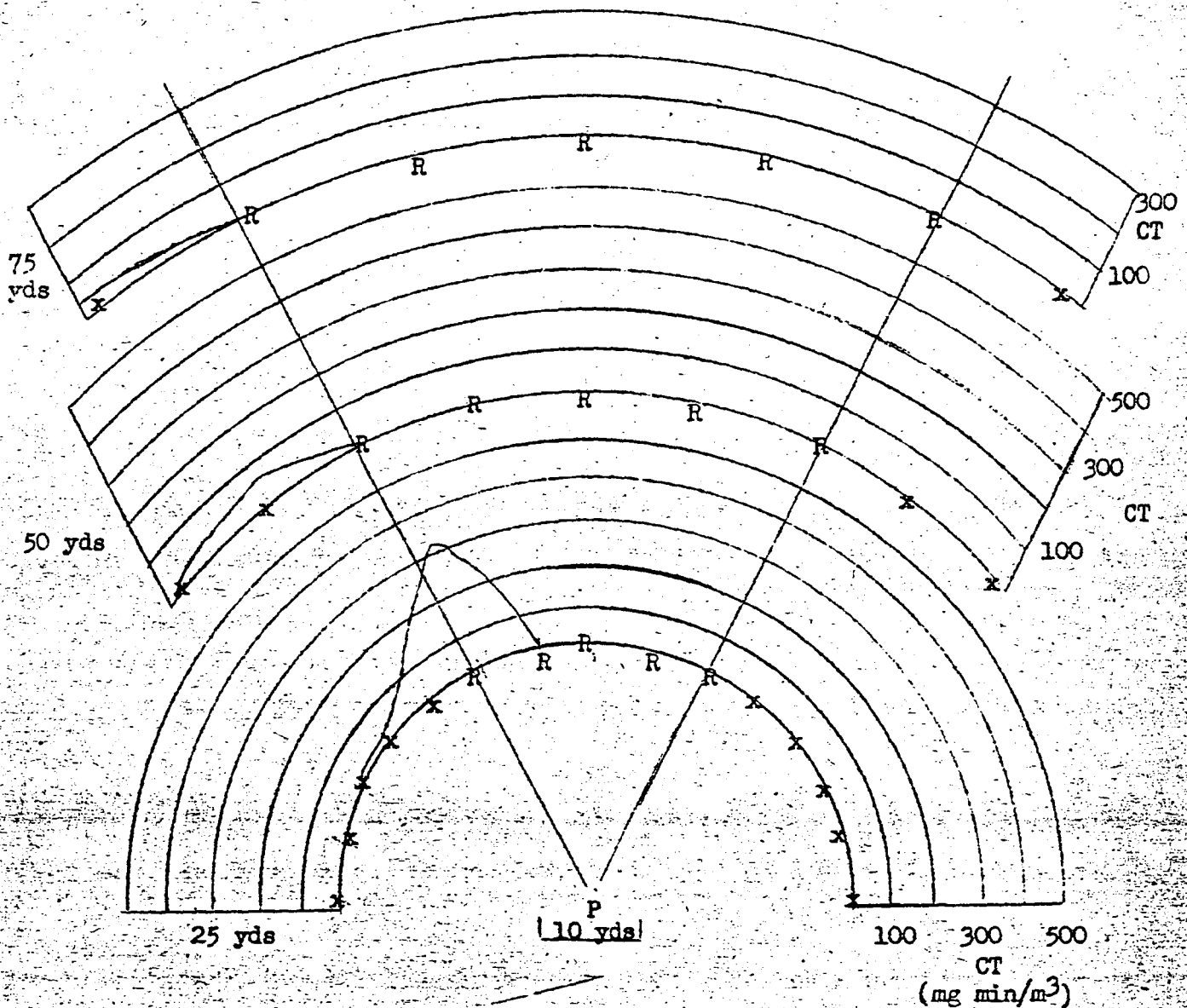
HD VAPOR DO

UNCLASSIFIED
SMOKE POT

~~Sixty-six~~ Inch Sampling Height

Time of Test: 0900 Hours, 27 July 1949

Burning Time: 12.5 minutes



Test Area #4

- P - E23 Smoke Pot
- R - Rotary Sampler
- x - Total Dosage Pump
- - 0-2 minutes
- - - - - 0-20 minutes

METEOROLOGICAL DATA:

T_{2.0M} - T_{0.3M} = -2.5°C
(Lapse)
Wind Velocity: 10mph E

MUNITIONS DATA:

One E23 Smoke Pot,
M-5, Mod. 1, EA6-48,
Lot No. 4847-65-1,
filled with 18.6 lbs. HD
dried 0.25% DuPont Oil
(ed) statically fired
in open.

SJP Report No. 176

~~Chart No. 48~~

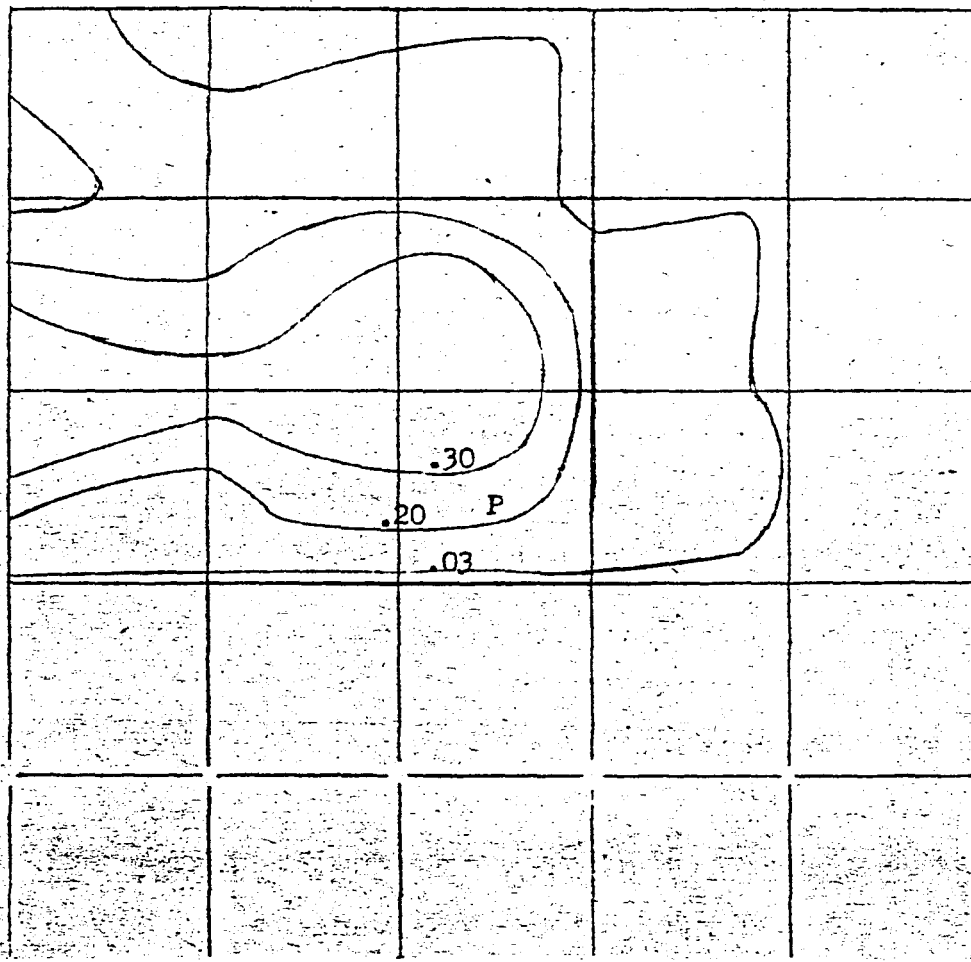
HD GROUND

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Dosages in Grams per Square Meter

Time of Test: 0900 Hours, 27 July 1949

Burning Time: 12.5 minutes



2 yds

AREA IN SQUARE YARDS
INCLOSED BY CONTOUR LINES

<u>DOSAGE</u>	<u>AREA</u>
.03	37.4 plus
.20	14.5 plus
.30	8.0 plus

Test Area #4

METEOROLOGICAL DATA:

T_{2.0M-T_{0.3M}} = -2.5°C
(Lapse)
Wind Velocity: 10mph E
Temperature: 84.2°F
Relative Humidity: 73%
Precipitation: None

MUNITIONS DATA:

One E 23 Smoke Pot,
M-5, Mod. 1, EA6-48,
Lot No. 4847-65-1,
filled 18.6 lbs. HD
(dyed 0.25% DuPont Oil
Red) Stationary fired
Open.

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Laboratory Data

1. ROTARY SAMPLERS

Rotary samplers were numbered from right to left across each sampling arc beginning with the 25-yard arc. Total dosage pumps and rotary samplers were numbered consecutively, therefore the first rotary position is number six. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution.

Pos.#	<u>12 INCH HEIGHT</u>						
	0-2	0-4	0-6	0-8	0-10	0-12	0-20
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	36	84	132	168	264	324	360
18	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0

Pos.#	<u>66 INCH HEIGHT</u>						
	0-2	0-4	0-6	0-8	0-10	0-12	0-20
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	72	120	168	304	316
18	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0

UNCLASSIFIED

UNCLASSIFIED

Laboratory Data
(continued)

2. TOTAL DOSAGE PUMPS

Total dosage pumps were numbered with the rotary samplers from right to left across each sampling arc beginning with the 25-yard arc. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution.

<u>12 INCH HEIGHT</u>		<u>66 INCH HEIGHT</u>	
Pos.#	0-20	Pos.#	0-20
1	0	1	0
2	0	2	0
3	0	3	0
4	0	4	0
5	0	5	0
11	169	11	133
12	36	12	12
13	0	13	0
14	0	14	0
15	0	15	0
16	0	16	0
17	0	17	0
23	72	23	60.5
24	0	24	0
25	0	25	0
31	36	31	24

3. GROUND CONTAMINATION

In an effort to establish a standard of comparison for future tests, both jump cards and tambourines were used in measuring ground contamination. A total of twenty-four tambourines were used. These tambourines were placed in the centers of the first twenty-four jump cards in the sampling area. Jump card positions were numbered consecutively one through thirty-six beginning with the upper left corner of the layout. Tambourine results follow:

Tamb.#	mg HD/tamb.	Tamb.#	mg HD/tamb.
1	1.5	13	15.0
2	0	14	9.0
3	0	15	15.0
4	0	16	4.5
5	0	17	0
6	0	18	0
7	0	19	0
8	0	20	0
9	0	21	0
10			0
11			0
12			0

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(SJPR No. 176)

UNCLASSIFIED

APPENDIX C

RESULTS OF PHASE 2

UNCLASSIFIED

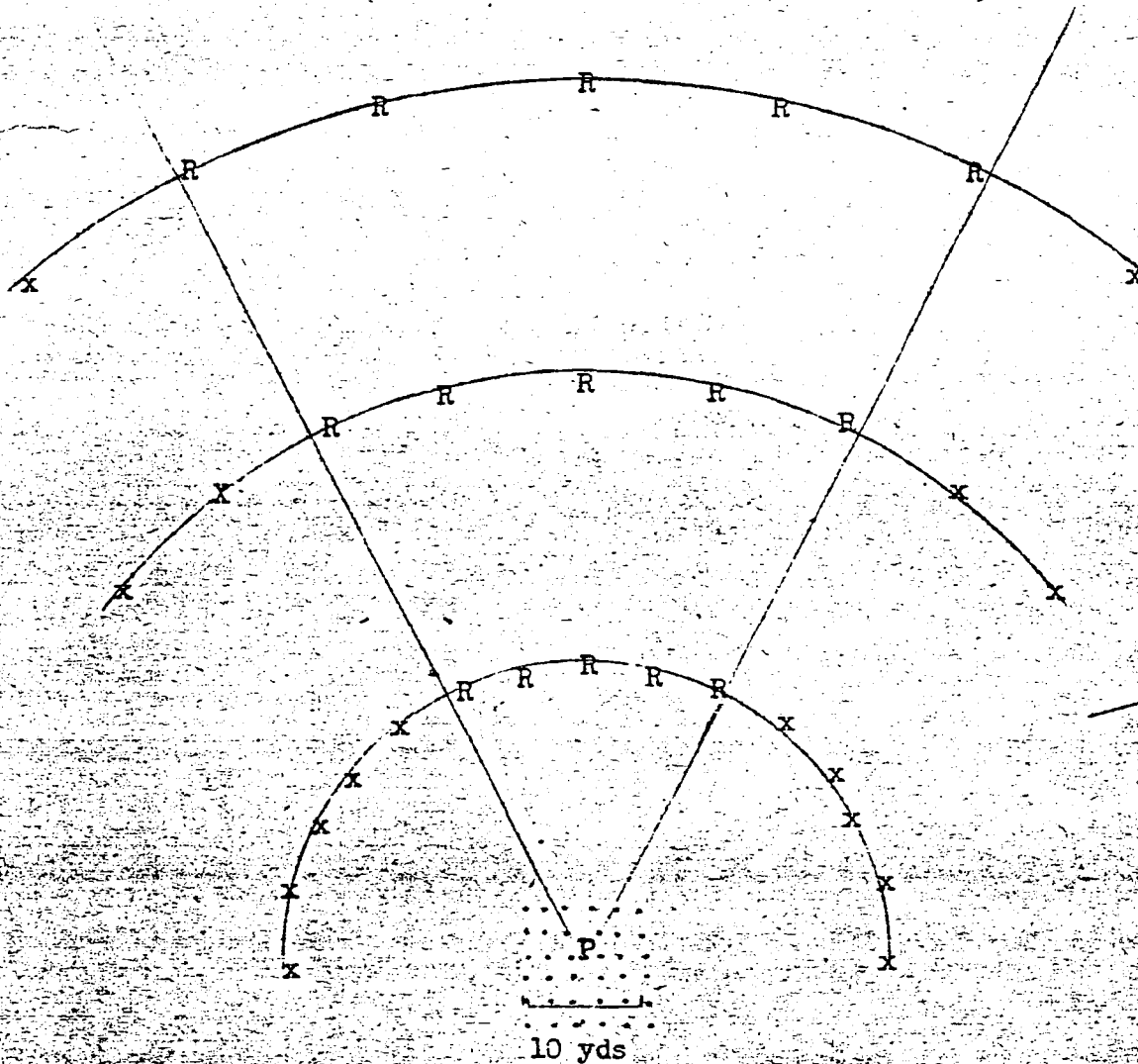
UNCLASSIFIED

Chart No. 10

Test Area Layout

Time of Test: 0903 Hours, 2 August 1949

Burning Time: 7 minutes



Test Area #4

- P - E23 Smoke Pot
- R - Rotary Sampler
- x - Total Dosage I
- - Jump Card

METEOROLOGICAL DATA:

