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PROJECT OFFICERS REPORT—PROJECT 2.5

ALPHA SURVEY

William S. Johnson, Sr.,
Project Officer

Eberline Instrument Corporation
Santa Fe, New Mexico

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This publication is the author(s) report to Director, Defense Atomic Support Agency; Director, Division of Military Application, Atomic Energy Commission; and Director, Atomic Weapons Research Establishment, United Kingdom Atomic Energy Authority, of the results of atomic weapons experimentation sponsored jointly by the United States-United Kingdom. The results and findings are those of the author(s) and not necessarily those of the Department of Defense, Atomic Energy Commission, or United Kingdom Atomic Energy Authority. Accordingly, reference to this material must credit the author(s). This document is under the control of the Department of Defense and, as such, may only be reclassified or withdrawn from circulation as appropriate by the Defense Atomic Support Agency; Atomic Energy Commission, Division of Operational Safety; or the Atomic Weapons Research Establishment.

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ABSTRACT

Surface plutonium contamination patterns were developed following each of four experiments simulating different storage configurations of weapons in accidental non-nuclear detonations. The weapon arrays included single and multiple units in the open and multiple units in storage conditions with two and eight feet of earth over burden. From 8 to 65 square miles of land area on the Tonopah Test Range, Nevada, were surveyed after each experiment.

A common surface, 1-foot by 1-foot square brushed concrete pads, was used for alpha radiac measurements. Over 7,500 such pads were monitored by project personnel. Basic measurements were obtained with the portable gas proportional alpha counter. Supplementary and correlative measurements were made with portable and mobile low energy gamma detectors. Contamination contours resulting from alpha survey operations are expressed in cpm per probe area of 60 cm^2. Conversion of field data to commonly used contours in units of $\mu g/m^2$ was not considered advisable at the time of this report since considerable doubt exists concerning the use of a single conversion factor. With the calibration procedure used, the minimum detectable level of the portable low energy gamma detector (PAC-1S/PG-1)

was found to be equivalent to approximately the 80,000 cpm/ 60 cm^2 contour by alpha survey. The more sensitive and sophisticated vehicle-mounted gamma scanner was able to reproduce a contour as low as the 1,000 cpm/60 cm^2 iso-intensity contour by alpha survey.

Operating in accessible terrain similar to that encountered on the Tonopah Test Range, the mobile equipment could define a plutonium contamination pattern in 30 minutes, whereas presently established alpha survey procedures required from four to six hours plus additional manpower and equipment. The low energy gamma detection technique for weapon grade plutonium may be applied to weapon accidents for preliminary and rapid situation evaluations when the technique is used by trained personnel.

PREFACE

Project 2.5 was fortunate in obtaining the services of several agencies. Personnel from the Nuclear Defense Laboratory, Edgewood Arsenal, Maryland; Mobile Construction Battalion Center, Davisville, Rhode Island; and the United Kingdom Royal Air Force performed the field monitoring. Major R. T. Trolan, CmlC, USA, assembled, trained, and coordinated these units into an effective field organization.

Special mention is due also to the Radiological Safety Division, Reynolds Electrical and Engineering Co., Inc., Mercury, Nevada, for its willingness to assist the project, particularly in providing field training exercises.

The administration, engineering, production, and procurement departments of the Eberline Instrument Corporation put forth extra effort to meet the restrictive time schedule of Operation Roller Coaster. The personnel in these departments were vital members of the total team even though most of them never participated in the field experiments.

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CHAPTER 1

INTRODUCTION

Operation Roller Coaster was a field operation during which weapons grade plutonium was widely scattered to simulate a distribution similar to that expected during the non-nuclear detonation of plutonium-bearing devices or weapons. It was the purpose of Project 2.5 to define and measure the limits of this plutonium distribution and to assist in accountability studies by providing data concerning the amounts of plutonium that dispersed from the resultant cloud within the limits of the test array.