T - T - - - - 100

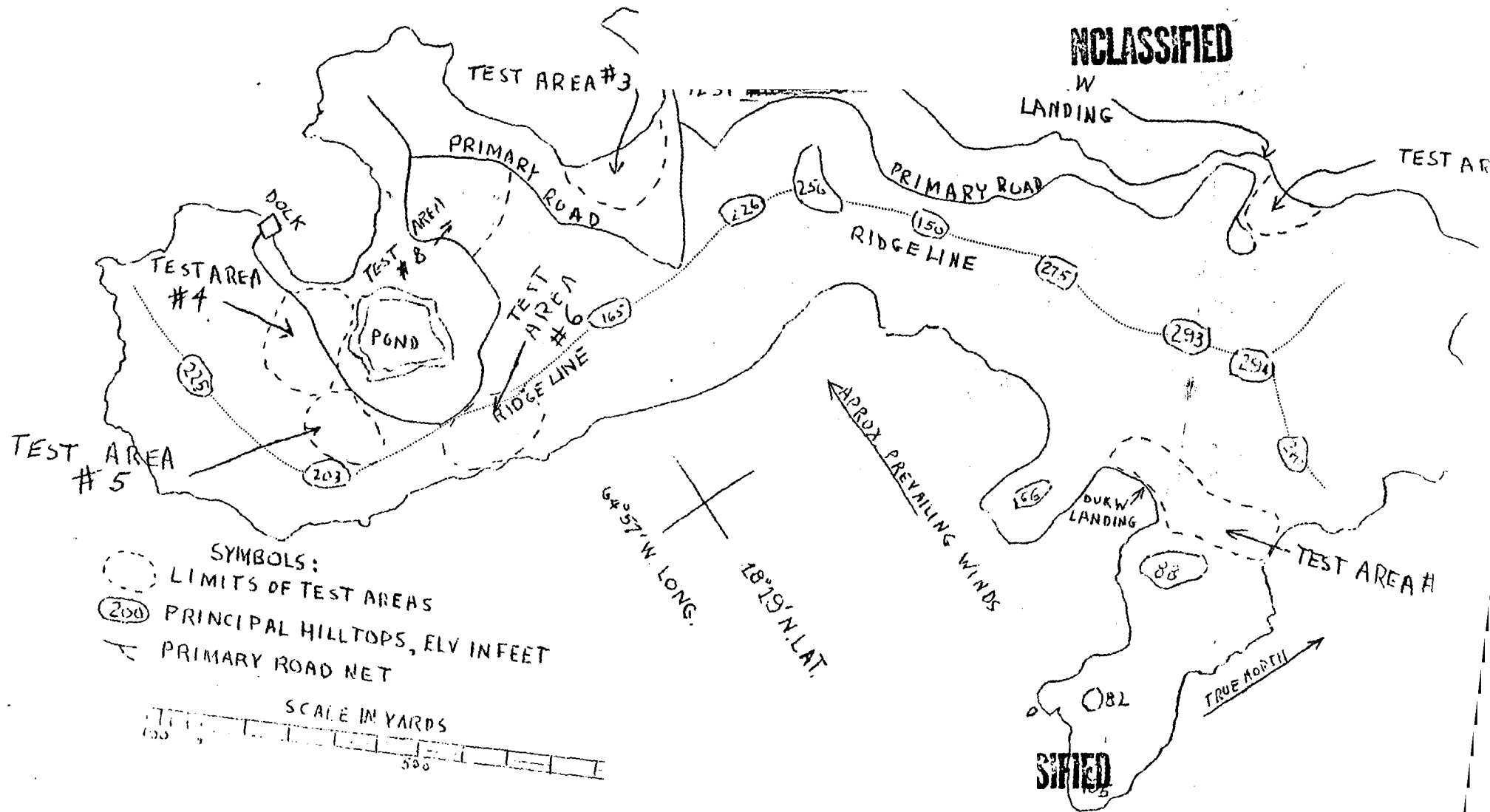
Relative Humidity: 77%
Precipitation: None

MUNITIONS DATA:

One E23 Smoke Pot, M-5,
Mod. 1, EA6-48, Lot No.
487-51-13, 18.6
lbs. (18.6 lbs. 0.25%
DuPont Oil Red) static-
ally fired in open.

SCALE 1=10,000

UNCLASSIFIED



SYMBOLS:
--- LIMITS OF TEST AREAS
(200) PRINCIPAL HILLTOPS, ELV IN FEET
--- PRIMARY ROAD NET

SCALE IN YARDS
0 100 500

SECRET
ISLAND, HARBOR OF ST. THOMAS, V.I.

(SJPR No. 176)

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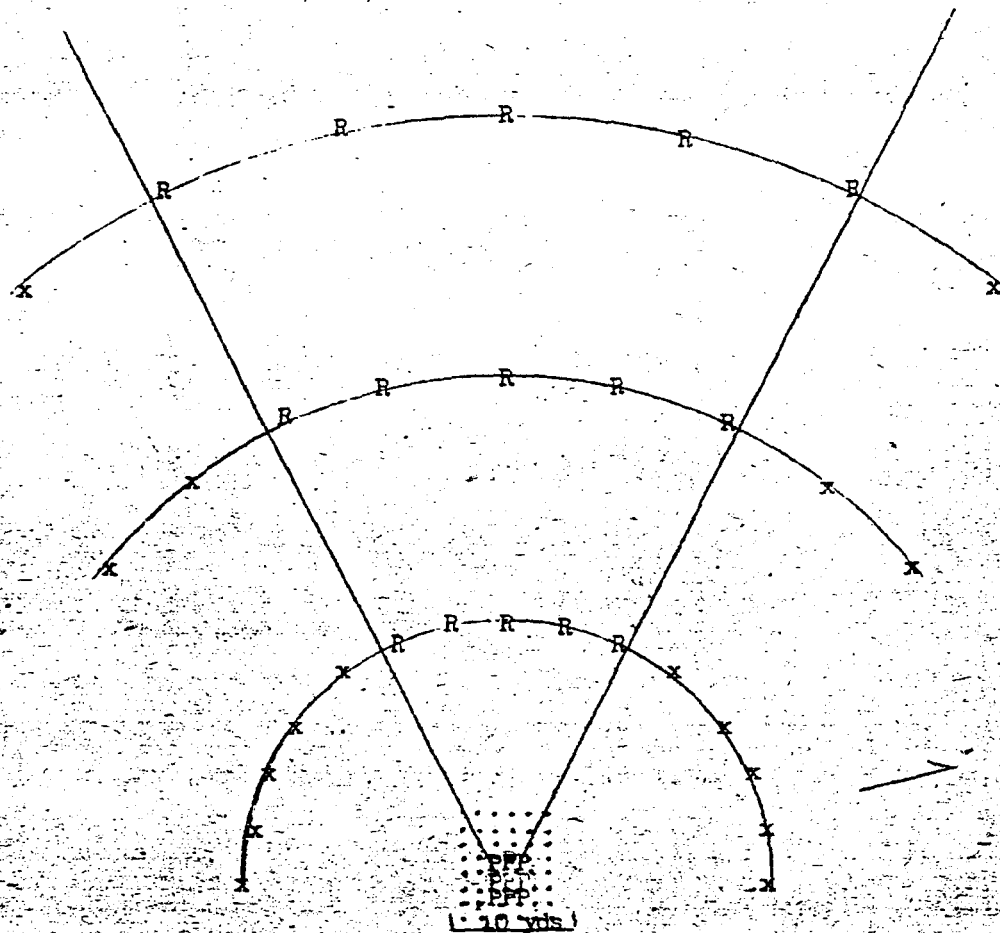
APPENDIX F

RESULTS OF PHASE 5

UNCLASSIFIED

UNCLASSIFIED

Time of Test: 0908 Hours, 15 August 1949 Burning Time: 7½ to 11 minutes
Average: 10 minutes



Test Area #4

- P - E23 Smoke Pot
- R - Rotary Sampler
- x - Total Dosage Pump
- - Jump Card

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.3M} = -2.4^{\circ}C$
(Lapse)
Wind Velocity: 7 mph E
Temperature: 89.6°F
Relative Humidity: 77%

MUNITIONS DATA:

Nine E 23 Smoke Pots, M-5, Mod.O, EA6-48, Lot No. 4847-3-2, filled 18.0 lbs. HD (dyed 0.50% DuPont Oil Red) statically fired in open, pots placed center to center.

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UNCLASSIFIED

Table 1F

Meteorological Data

Time of Test: 0908 Hours, 15 August 1949 Burning Time: $7\frac{1}{2}$ to 11 minute.
Average: 1.0 minute.

Time	Soil	Temperature, °C				Wind		R.H.	Cloud Coverage
		0.1m	0.3m	1.0m	2.0m	Dir	Speed		
0800	28.6	30.3	29.8	29.6	29.1	ESE	9mph	74%	.3
0815	29.2	32.9	30.7	30.7	30.3	ESE	10	75	.2
0830	29.3	34.3	31.2	30.6	29.1	ESE	7	73	.3
0845	29.4	35.8	32.2	31.3	29.7	E	8	81	.4
0900	30.0	30.6	31.8	31.2	29.7	E	6	81	.3
0905	30.2	30.3	32.0	31.6	29.6	E	7	77	—
0910	30.4	36.4	33.1	31.8	29.7	ESE	6	77	.3
0915	30.8	36.3	32.5	31.7	29.5	ESE	9	77	.3
0920	30.9	37.0	33.0	31.4	29.4	ESE	6	79	.4
0925	31.3	36.9	33.1	31.7	29.6	ESE	8	77	.3
0930	31.6	37.3	33.2	31.7	29.7	E	10	80	.3

The Meteorology Station was set up 35 yards north of the smoke pots.

MUNITIONS DATA:

Nine E23 Smoke Pots, M-5, Mod. 0, EA6-48, Lot No. 4847-3-2, filled 18.0 lbs. HD (dyed 0.50% DuPont Oil Red) statically fired in open, pots placed on 'grid 2' center to center.