During the planning phase of Operation Roller Coaster, it was deemed advisable to pursue the basic objectives of Project 2.5 by the sub-division of project personnel into three distinct groups, all working toward the common objectives but utilizing different techniques and procedures. This sub-division resulted in groups with the following tasks:

1. Alpha survey by portable field instruments.
2. Low-energy gamma survey by vehicle-mounted gamma scanner.
3. Plutonium fallout survey with filter disc collectors.

Operation Roller Coaster consisted of four separate

events simulating various configurations of weapon storage and environmental situations.

Event/Abbreviation	Configuration*	D-Day
Double Tracks - DT	1 unit unconfined	0255, PST 15 May 1963
Clean Slate I - CS I	9 units unconfined	0417, PST 25 May 1963
Clean Slate II - CS II	19 units, igloo, 2-foot earth cover	0347, PST 31 May 1963
Clean Slate III - CS III	19 units, igloo, 8-foot earth cover	0330, PST 9 June 1963

*Only one unit in each event contained plutonium; thus, the plutonium available for distribution was considered essentially constant. The multiple units contributed a variable non-nuclear explosive yield and additional uranium.

Project 2.5 personnel participated in all four events of Operation Roller Coaster. Chapters 2, 3, and 4 will discuss the various aspects of each particular field group in each event.

1.1 OBJECTIVES

The objectives of Project 2.5 were:

1. Radiac surveys of plutonium-contaminated areas and the establishment of contamination level contours.
2. Feasibility investigation of portable and mobile low-energy gamma detection techniques for plutonium contamination over extended land surfaces.

Correlative studies to relate instrument readings to absolute surface levels of contamination were the joint

effort of this project and Project 2.3. As well, some effort was expended to collect deposition on filter discs also as a back-up for field survey data.

1.2 BACKGROUND

Earliest investigations of soil deposition levels from one-point weapons accidents were made during the 56 Project of November 1955 and January 1956 (Reference 1). These were of little value to Operation Roller Coaster because of the limitations of terrain, meteorology, instrumentation and operational conditions prevailing at that time. Bearing directly on Operation Roller Coaster was TG-57 of April 1957 conducted at the Nevada Test Site (Reference 2). This was a single event which included a project similar to Project 2.5.

The results of TG-57 established the validity of measuring alpha contamination levels on a common surface and that a suitable surface was a brushed concrete pad. The actual dimensions of the pad were 10 inches by 10 inches in TG-57, but this area was not a critical factor. This technique was included in all events of Roller Coaster with a higher density of pad surfaces than in TG-57 and utilized similar pads one foot square.

The low-energy gamma technique for Pu^{239} detection has been investigated by several groups. The Hanford

Symposium on the Biology of the Transuranic Elements, Richland, Washington, May 28 to 30, 1962, discussed this technique at some length (Reference 3).

In 1960 the Eberline Instrument Corporation, Santa Fe, New Mexico, developed a plutonium gamma probe for field use and evaluated its performance in selected areas of the Nevada Test Site (Reference 4). Subsequent evaluations have occurred from time to time by the personnel of the Radiological Safety Division, Reynolds Electrical and Engineering Co., Mercury, Nevada (Reference 5). Several contaminating events of Operation Dominic proved this probe to be a useful tool in accident situations (Reference 6).

Operation Roller Coaster supplied excellent field conditions to pursue further the low-energy gamma technique and permitted coincident alpha measurements. Similarly, experience to date indicated sufficient confidence in the technique to warrant its incorporation into a vehicle-mounted configuration.

The TG-57 alpha-monitoring data were reported in units of micrograms of Pu^{239} per square meter of surface area ($\mu g/m^2$). This unit has come into rather general usage since that time. However, factors for converting actual instrument readings to disintegration rates have not been developed for Operation Roller Coaster situations.