UNCLASSIFIED

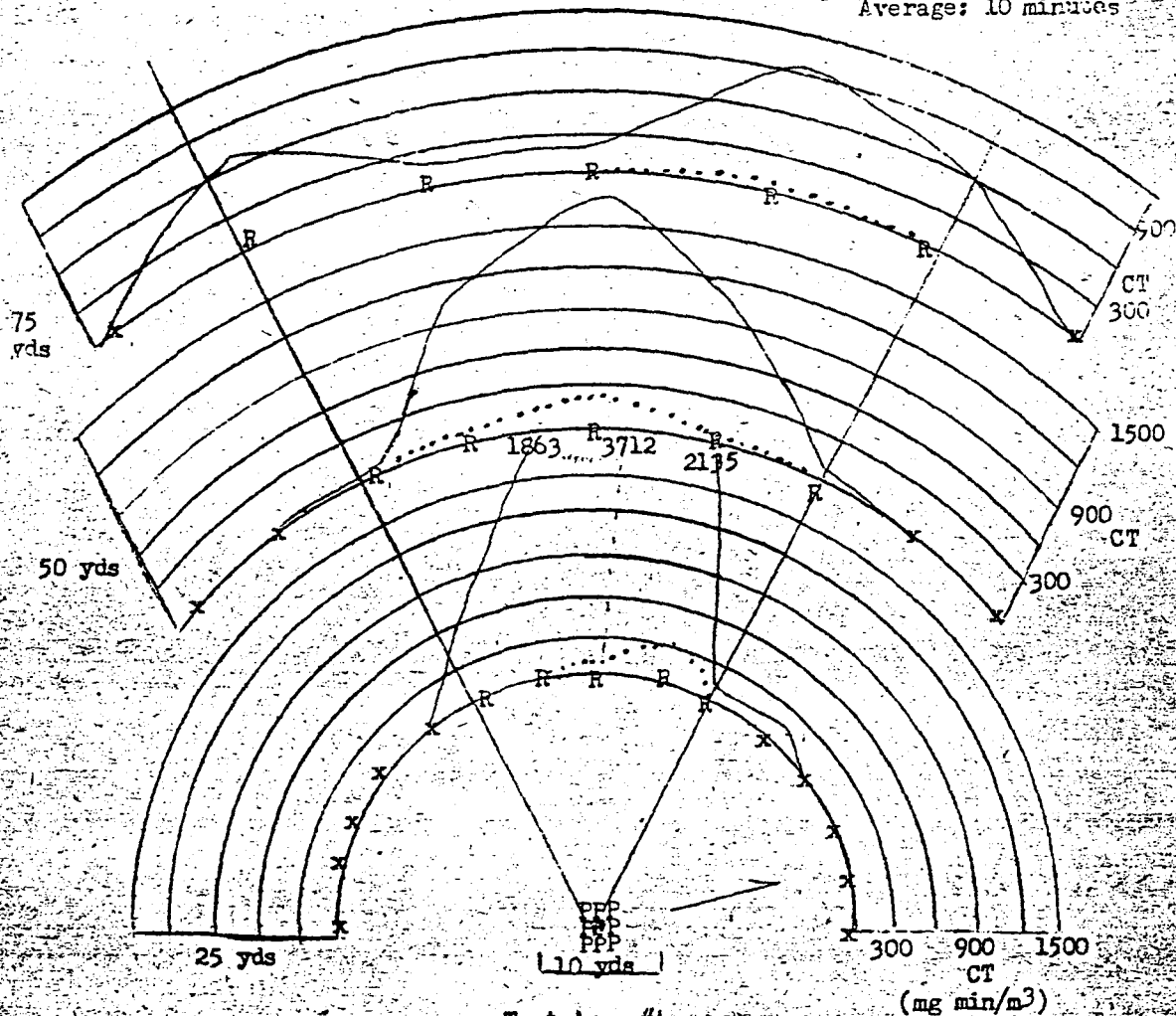
SJP Report No. 176

Chart No. 2F

HD VAPOR I

**NOT
CLASSIFIED**

Time of Test: 0908 Hours, 15 August 1949 Burning time: $\frac{1}{2}$ to 11 minutes
Average: 10 minutes



Test Area #4

P - E23 Smoke Pot
R - Rotary Sampler
x - Total Dosage Pump
.... - 0-2 minutes
— - 0-20 minutes

METEOROLOGICAL DATA:

T_{2.0m} - T_{0.3m} = -3.0°C

MUNITIONS DATA:

Nine E23 Smoke Pots, M-5, Mod.
O, EA6-48, Lot No. 4847-3-2,
0 lbs. HD (dye 0.50%
Red) statically fired
Pots placed on grid 21
center

**NOT
CLASSIFIED**

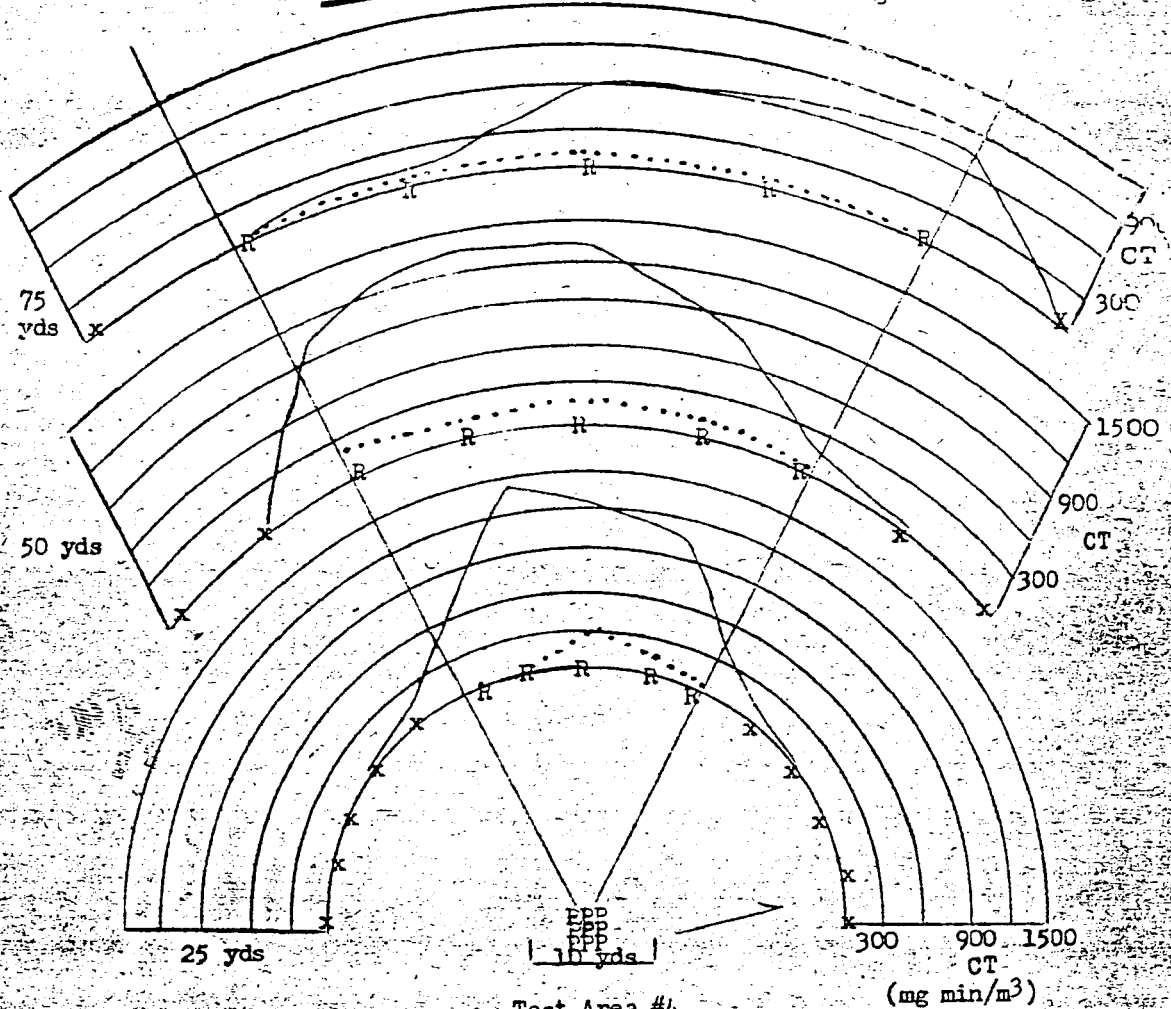
SJP Report No. 176

Chart No. 3F

~~HD VAPOR DOSAGE PROFILES PRODUCED BY NINE E23 SMOKE POTS~~

~~SIXTY-FOUR INCH SAMPLING HEIGHT~~

Time of Test: 0908 Hours, 15 August 1949 Burning Time: $7\frac{1}{2}$ to 11 minutes
Average: 10 minutes



P - E23 Smoke Pot
R - Rotary Sampler
x - Total Dosage Pump
.... - 0-2 minutes
- - - - - 0-20 minutes

METEOROLOGICAL DATA:

T_{2.0M} T_{0.3M} = -3.0°C
(Lapse)
Wind Velocity: 9 mph ESE
Temperature: 80.0°F

MUNITIONS DATA:

Nine E23 Smoke Pots, M-5, Mod. O, EA6-48, Lot No. 4847-3-2, filled 18.0 lbs. HD (dyed 0.50% DuPont Oil Red) statically fired on, pots placed on grid 27 to center.

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SJP Report No. 176

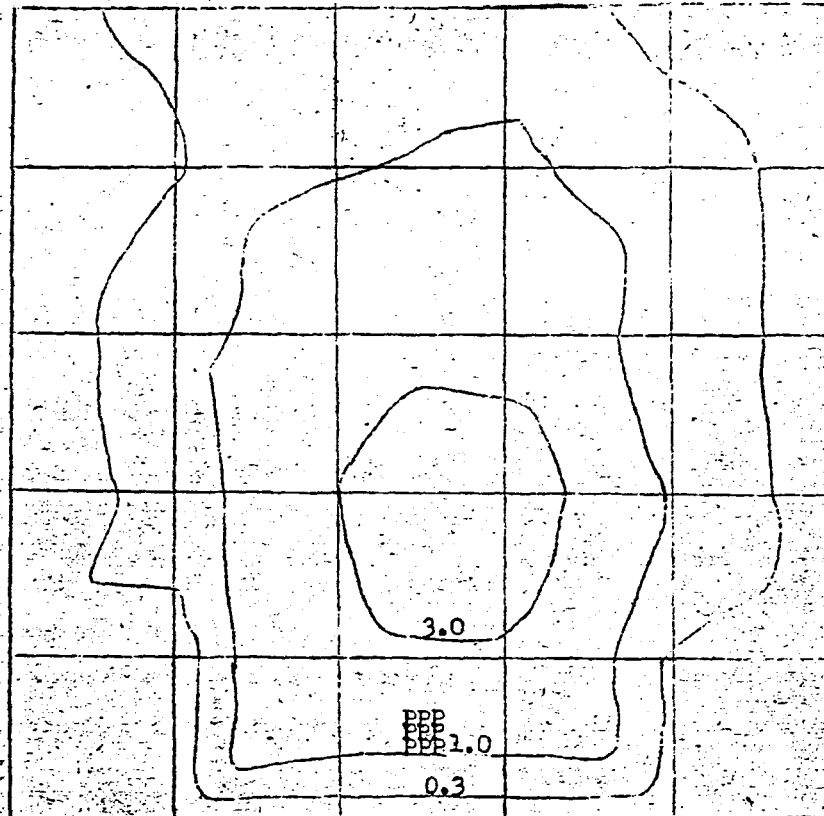
Chart No. 4F

HD GROUND CONTAMINATION CONTOURS PRODUCED
BY NINE E23 SMOKE POTS

UNCLASSIFIED

Dosages in Grams per Square Meter

Time of Test: 0908 Hours, 15 August 1949 Burning Time: $7\frac{1}{2}$ to 11 minutes
Average: 10 minutes



2 yds

Test Area #4

AREA IN SQUARE YARDS
INCLOSED BY CONTOUR LINES

DOSAGE
0.3
1.0
3.0

AREA

METEOROLOGICAL DATA:

T_{2.0M}-T_{0.3M} = -3.0°C
(Lapse)

Wind Velocity: 9 mph ESE

MUNITIONS DATA:

Nine E23 Smoke Pots, M-5,
Mod. 0, EA6-48, Lot No. 484,
3-2, filled 18.0 lbs. HD
(dyed 0.50% DuPont Oil Red)
statically fired in open
pots placed on grid 2' cen

UNCLASSIFIED

SECRET

1. ROTARY SAMPLE

Rotary samplers were numbered from right to left across each sampling arc beginning with the 25-yard arc. Total dosage pumps and rotary samplers were numbered consecutively, therefore the first rotary position is number six. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HP/10cc of collecting solution.

12 INCH HEIGHT							
Pos.#	0-2	0-4	0-6	0-8	0-10	0-12	0-20
6	33	115	115	115	115	115	115
7	346	973	1681	1928	2076	2076	2125
8	99	709	1303	2491	2491	3134	3712
9	0	49	280	973	1534	1814	1863
10	0	49	90	288	420	469	502
18	0	33	33	115	115	115	115
19	132	478	907	1006	1006	1006	1121
20	247	636	1180	1427	1625	1724	1872
21	132	429	676	808	956	972	1071
22	0	0	0	0	0	16	16
26	0	82	181	511	511	610	659
27	82	197	312	444	642	840	1021
28	0	115	181	181	181	197	213
29	0	0	82	99	99	132	198
30	0	0	115	247	412	511	643

66 INCH HEIGHT							
Pos.#	0-2	0-4	0-6	0-8	0-10	0-12	0-20
6	49	115	230	230	230	428	428
7	148	412	742	923	1005	1005	1087
8	297	759	1270	2045	2358	2737	2737
9	0	148	330	429	957	1237	1435
10	0	82	132	429	571	571	620
18	0	49	66	132	132	132	132
19	115	478	725	807	823	839	839
20	165	429	693	874	1105	1204	1270
21	115	412	678	925	1040	1155	1287
22	165	363	462	660	858	957	1005
26	-	0	82	82	82	115	758
27	33	48	130	262	443	443	624
28	115	313	445	527	609	609	609
29	16	16	16	16	16	16	49
30	0	0	0	0	0	0	0

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2. TOTAL D

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Total dosage pumps were numbered with the rotary samplers from right to left across each sampling arc beginning with the 25th arc. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution. Also listed for each time is percent decomposition of agent.

12 INCH HEIGHT			66 INCH HEIGHT		
Pos.#	0-20	% Decomp.	Pos.#	0-20	% Decomp.
1	0	100	1	0	-
2	0	100	2	0	-
3	0	100	3	0	100
4	0	-	4	0	100
5	214	19	5	115	0.9
11	0	100	11	132	-
12	0	100	12	0	100
13	0	100	13	0	100
14	0	100	14	0	100
15	0	100	15	0	100
16	0	-	16	0	100
17	0	100	17	0	100
23	0	100	23	0	-
24	0	100	24	0	100
25	0	-	25	0	100
31	0	-	31	0	-

3. GROUND CONTAMINATION

Tambourines were placed in the centers of the first thirty-six jump cards in the sampling area. Jump card positions were numbered consecutively one through forty-eight beginning with the upper left corner of the layout. Tambourine results follow:

Tamb.#	mg HD/tamb.	Tamb.#	mg HD/tamb.	Tamb.#	mg HD/tamb.
1	5	13	0	25	3
2	11	14	15	26	3
3	18	15	49.5	27	70
4	12.8	16	44.5	28	68.5
5	3	17	15	29	6.7
6	0	18	1.7	30	2.5
7	0	19	0	31	5
8	6.8	20	13.7	32	4
9	24	21	77	33	3
10	3	22	113	34	3
11	10.0			35	1.7
12				36	1.7

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4. DECOMPOS

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Loss through decomposition is listed below for all rotary positions. Column headings represent sampling times of the various bubble tubes with decomposition tabulated as percent for each tube.

Pos.#	12 INCH HEIGHT						12-20
	0-2	2-4	4-6	6-8	8-10	10-12	
6	44	-	100	100	100	100	100
7	-	-	-	-	-	100	10
8	-	-	4	-	100	-	-
9	100	85.3	21.5	-	-	-	-
10	-	-	85	38.8	-	67.7	90
18	-	-	-	-	-	-	-
19	36	-	-	-	100	-	-
20	-	-	43.9	35.3	38.8	81.5	66.3
21	65.5	44	39.9	68	72	96	74.1
22	100	100	100	100	100	97.1	100
26	100	84.6	78.9	-	-	-	88.8
27	86	69.7	72.1	62	62.7	66.4	58.8
28	100	73.8	86.9	100	100	96	-
29	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-

Pos.#	66 INCH HEIGHT						12-20
	0-2	2-4	4-6	6-8	8-10	10-12	
6	-	-	-	-	100	32.6	-
7	-	-	-	-	29.9	100	-
8	22.4	-	-	-	18.1	-	-
9	-	54.2	44	43.9	-	-	-
10	-	-	-	-	-	-	-
18	-	44	-	-	-	100	-
19	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-
21	80.5	32.4	50.2	15.9	76.9	76.9	70
22	65	38.9	74.1	44	52	74.1	70.3
26	-	100	81.2	-	100	-	-
27	92	96	86	65.5	67.5	100	58.8
28	72.1	44	65.5	78.4	78.4	100	100
29	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-

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Table 1C

Meteorological Data

Time of Test: 0900 Hours, 2 August 1945

Burning Time: 7 minutes

Time	Temperature, °C					Wind		Cloud	
	Soil	0.1m	0.3m	1.0m	2.0m	Dir	Speed	R.H.	Coverage
0700	28.2	28.5	29.4	30.1	30.4	ESE	10 mph	91%	.3
0715	29.0	29.0	29.8	30.6	30.9	ESE	8	90	.3
0730	28.3	29.4	30.8	30.4	30.7	ESE	10	80	.2
0745	28.5	29.5	31.0	30.6	31.1	ESE	8	80	.2
0800	28.6	29.6	31.3	30.8	31.5	ESE	9	78	.4
0830	29.0	30.8	31.9	31.0	31.8	ESE	9	81	.5
0845	29.4	31.4	32.3	31.1	31.7	ESE	7	77	.3
0900	30.1	32.4	32.4	31.6	32.0	ESE	5	77	.2
0905	30.2	32.2	32.4	31.8	32.3	ESE	6	80	.3
0910	30.5	32.3	32.4	31.0	31.8	E	8	74	.2
0915	31.0	32.4	32.5	31.3	31.9	ESE	9	79	.2
0920	30.7	32.2	32.4	30.9	31.4	ESE	8	73	.3
0925	31.0	32.4	32.0	30.9	31.4	E	7	74	.4
0930	31.1	32.4	32.0	31.2	31.5	ESE	8	76	.5

The Meteorology Station was set up 35 yards north of the smoke pot.

MUNITIONS DATA:

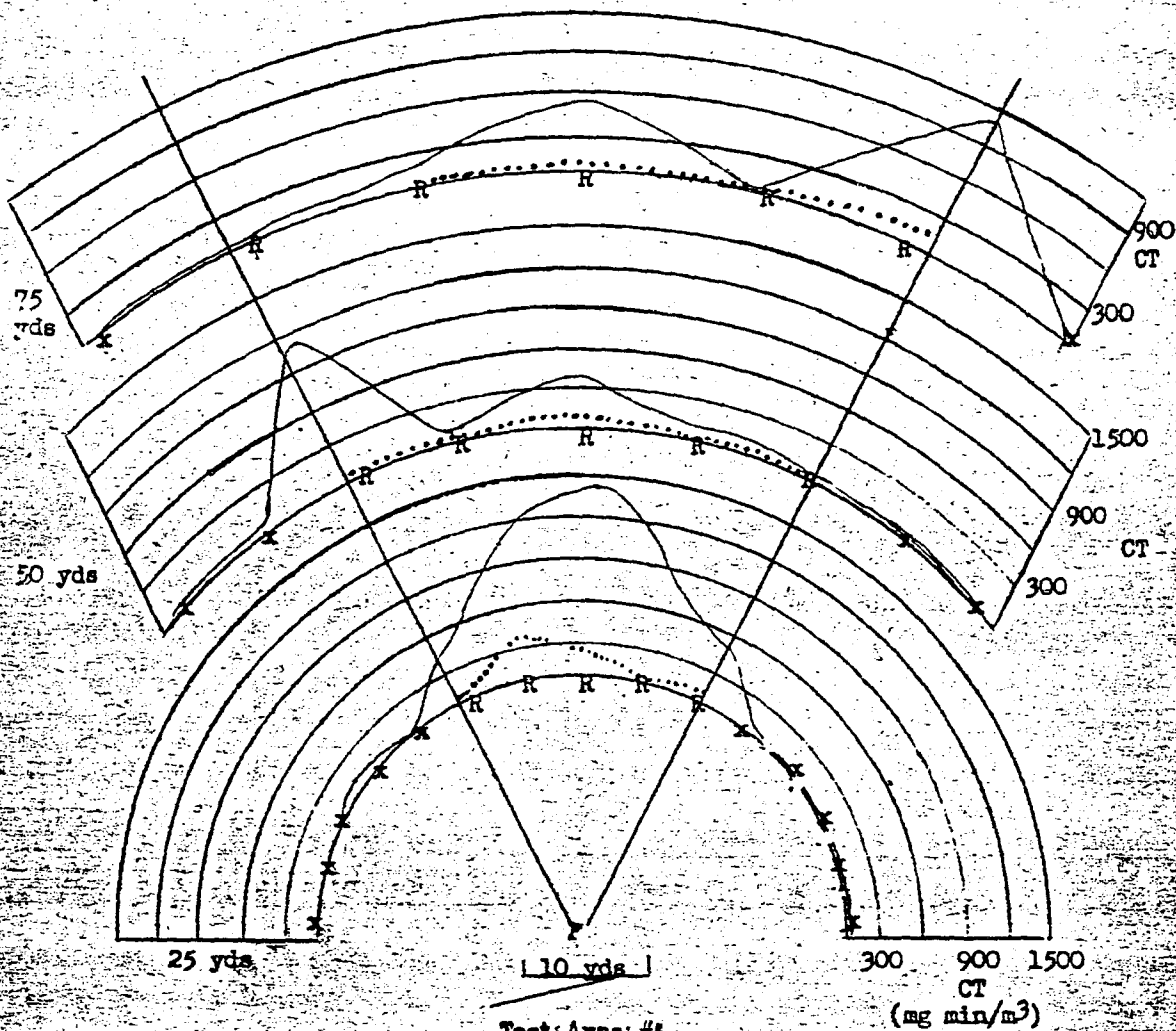
One E 23 Smoke Pot, M-5, Mod. 1, EA6-48, Lot No. 4847-51-3, filled 18.6 lbs. HD (dyed 25% DuPont Oil Red) statically fired in open

UNCLASSIFIED

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HD VAPOR DOSAGE PROFILES PRODUCED BY SINGLE E23 SMOKE POT

Twelve Inch Sampling Height
Time of Test; 0903 Hours, 2 August 1949 Burning Time: 7 minutes



P - E23 Smoke Pot
R - Rotary Sampler
x - Total Dosage Pump
..... - 0-2 minut
——— - 0-20 minu

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.3M} = -0.69C$
(Neutral)

MUNITIONS DATA:

One E23 Smoke Pot, M-5,
Mod.1, EA6-48, Lot No.
847-51-3, filled 18.6
lb. HD (dried 0.25%
of pot) static-
ity: 100% in open.

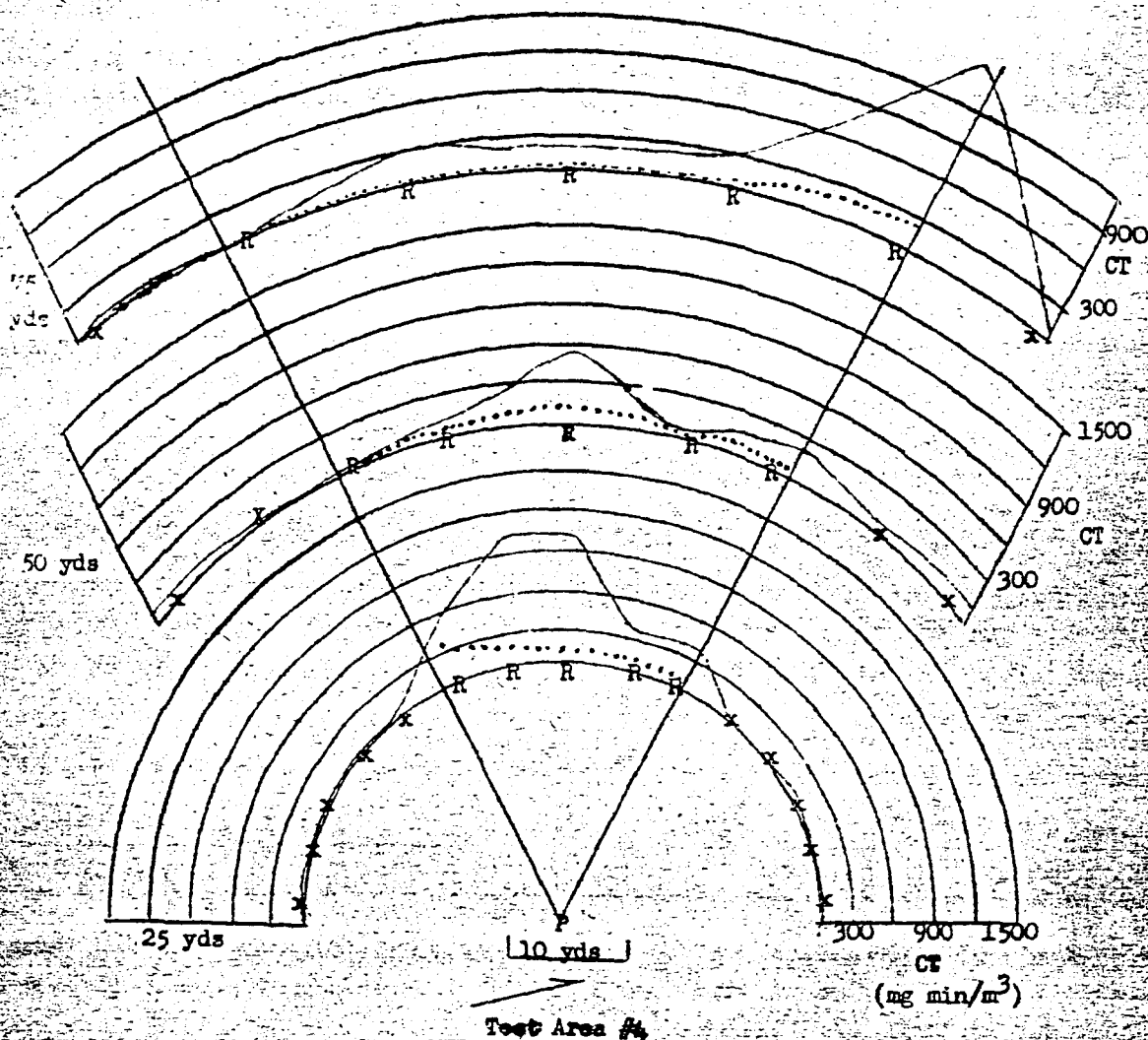
HD VAPOR DOX

REF ID: A66077

Sixty-six Inch Sampling Height

Time of Test: 0903 Hours, 2 August 1949

Burning Time: 7 minutes



P - E23 Smoke Pot
R - Rotary Sampler
x - Total Dosage Pump
.... - 0-2 minutes
— - 0-20 minutes

METEOROLOGICAL DATA:

$T_2 - T_0 = -0.6^\circ\text{C}$

Precipitation: None

MUNITIONS DATA:

One E23 Smoke Pot, M-5,
Mod. 1, EA6-48, Lot No.
4847-51-3, filled 18.6
lbs. HB (each 0.85% DuPont
Oil Red) statically fired
in open.