The factors from TG-57 may be incorporated into this report by the reader at his own risk

CHAPTER 2

ALPHA SURVEY, PORTABLE RADIAC

All project personnel received operational and administrative briefings at least thirty days in advance of the first event. This was followed by training exercises in the classroom and in actual alpha contaminated areas. Emphasis was placed on instrument techniques and on the importance of data reliability. Most all of the project personnel had been exposed to varying degrees in the radiological safety aspects of alpha monitoring before assignment to Operation Roller Coaster. It was considered essential that this experience be tempered by the objectives of the project in order that these objectives would not be compromised by prior instruction or directives. Considerable effort was made to impress on project personnel that this was a scientific experiment and not a radiological safety exercise.

2.1 INSTRUMENTATION

The basic instrument for determining surface alpha contamination was the Eberline Instrument Corporation Model PAC-3G Portable Gas Proportional Alpha Counter. This instrument was selected because of its availability in quantity, the performance of an earlier model in the

TG-57 (Model PAC-1G), the linear characteristics of its probe, its plateau-type operation for stability, and, the summation of these features, its capability to provide reliable and reproducible information. The PAC-3G is shown in Figure 2.1.

All portable instruments were made available from existing inventories at various DOD installations. They were accumulated at the manufacturer's main plant in Santa Fe, New Mexico, where thorough inspection, repair, and checkout were performed. This placed them in essentially new condition for Roller Coaster. Three minor modifications were incorporated in the Model PAC-3G at this time. First, the reset button, which speeds the return of the meter to zero after an upscale response, was moved from the top cover to a position on the forward end of the carrying handle. This was a convenience change found to be advantageous when operating in the field with bulky gloves. The second modification lengthened the response time on the most sensitive range (0 to 1,000 counts/min) of the instrument from about ten seconds to about one minute. This alteration was considered necessary to add statistical significance to readings made on this range. Lastly, the four screws at each corner of the probe face were replaced by fillister head screws. This provided

feet so that the probe could be positioned reproducibly above an alpha-action surface to insure reproducible geometry during monitoring and calibration operations while minimizing the chances of probe face contamination.

The Model PAC-3G uses specially purified propane gas for the counting atmosphere. This gas is contained, as a liquid under pressure, in a small cylinder mounted in the base of the instrument. The flow of propane to the detection chamber is controlled by a three position (OFF, OPERATE, FLUSH) gas regulator valve. Normal flushing time is less than five minutes, at which time the instrument is stabilized for monitoring. It was the prescribed practice of a monitoring team to leave the regulator valve in the OPERATE position continuously after adequate flushing rather than turn it to OFF after each set of readings was obtained.

The Model PAC-3G has a detecting probe with 60 cm^2 of sensitive measuring area. Double aluminized Mylar, 0.85 mg/cm^2 in thickness, is used for window material. Instrument electronics provides a variable high-voltage power supply from approximately 1,500 volts to 1,900 volts. Each instrument used by the project was found to have a useable plateau length of 200 volts and was set at the mid-point of that plateau.

The basic portable instrument for determining surface contamination by low-energy gamma detection was the Eberline Instrument Corporation Model PAC-1S coupled with the Model PG-1 Plutonium Gamma Probe. This instrument and probe combination was selected because it was unique in the United States for this application. It is shown in Figure 2.2.

The Model PG-1 Probe consists of a 1-inch photomultiplier tube, crystal, and window encased in a ruggedized housing. The crystal is a 1-mm thick NaI (Tl) phosphor covered with 0.001 mm double aluminized Mylar.

2.2 CALIBRATION

Maintenance and calibration facilities for all portable field survey equipment were set up in a trailer at base camp and technicians furnished by various organizations were supervised by Eberline personnel. Complete repair, calibration, and testing facilities were available. Figure 2.3 shows a view of these facilities from the doorway. PAC-3G instruments were checked for plateau setting and then calibrated against primary Pu^{239} extended area sources (Figure 2.4). These sources were standardized within ± 2% of absolute 2π alpha emission rate by internal proportional counting, using equipment previously cross-referenced with the National Bureau of

Standards within ± 1 percent. Instrument response was adjusted to within 10 percent of the 2 π alpha emission rate per 60 cm^2 of the appropriate source.