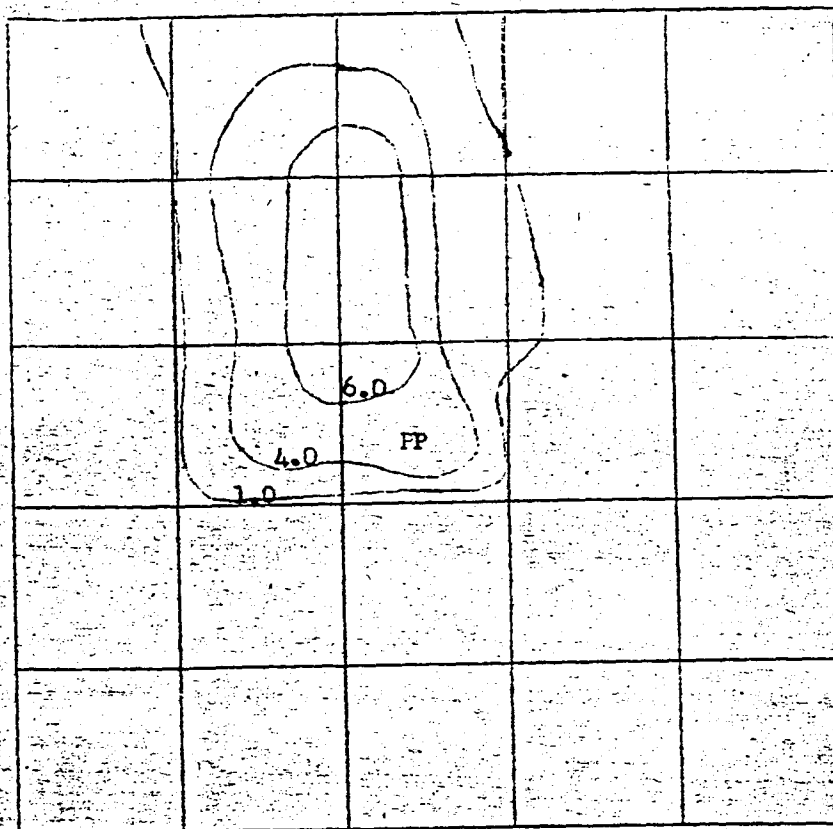
HD GROU...
BY SINGLE E23 SMOKE POT

UNCLASSIFIED

Dosages in Grams per Square Meter

Time of Test: 0903 Hours, 2 August 1949

Burning Time: 7 minutes



AREA IN SQUARE YARDS
INCLOSED BY CONTOUR LINES

DOSAGE	AREA
1.0	24.4 plus
4.0	12.4
6.0	4.4

Test Area #4

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.3M} = -0.6^{\circ}C$
(Neutral)
Wind Velocity: 8 mph E
Temperature: 87.9°F
Relative Humidity: 74%
Precipitation: None

MUNITIONS DATA:

One E23 Smoke Pot,
M-5, Mod. 1, EA6-48,
Lot No. 4847-51-3,
filled 18.6 lbs. HD
(dyed 0.25% DuPont Oil
Red) statically fired
in open.

UNCLASSIFIED

Laboratory Data

UNCLASSIFIED

1. ROTARY SAMPLERS

Rotary samplers were numbered from right to left across each sampling arc beginning with the 25-yard arc. Total dosage pumps and rotary samplers were numbered consecutively, therefore the first rotary position is number six. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution.

12 INCH HEIGHT						
Pos.#	0-2	0-4	0-6	0-8	0-10	0-20
6	91	258	318	394	454	499
7	0	288	516	683	819	971
8	243	562	942	1154	1382	1488
9	364	621	1001	1001	1153	1183
10	45	272	348	378	393	408
18	15	30	30	30	30	30
19	15	15	15	45	75	90
20	106	181	272	332	362	392
21	0	15	30	30	30	30
22	30	257	454	666	878	1121
26	182	576	773	955	1122	1152
27	0	0	0	0	0	0
28	91	318	409	439	515	530
29	0	76	106	151	166	181
30	0	15	15	15	15	15

66 INCH HEIGHT						
Pos.#	0-2	0-4	0-6	0-8	0-10	0-20
6	60	150	226	302	302	408
7	76	197	257	302	332	332
8	—	228	532	760	896	1002
9	—	288	698	758	925	1001
10	106	182	394	470	470	522
18	15	105	135	165	195	210
19	0	0	0	0	0	0
20	76	212	318	424	484	529
21	60	90	120	135	135	135
22	0	30	30	30	30	30
26	243	683	911	1154	1382	1610
27	—	182	227	272	302	302
28	0	0	0	45	121	181
29	60	105	150	226	286	301
30	0	0	0	0	0	0

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UNCLASSIFIED

(continued)

2. TOTAL DOSAGE PUMPS

Total dosage pumps were numbered with the rotary samplers from right to left across each sampling arc beginning with the 25-yard arc. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution.

12 INCH HEIGHT		66 INCH HEIGHT	
Pos.#	0-20	Pos.#	0-20
1	45	1	45
2	45	2	30
3	30	3	45
4	15	4	0
5	30	5	0
11	0	11	60
12	15	12	0
13	0	13	15
14	0	14	0
15	-	15	30
16	45	16	60
17	60	17	45
23	45	23	30
24	45	24	91
25	60	25	45
31	30	31	30

3. GROUND CONTAMINATION

As in the first phase, tambourines were placed in the centers of the first twenty-four jump cards in the sampling area. Jump card positions were numbered consecutively one through thirty-six beginning with the upper left corner of the layout. Tambourine results follow:

Tamb.#	mg HD/tamb.	Tamb.#	mg HD/tamb.
1	0	13	0
2	30	14	0
3	61	15	235
4	4	16	30
5	0	17	0
6	0	18	0
7	0	19	0
8	0	20	0
9	0	21	0
10	0	22	0
11	0	23	0
12	0	24	0
13	0	25	0
14	0	26	0
15	0	27	0
16	0	28	0
17	0	29	0
18	0	30	0
19	0	31	0
20	0	32	0
21	0	33	0
22	0	34	0
23	0	35	0
24	0	36	0

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(SJPR No. 176.

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APPENDIX D

RESULTS OF PHASE 3

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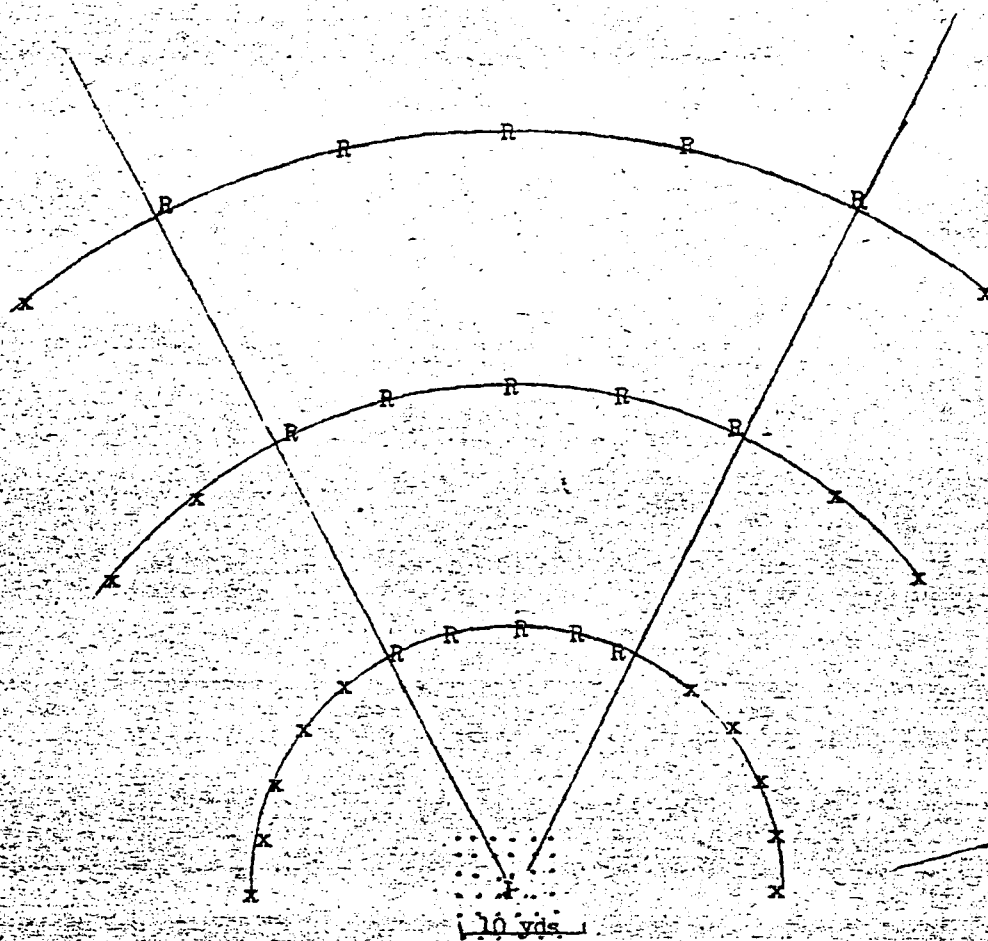
Chart No. 1D

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Test Area Layout

Time of Test: 0505 Hours, 5 August 1949

Burning Time: 9.5 minutes



Test Area #4

P - E23 Smoke Pot
R - Rotary Sampler
X - Total Dosage Pump
• - Jump Card

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.3M} = 0.2^{\circ}C$
(Neutral)
Wind Velocity: 7 mph E

MUNITIONS DATA:

One E23 Smoke Pot,
M-5, Mod.1, EA6-48,
Lot No. 4847-51-3,
filled 18.0 lbs. HD
(dyed 0.50% DuPont
Oil Red) statically
open.

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Doc Report No. 170

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Table LD

Meteorological Data

Time of Test: 0505 Hours, 5 August 1949						Burning Time: 9.5 Minutes			
Time	Soil	Temperature, °C				Wind		R.H	Cloud Coverage
		0.1m	0.3m	1.0m	2.0m	Dir	Speed		
0430	28.0	27.8	26.8	27.3	27.0	ESE	6mph	89%	.2
0445	26.8	26.4	26.2	26.7	26.6	E	7	87	.1
0500	28.0	26.2	26.2	27.0	26.4	E	7	85	.1
0510	28.1	26.2	26.3	26.9	26.6	E	7	84	.4
0515	28.0	26.2	26.9	26.8	26.9	E	6	85	.4
0520	28.2	26.8	26.8	26.9	26.9	E	5	85	.4
0525	28.3	26.7	26.9	27.0	26.9	E	6	85	.3
0530	28.3	26.8	26.9	27.1	27.0	E	5	85	.5

The Meteorology Station was set up 35 yards north of the smoke pot.

There was a trace of rain at 0530.

MUNITIONS DATA:

One E 23 Smoke Pot, M-5, Mod. 1, EA6-48, Lot No. 4847-51-3, filled 18.0 lbs. HD (dyed 0.50% Du Pont Oil Red) statically fired in open

UNCLASSIFIED

SJP Report No. 176

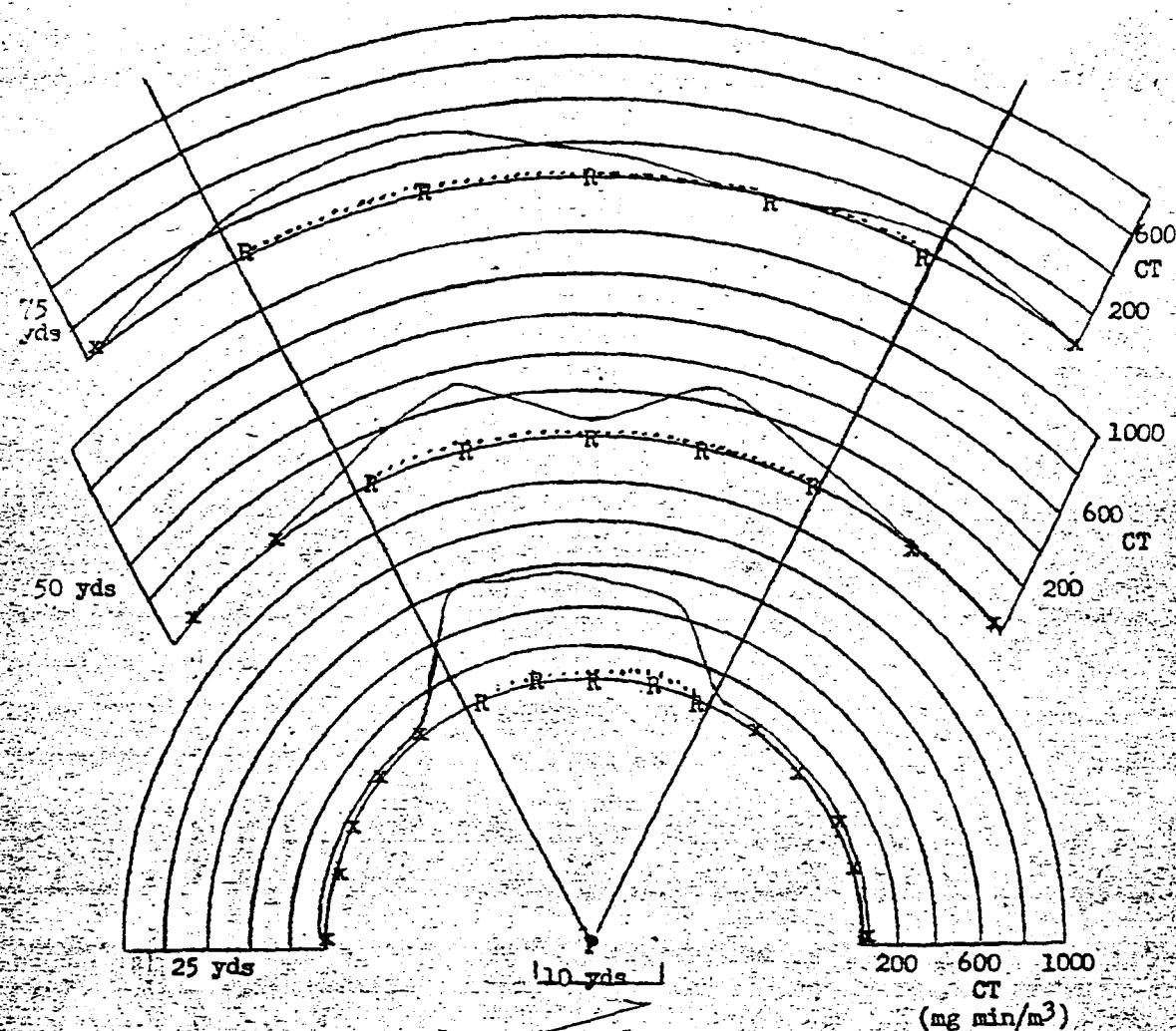
Chart No. 20

~~CANCELLED~~ UNCLASSIFIED
HD VAPOR DOSAGE PROFILES PRODUCED BY SINGLE E23 SMOKE POT

Twelve inch Sampling Height

Time of Test: 0505 Hours, 5 August 1949

Burning Time: 9.5 minutes



- P - E23 Smoke Pot
- R - Rotary Sampler
- x - Total Dosage Pump
- - 0-2 minutes
- - 0-20 minutes

~~CANCELLED~~ UNCLASSIFIED
METEOROLOGICAL DATA:

~~CANCELLED~~ UNCLASSIFIED
T_{2.0m} T_{10.3m} 0.29C
(Newton)
Wind Velocity: 7 mph-E
Temperature: 80.4°F
Relative Humidity: 84%
Precipitation: None

D-3

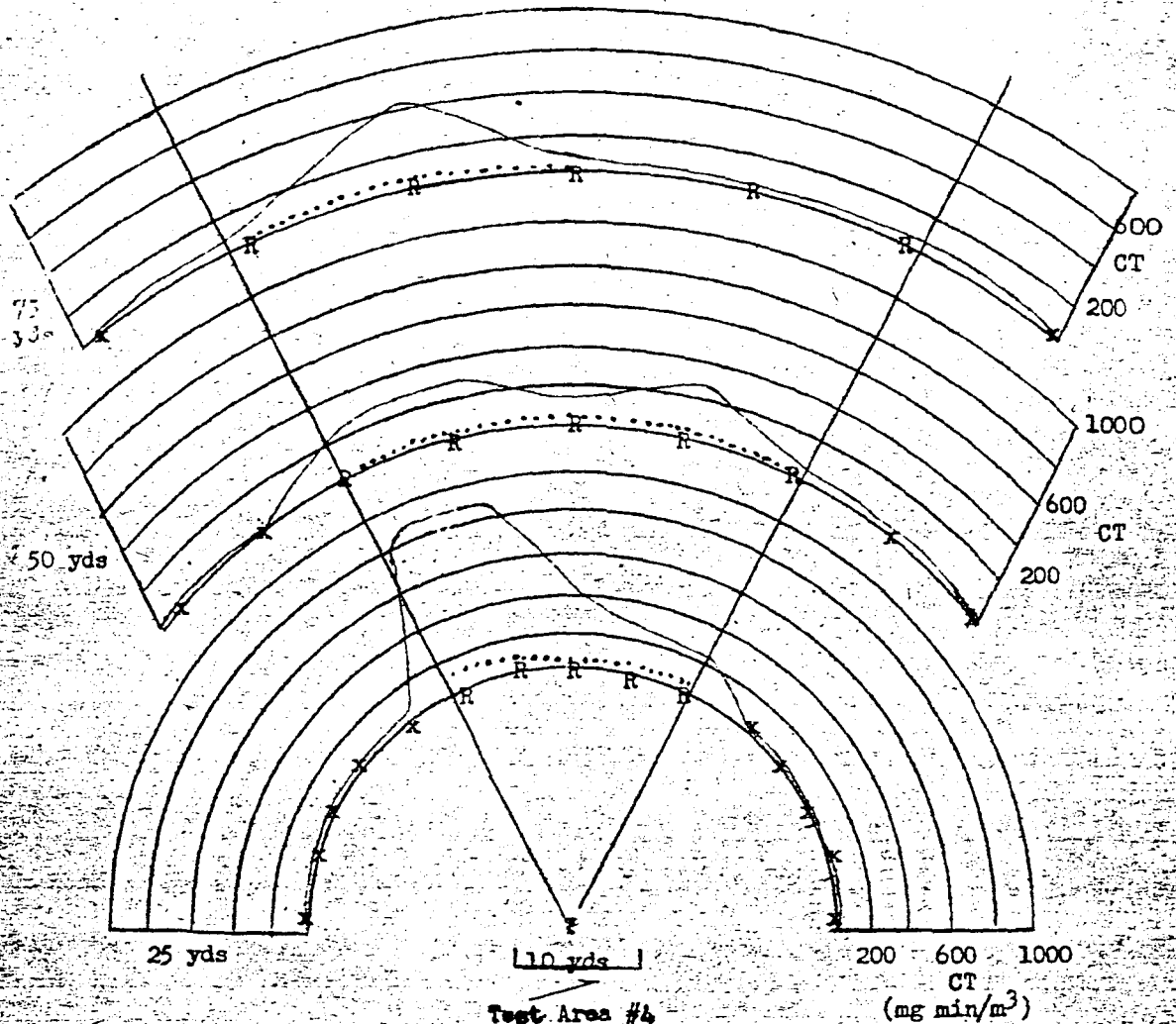
~~CANCELLED~~ UNCLASSIFIED
MUNITIONS DATA:

~~CANCELLED~~ UNCLASSIFIED
One E23 Smoke Pot, M-5,
Lot No. 4847-51-3, filled 18.0 lbs.
HD (dyed 0.50% DuPont Oil
Red) statically fired in
open.

SJP Report No. 176

~~CONFIDENTIAL~~ **UNCLASSIFIED**
 HD VAPOR DOSAGE PROFILES PRODUCED BY SINGLE E23 SMOKE POT

Sixty-six Inch Sampling Height
 Time of Test: 0505 Hours, 5 August 1949 Burning Time: 9.5 minutes



P - E23 Smoke Pot
 R - Rotary Sampler
 x - Total Dosage Pump
 - 0-2 minutes
 ——— - 0-20 minutes

METEOROLOGICAL DATA:

T₂
 (N)
 W₁
 Tex
 Relative Humidity 81% L/D
 Precipitation: None

MUNITIONS DATA:

t, M-5,
 t No. 4847-
 lbs. HD
 t Oil Red)
 in open.

UNCLASSIFIED

SJP Report No. 176

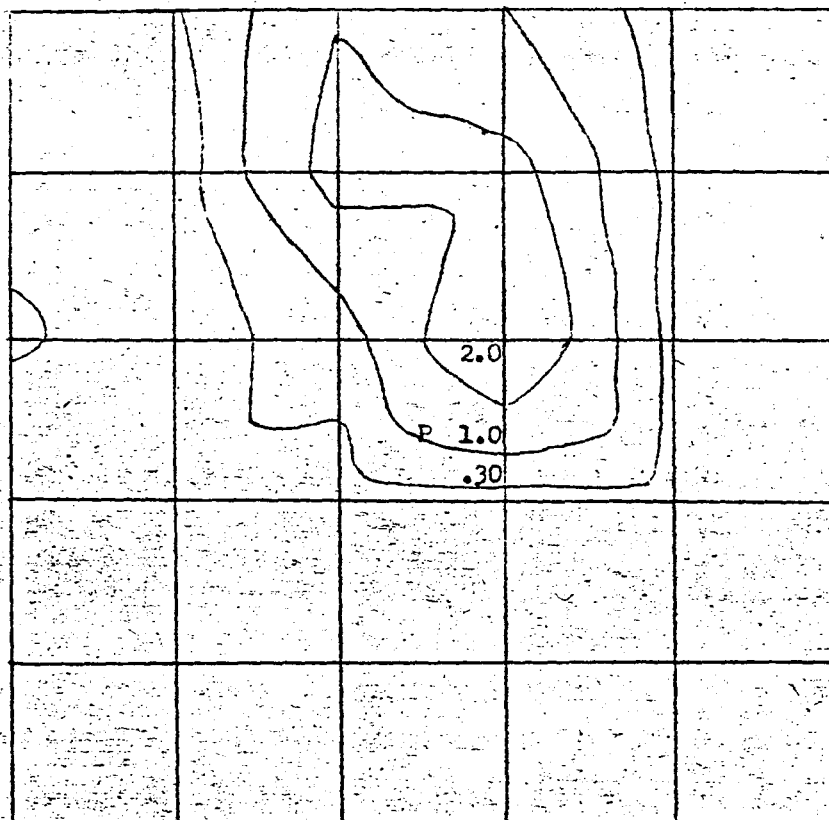
UNCLASSIFIED

BY SINGLE E23 SMOKE POT

Dosages in Grams per Square Meter

Time of Test: 0505 Hours, 5 August 1949

Burning Time: 9.5 minutes



2 yds

Test Area #4

AREA IN SQUARE YARDS
INCLOSED BY CONTOUR LINES

DOSAGE
.30
1.0
2.0

AREA

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.3M} = 0.3^{\circ}C$
(Neutral)

Wind Velocity: 7 mph E

MUNITIONS DATA:

One E23 Smoke Pot,
M-5, Mod.1, EA6-48,
Lot No. 4847-51-3,
filled 18.0 lbs. HD
(dyed 0.50% DuPont Oil
Red) statically fired
in open.

UNCLASSIFIED

1. ROTARY SAM

Rotary samplers were numbered from right to left across each sampling arc beginning with the 25-yard arc. Total dosage pumps and rotary samplers were numbered consecutively, therefore the first rotary position is number six. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution.