Calibration and maintenance procedures for the PAC-3G were as follows:

1. Check battery voltage under load.
2. Check gas supply, flush probe, and check probe face for punctures.
3. Remove instrument power supply module and attach unit to Mosely X-Y Plotter and external variable power supply.
4. Run an alpha plateau using a 1-inch diameter Pu^{239} alpha source. Observe the mid-plateau voltage. Disconnect plotter and external power supply and re-install power supply module. Connect electrostatic voltmeter to instrument and set high voltage at mid-plateau.
5. Check the gas flow in both flush and count positions.
6. Check instrument background.
7. The instrument is ready for calibration. The primary calibration sources are EIC large area (6 cm by 20 cm) plates, coated with electrodeposited Pu^{239} and standardized to within ± 2 percent. Calibration is accomplished by adjust-

ing potentiometers within the instrument to give the 2 π source strength readings.

8. Place the beta source under the probe and observe instrument response, which should be zero to insure proper discrimination against beta radiation.
9. Before issue, install a full bottle of propane gas.

The procedures outlined in Steps 1 through 9 were followed for all instruments issued, prior to each of the four shots scheduled. For interim use of instruments after D-day, the same procedure was followed, except that the plateau phase was not run. Figure 2.5 shows a technician performing calibration operations.

A set of secondary Pu^{239} sources, each 1 ⅛ inches in diameter, was provided to each field team (Figure 2.6). The corresponding instrument response to these sources after primary calibration was noted. The field technique was to check this calibration after reading each concrete pad on the range in which the pad readings fell. The field data form provided space for inserting this information (Figure 2.7).

The only field problems of any significance for PAC-3G maintenance, other than routine calibration and plateau checks, were probe face puncture and

probe face contamination. After the survey team personnel became familiar with the instrument and its proper use, these problems were minimized, with probe face contamination being more prevalent.

The procedure for initial and subsequent calibrations of the Model PAC-1S/PG-1 gamma-sensitive combination utilized the three sources in the single rectangle on the right of Figure 2.6. This was an arbitrary procedure because of the limitations of source size and strength. Instrument background was set to read approximately 2,500 cpm by varying the electronic discriminator potentiometer. This prevented the use of the most sensitive range of 0 to 2,000 cpm. The PG-1 probe, connected to the PAC-1S chassis, was placed in contact with the sources successively, and the calibration potentiometers for each scale were varied so that the instrument response was 3 percent of the 2 π alpha emission rate. While this technique does not provide absolute calibration for field applications, it does permit uniform readings between instruments in the absence of appropriately large area, uniform sources.

In the case of the low energy gamma reading, it was necessary to observe background radiation interference at each station. This was accomplished by directing the sensitive face of the probe upward, reading the instrument response and recording the data as background on

the form (Figure 2.7). This was performed as illustrated in Figure 2.8. The prescribed configuration for a low energy gamma probe reading was over the center of the concrete pad at a height of 30 inches.

2.3 PROCEDURES

The array of monitoring stations; i.e., a 12-inch by 12-inch brushed concrete pad (Figure 2.9), was similar for each of the four events. These arrays differed only in the distance downwind to which they extended (Figure 2.10). A single concrete pad was placed at $3/4^{\circ}$ intervals along each arc in the downwind quadrant (Figure 2.11) and at each grid intersection in the rectangular sectors (Figure 2.12). This meant there were 121 pads on each arc downwind and rectangularly spaced 50, 100, and 250 feet on the A, B, and C grids, respectively, for the close-in areas. All stations were located and marked, using a surveyor's transit and chain. Pads were then stenciled with location designation; e.g., D-020 indicating D arc, Station #20. The concrete pads were then wrapped in waterproof paper which was removed on the afternoon of D-1 after all dust generating operations were complete. In the event of shot cancellation, pads were inspected on each subsequent D-1 and swept clean of dust or debris when necessary. To verify accuracy of placement, all

pads were accountable, and random checks were made independently by supervisory personnel.