Pos.#	12 INCH HEIGHT						
	0-2	0-4	0-6	0-8	0-10	0-12	0-20
6	0	14	14	56	56	112	112
7	112	239	465	479	479	479	479
8	56	112	365	365	449	491	491
9	56	197	437	437	507	521	534
10	—	98	254	324	422	492	534
18	0	0	42	56	84	112	140
19	42	98	168	210	252	266	308
20	0	56	70	70	70	70	70
21	28	98	253	265	307	335	349
22	14	56	70	70	112	140	140
26	28	56	84	98	126	140	140
27	0	0	0	0	0	0	0
28	14	28	56	84	98	112	140
29	70	98	98	253	267	295	323
30	28	42	70	154	168	196	210

Pos.#	66 INCH HEIGHT						
	0-2	0-4	0-6	0-8	0-10	0-12	0-20
6	42	70	112	154	182	210	224
7	28	42	112	140	140	182	252
8	28	70	295	295	379	393	393
9	56	197	535	788	858	872	872
10	112	295	478	745	745	787	871
18	14	14	14	28	28	42	42
19	42	70	126	154	196	224	252
20	42	141	141	141	141	141	141
21	28	56	112	138	194	222	250
22	14	56	84	140	182	224	252
26	0	0	28	28	28	28	56
27	0	0	0	0	0	14	28
28	0	0	0	28	28	42	42
29	56	84	168	309	365	407	421
30	0	0	28	42	42	70	70

UNCLASSIFIED

101-00000

2. TOTAL DOSAGE PUMPS

Total dosage pumps were numbered with the rotary samplers from right to left across each sampling arc beginning with the 25-yard arc. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution. Also listed for each tube is percent decomposition of agent.

12 INCH HEIGHT			66 INCH HEIGHT		
Pos.#	0-20	%Decom.	Pos.#	0-20	%Decom.
1	42	52	1	28	-
2	14	84	2	14	52
3	28	52	3	14	-
4	28	-	4	42	-
5	28	-	5	28	68
11	56	-	11	56	-
12	42	67	12	42	28
13	42	64	13	42	-
14	14	88	14	42	28
15	28	-	15	28	-
16	0	100	16	0	100
17	-	100	17	14	84
23	0	-	23	0	100
24	0	100	24	14	88
25	0	100	25	0	-
31	0	100	31	28	52

3. GROUND CONTAMINATION

As in previous phases, tambourines were placed in the centers of the first twenty-four jump cards in the sampling area. Jump card positions were numbered consecutively one through thirty-six beginning with the upper left corner of the layout. Tambourine results follow.

Tamb.#	mg HD/tamb.	Tamb.#	mg HD/tamb.
1	3	13	8
2	6	14	4
3	48	15	11
4	25	16	87
5	1	17	2
6	4	18	3
7	6	19	3
8	1	20	5
9	62	21	4
10	59	22	2
11	3	23	2
12	5	24	2

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4. DECOMPOSITION LOSS

Loss through decomposition is listed below for all rotary positions. Column headings represent sampling times of the various bubbler tubes with decomposition tabulated as percent for each tube.

Pos.#	12 INCH HEIGHT						
	0-2	2-4	4-6	6-8	8-10	10-12	12-20
6	100	88	100	28	-	44	100
7	11	-	-	-	100	100	-
8	-	-	-	100	-	28	100
9	-	-	-	100	-	84	76
10	100	-	-	9	-	-	-
18	100	100	77	76	52	-	76
19	-	36	-	28	28	52	-
20	100	-	-	100	-	-	-
21	-	40	12	57	-	28	52
22	52	77	76	100	-	68	100
26	-	68	32	-	84	76	-
27	-	100	100	100	100	100	100
28	76	-	-	68	76	-	-
29	9	78	100	-	76	-	-
30	-	76	-	4	-	76	-

Pos.#	66 INCH HEIGHT						
	0-2	2-4	4-6	6-8	8-10	10-12	12-20
6	67	4	-	-	-	52	52
7	78	-	80	78	-	-	9
8	78	67	-	100	-	88	100
9	38	-	-	-	9	76	100
10	-	-	-	-	100	28	-
18	88	-	-	88	100	76	-
19	-	4	-	-	52	-	-
20	-	-	-	100	-	100	-
21	-	78	52	25	56	68	76
22	88	-	76	-	28	-	-
26	100	100	32	100	-	100	32
27	-	100	100	100	-	88	-
28	100	100	100	78	100	-	100
29	4	4	-	-	-	-	-
30	-	-	90	76	100	4	100

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(SJPR No. 176)

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APPENDIX E

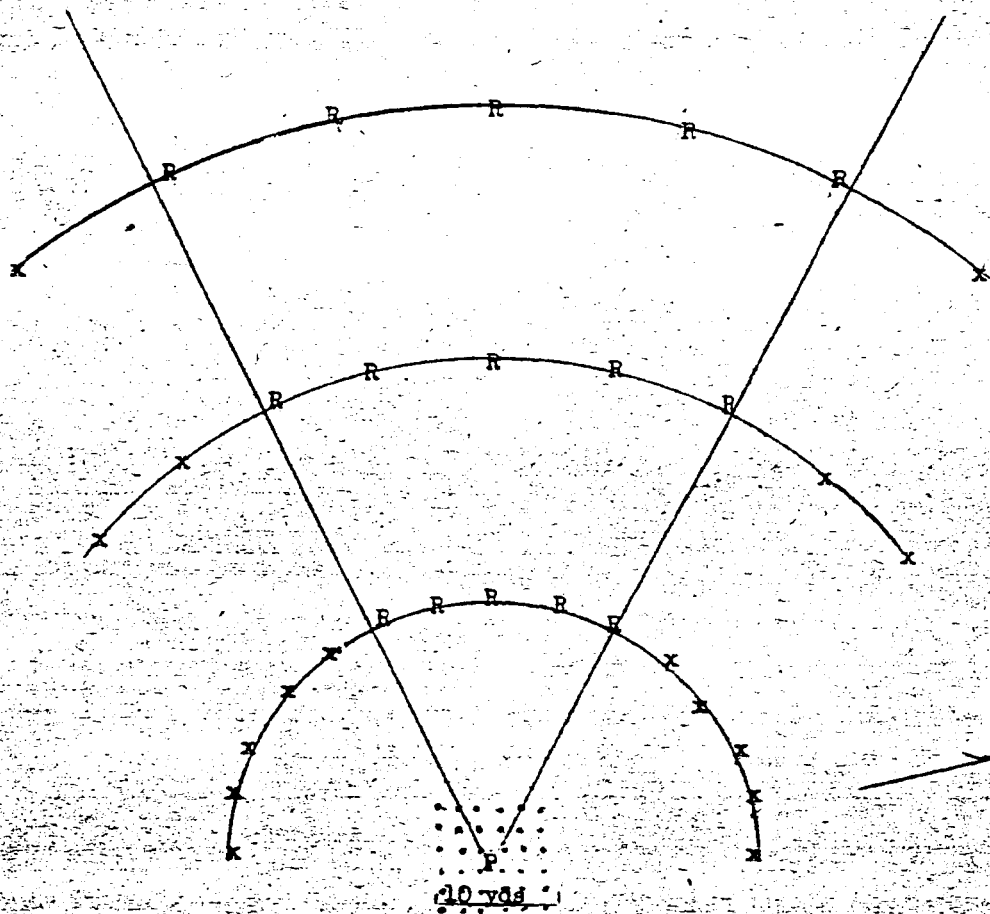
RESULTS OF PHASE 4

UNCLASSIFIED

CLASSIFIED

Time of Test: 0500 Hours, 10 August 1949

Burning Time: 9.3 minutes



Test Area #4

- P - E23 Smoke Pot
- R - Rotary Sampler
- x - Total Dosage Pump
- . - Jump Card

METEOROLOGICAL DATA:

T_{2.0M-T} 0.3M⁻ -0.1°C
 (Neutral)
 Wind Velocity: 5 mph E
 Temperature: -80.9°F
 R_e
 P_i

MUNITIONS DATA:

One E23 Smoke Pot, M-5,
 Mod.1, EA6-48, Lot No.
 4847-51-3, filled 18.0
 lbs. HD (dyed 0.50%
 pt Oil Red) static-
 fired in open.

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Time of Test: 0500 Hours, 10 August 1949

Burning Time: 9.3 minutes

Time	Temperature, °C					Wind		R.H.	Cloud
	Soil	0.1m	0.3m	1.0m	2.0m	Dir	Speed		Coverage
0430	27.3	26.9	27.4	27.3	27.3	E	8mph	84%	.2
0445	27.2	26.8	27.0	27.1	27.2	E	8	82	.3
0500	27.3	26.8	27.1	27.2	27.0	E	5	85	.3
0505	26.8	26.9	26.9	26.9	26.9	E	6	85	.3
0510	27.0	27.1	27.0	26.8	26.9	E	9	84	.2
0515	26.7	27.1	27.1	27.1	27.0	E	8	82	.2
0520	26.7	26.9	26.9	26.9	27.0	ENE	5	83	.1
0525	27.0	27.0	26.9	27.0	27.0	ENE	5	84	-

The Meteorology Station was set up 35 yards north of the smoke pot.

MUNITIONS DATA:

One E23 Smoke Pot, M-5, Mod.1,
EA6-48, Lot No. 4847-51-3, filled
18.0 lbs. HD (dyed 0.50% DuPont
Oil Red) statically fired in open.