The close-in grid arrays were essentially the same for each event, with a concrete pad being placed at the intersection of each grid line for grids A, B, and C except for CS II and CS III, where the earth overburden and construction made it impractical to instrument the A Grid (Figure 2.12).

Two- and three-man teams were assigned specific sectors or arcs. Each team was equipped with a two-way radio, 3/4-ton weapons carrier, a set of calibration sources, and a set of portable alpha and low energy gamma radiacs (PAC-3G, PG-1/PAC-1S). All operations were performed with personnel in anti-contamination clothing (Figure 2.13) as specified by the Test Manager's Radiological Safety Standard Operating Procedures. Portable survey equipment was placed in thin polyethelene bags, and the cable was wrapped with masking tape to reduce the contamination problem on return from the field (Figure 2.14).

Teams assigned to the rectangular grid stations around GZ remained at the Control Point (CP) until the completion of an independent survey by the explosive safety team. Teams assigned to the downwind arcs assembled at the Re-entry Control Point (RCP) until daylight.

The vehicle-mounted low-energy gamma devices were positioned at the RCP as well. These two vehicles moved across their respective arcs, one close-in and one far out. The time of entry was delayed until deposition was complete along the arcs of interest. The mission was to obtain contamination boundaries and hot line information. This information was radioed back to the project control point where it was plotted.

Because Roller Coaster detonations occurred in the pre-dawn hours, this gamma survey was well under way and supplying useful data before the alpha survey teams could proceed.

At daybreak, or shortly thereafter, the field teams were directed to proceed with their monitoring assignments, modified as necessary by the preliminary data received from meteorological and mobile survey units. In this manner the stations with reasonable expectancy of yielding positive contamination data were investigated first. The monitor placed the probe in three locations on the concrete pad, so that screw heads were in contact with the surface (Figure 2.15). After these readings were recorded, a calibration check was made in the same geometry, and the results recorded. It should be noted that the calibration check was made only on the scale being used, not over all ranges each time. In this time, also, the two vehicle-mounted

detectors extended their traverses of the array to provide a continuous scan of all arcs.

2.4 EVENT PARTICIPATION

Alpha survey teams participated in all four events of Operation Roller Coaster. Details of their participation in each event are outlined in the ensuing paragraphs

2.4.1 Alpha Survey Operations in Double Tracks Event (0255, 15 May 1963). Ten alpha monitoring teams, each consisting of two men, were dispatched at daylight to Arcs B through K, where stations were monitored across the fallout area as indicated by the vehicle-mounted gamma scanners. The monitoring runs were made initially from east to west because of the location of the Re-entry Control Point (note ACP position in Figure 2.11). After completing their first arc, which took 2 to 3 hours, the teams left the area for a rest break, and the remaining seven arcs were then monitored in like manner; i.e., across the segment found active by the gamma scanner.

On D+1, remaining pads were surveyed for alpha contamination. Resurveys of the area were conducted on D+3 and D+9 but were limited to every other arc (B, D, F, H, J, L, N, P, and R) and every fifth station location on that arc between 030 and 070, e.g., 030, 035, 040---070.

Concurrent with the arc monitoring, five teams entered the grid array; i.e., the area within 2,000 feet of GZ (Figure 2.12), where a 1-foot-square brushed concrete pad had been located at each intersection of the array.

All grid array teams entered the array from the CP, with one team acting as a control unit. The other four teams followed a zig-zag pattern from north to south with two teams working the C Grid and two teams working the A and B Grids.

Three special pad clusters consisting of 36 of the 1-square-foot concrete pads (6 feet by 6 feet) were placed in three locations 2,000 feet downwind. It was planned to monitor these clusters after detonation for alpha contamination with the Model PAC-3G and for low energy gamma with the vehicle and portable detectors to obtain correlative factors utilizing a common surface of larger area. Unfortunately, on Double Tracks, none of the clusters received a sufficiently high contamination level to produce reliable gamma readings; the alpha activity was likewise low but easily readable with the PAC-3G (Figure 2.16). Low energy gamma measurements were made with a portable instrument (PG-1/PAC-1S) at all station locations during the initial survey. This technique did not yield significant information on the D-day survey due to the general low level of contamination and was discontinued on subsequent surveys

except at a few special locations.