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SJP Report No. 176

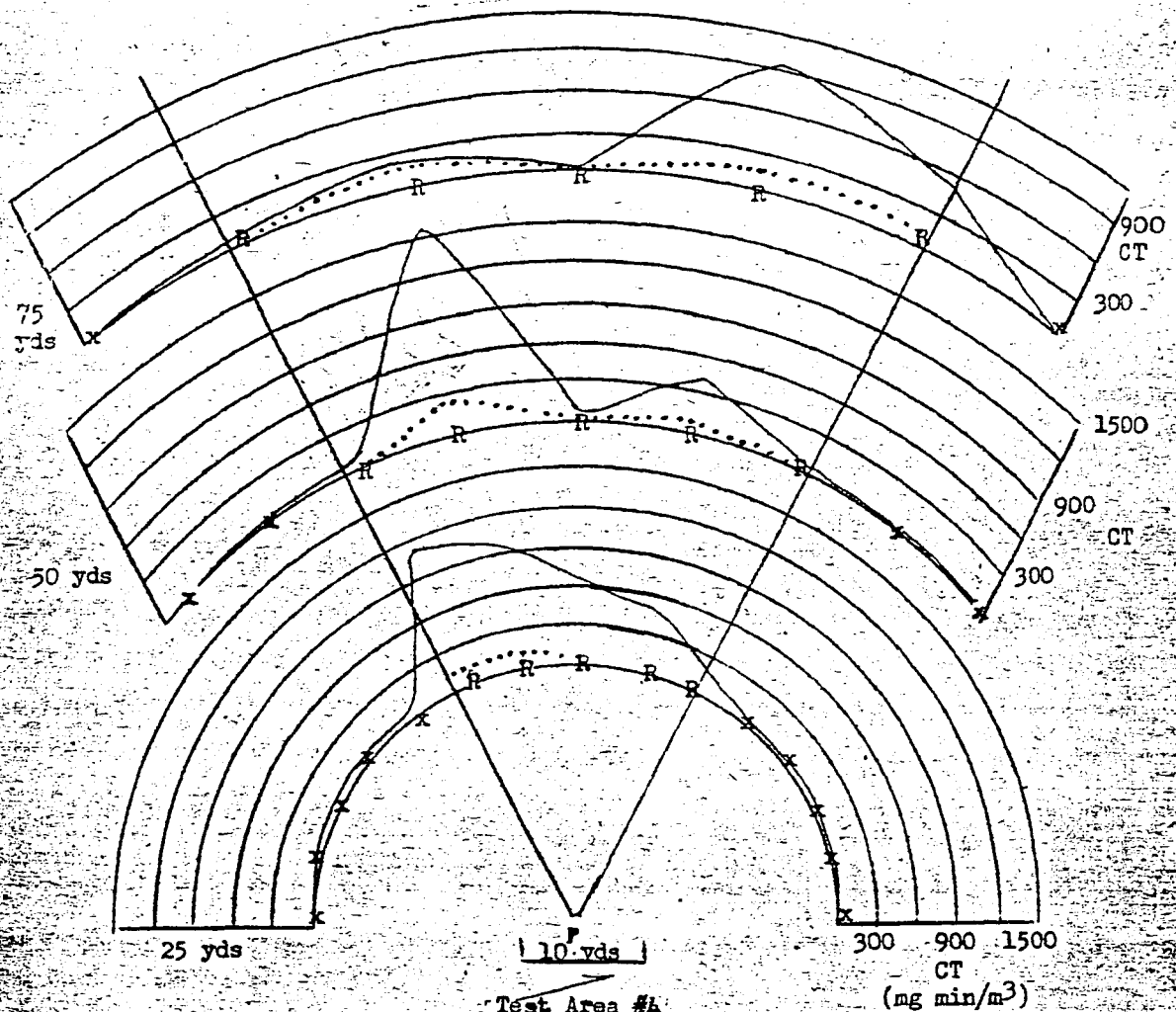
Chart No. 2E

HD VAPOR DOSAGE PROFILES PRODUCED BY SINGLE E23 SMOKE POT

Twelve-inch Sampling Height

Time of Test: 0500 Hours, 10 August 1949

Burning Time: 9.3 minutes



SIP Report No. 176

~~CANCELLED~~

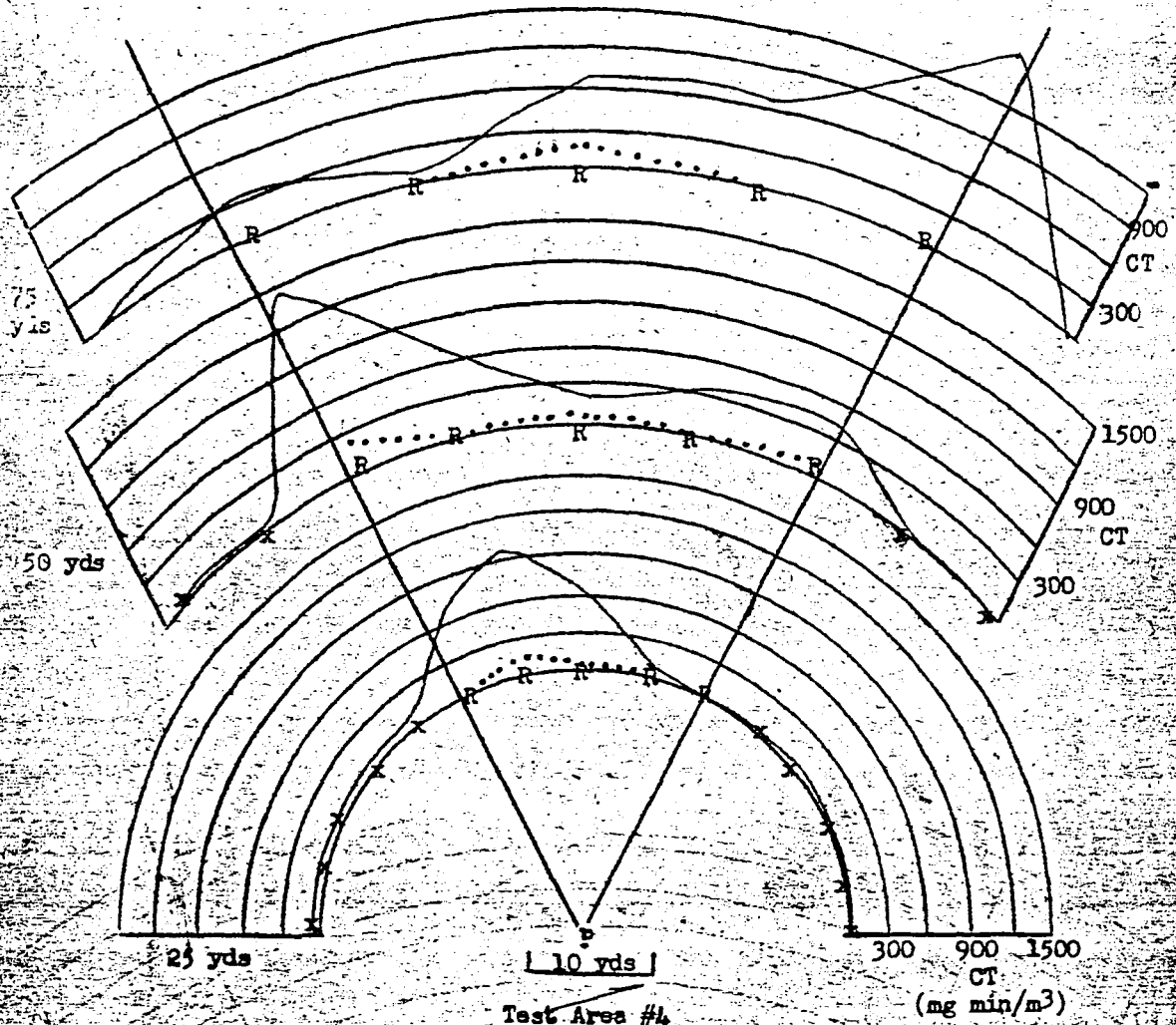
UNCLASSIFIED

HD VAPOR DOSAGE PROFILES PRODUCED BY SINGLE E23 SMOKE POT

Sixty-six Inch Sampling Height

Time of Test: 0500 Hours, 10 August 1949

Burning Time: 9.3 minutes



- P - E23 Smoke Pot
R - Rotary Sampler
x - Total Dosage Pump
.... - 0-2 minutes
— - 0-20 minutes

METEOROLOGICAL DATA:

$T_{2.0M} - T_{0.3M} = -0.1^{\circ}\text{C}$
(Neutral)
Wind Velocity: 6 mph E
Temperature: 80.4°F
Relative Humidity: 85%

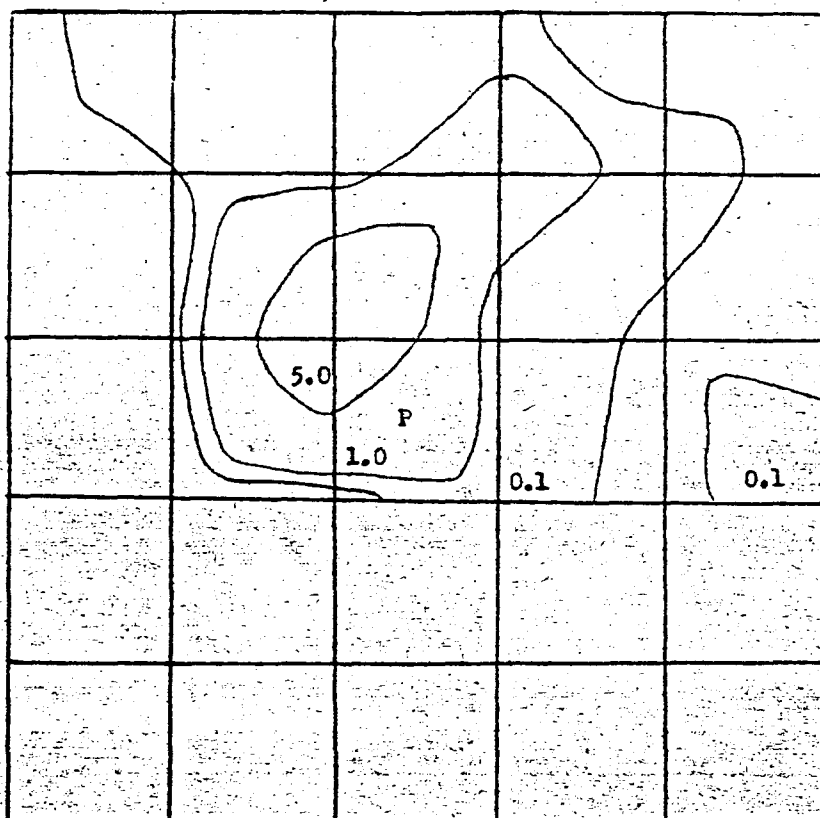
MUNITIONS DATA:

One E23 Smoke Pot, M-5, Mod.1,
EA6-48, Lot No. 4847-51-3,
filled 19.0 lbs. HD (dyed 0.50%
DuPont Oil Red) statically
fired in open.

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UNCLASSIFIED
HD GROUND CONTAMINATION CONTOURS PRODUCED
BY SYMULE E23 SMOKE POT

Dosages in Grams per Square Meter
 Time of Test: 0500 Hours, 10 August 1949 Burning Time: 9.3 minutes



Test Area #4

AREA IN SQUARE YARDS
INCLOSED BY CONTOUR LINES

<u>DOSAGE</u>	<u>AREA</u>
0.1	38 plus
1.0	14.4
5.0	3.6

METEOROLOGICAL DATA:

T 2.0M - T 0.3M = -0.1°C
 (Neutral)
 Wind Velocity: 6 mph E
 Temperature: 80.4°F

MUNITIONS DATA:

One E23 Smoke Pot, M-5,
 Mod.1, EA6-48, Lot No.
 4847-51-3, filled 18.0
 lbs. HD (dyed 0.50%
 DuPont Oil Red) static-
 ally fired.

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1. ROTARY SAMPLES

Rotary samplers were numbered from right to left across each sampling arc beginning with the 25-yard arc. Total dosage pumps and rotary samplers were numbered consecutively, therefore the first rotary position is number six. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution.

Pos.#	12 INCH HEIGHT						
	0-2	0-4	0-6	0-8	0-10	0-12	0-20
6	0	0	0	0	0	260	260
7	0	0	0	156	403	403	520
8	0	0	0	0	0	0	299
9	182	364	507	598	689	806	974
10	195	390	585	780	949	1027	1131
18	0	65	65	65	65	65	65
19	104	169	234	286	286	390	390
20	0	0	0	0	0	0	39
21	286	507	754	949	1170	1391	1573
22	0	0	0	52	52	143	143
26	169	169	169	286	286	442	585
27	195	286	377	481	481	611	923
28	0	0	0	0	0	0	0
29	221	221	221	221	221	221	221
30	0	0	0	0	0	39	39

Pos.#	66 INCH HEIGHT						
	0-2	0-4	0-6	0-8	0-10	0-12	0-20
6	0	0	0	0	0	0	0
7	0	39	39	65	65	130	130
8	26	26	65	260	416	533	598
9	169	351	533	572	624	624	923
10	0	-	182	325	455	585	715
18	104	208	351	455	455	455	455
19	0	0	0	0	104	208	338
20	91	91	91	195	195	195	195
21	0	0	130	325	481	598	741
22	208	455	702	702	949	1157	1495
26	0	1677	1677	1768	1846	1846	1846
27	0	130	260	390	481	624	728
28	234	234	533	533	637	728	728
29	0	78	78	78	78	78	78
30	0	0	0	0	0	65	325

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2. TOTAL DOSAGE PUMPS

Total dosage pumps were numbered with the rotary samplers from right to left across each sampling arc beginning with the 25-yard arc. Column headings are sampling times in minutes. Figures listed are in terms of micrograms of HD/10cc of collecting solution. Also listed for each tube is percent decomposition of agent.

12 INCH HEIGHT			66 INCH HEIGHT		
Pos.#	0-20	% Decomp.	Pos.#	0-20	% Decomp.
1	65	-	1	65	26.5
2	65	-	2	65	-
3	65	-	3	65	-
4	65	-	4	65	-
5	65	-	5	65	-
11	65	-	11	65	-
12	65	-	12	65	-
13	52	-	13	26	-
14	52	-	14	52	40.7
15	52	-	15	65	-
16	52	-	16	0	100
17	52	-	17	52	40.7
23	26	-	23	26	78
24	0	-	24	0	100
25	0	-	25	0	-
31	0	100	31	0	-

3. GROUND CONTAMINATION

As in previous phases, tambourines were placed in the centers of the first twenty-four jump cards in the sampling area. Jump card positions were numbered consecutively one through thirty-six beginning with the upper left corner of the layout. Tambourine results follow.

Tamb.#	mg HD/tamb.	Tamb.#	mg HD/tamb.
1	.8	13	1.6
2	5.8	14	0
3	26.6	15	254.0
4	3.3	16	5.0
5	0	17	1.6
6	.8	18	0
7	0	19	.8
8	.8	20	.8
9	2.5	21	1.6
10	61.6	22	5.0
11	4.1	23	.8
12			

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4. DECOMPOSITION LOSS

Loss through decomposition is listed below for all rotary positions. Column headings represent sampling times of the various bubbler tubes with decomposition tabulated as percent for each tube.

Pos.#	12 INCH HEIGHT						10-12	12-20
	0-2	2-4	4-6	6-8	8-10			
6	100	100	100	-	100	-	-	-
7	100	100	100	-	-	100	-	-
8	-	100	100	-	100	100	-	-
9	12.9	-	-	-	45.5	-	-	-
10	-	-	-	-	-	47	11.6	-
18	-	26.5	100	100	100	100	100	-
19	11.6	-	55.8	-	100	37.6	100	-
20	100	100	100	100	-	-	55.9	-
21	-	-	-	-	-	-	-	-
22	-	-	100	-	-	-	-	100
26	-	-	-	-	-	-	-	-
27	6.7	45.4	-	-	-	-	-	-
28	100	-	100	100	-	100	100	-
29	-	-	100	-	100	100	100	-
30	-	-	-	-	100	66.9	-	-

Pos.#	66 INCH HEIGHT						10-12	12-20
	0-2	2-4	4-6	6-8	8-10			
6	100	100	-	100	100	100	100	-
7	100	-	-	78	-	26.5	100	-
8	70.6	100	33.8	-	-	-	-	-
9	-	-	-	76.6	68.8	100	-	-
10	-	-	-	-	-	-	-	-
18	-	-	-	-	100	100	100	-
19	100	100	100	-	-	11.6	-	-
20	38.2	100	100	-	100	100	100	-
21	-	-	-	-	-	-	29.4	-
22	-	-	-	-	-	-	-	-
26	-	-	100	22.7	-	100	-	-
27	100	-	-	-	-	-	-	11.6
28	-	100	-	-	-	-	-	100
29	-	-	-	-	100	100	100	-
30	100	100	100	-	100	-	-	-

UNCLASSIFIED