On D+1 it was observed that some locations, especially the GZ pad and its steel plate, were contaminated beyond the limits of the instruments available. Extensive investigations of the immediate GZ area, including the concrete pad, were made on D+3, 4, 5, and 8. Since the Eberline Instrument Corporation had just completed the production of six special alpha probes to be used with the PAC-1S electronics package, these were brought to the site on D+5, complete with sets of five collimating shields. The probes were the Model RASP-1 (Ruggedized Alpha Scintillation Probe) which have an uncollimated viewing area of 5 cm^2 (approximately 7/8 inch diameter). The collimating shields have drilled holes of 3/4, 1/2, 3/8, 1/4, and 1/8 inch diameters, to reduce the active area and consequently increase the range of the instrument. The attenuation factor of each collimator was determined by comparing the reading on 1-1/8-inch disc source with and without the collimator. These factors ranged from 1.8 to 75, respectively. Figure 2.17 presents the results of the Double Tracks GZ survey using this probe. The numbers have no quantitative value, because the effects of self absorption have not been determined. At such levels, gamma detection techniques offer more reliable data (Reference 7).

2.4.2 Alpha Survey Operations in the Clean Slate I Event (0417, 25 May 1963). The Clean Slate I array of monitoring surfaces was the same as for Double Tracks, less Arcs Q and R. This provided some time advantage in surveying which, coupled with the experience gained in Double Tracks, permitted a revision in operational plans. Ten alpha survey teams of two men each were assigned initially to Arcs B, C, D, E, F, H, J, L, N, and P. As the survey of an arc was completed, teams were directed to an intervening arc without leaving the area. Using this technique, the D-day alpha survey of all arcs was completed by H+6 hours. The extremely narrow contamination pattern resulting from Clean Slate I aided this effort since only about 20 stations on each arc came within the 100-cpm boundaries (as determined by the Model PAC-3G).

The GZ grid array was monitored simultaneously with the arc array by four three-man teams. Since all alpha survey data for D-Day was obtained before noon, the deposition pattern on the array was completed by H+12 hours, at which time the project secured for the day. Contamination patterns were plotted as information was obtained from the field during the actual alpha survey as an assistance to other organizations.

On D+1, remaining stations were monitored, and the special pad cluster was monitored for alpha activity later in the

day (Figure 2.18). The GZ area was policed for debris and fragments scattered by the detonation which were collected for laboratory assay in the interest of plutonium accountancy. The initial survey of the concrete pad at GZ was performed on D+1. Monitoring of the 24-foot-square concrete GZ pad was possible only with low energy gamma techniques, as alpha activity was extremely high and very variable with small variations in detector placement. Also, ribbons of sand and dirt were left on the pad by the detonation. These were highly contaminated and difficult to assay by alpha monitoring. Low energy gamma measurements were made over each corner of the pad with the vehicle mounting detectors. These were supplemented at the same and at other locations with the Model PG-1 portable gamma detector. Using the correlative factors already established, alpha equivalents were assigned to areas as shown in Figure 2.19.

2.4.3 Alpha Survey Operations in Clean Slate II Event (0347, 31 May 1963). The Clean Slate II array of monitoring surfaces extended only to 17,500 feet downwind and included 11 arcs as opposed to 17 arcs to 48,500 feet on Double Tracks and to 15 arcs to 37,500 feet on Clean Slate I. Ten alpha survey teams were released at daylight from the RCP to monitor assigned arcs. The remaining two arcs were surveyed immediately thereafter by those teams which completed the initial arc the

earliest. The entire alpha survey of arcs was completed by H+6 hours.

Early gamma and alpha survey information indicated a wide pattern of contamination extending throughout the instrumented array. An apparent hot line between Stations 020 and 040 was indicated by the vehicle-mounted scanner. The pattern of monitoring for alpha contamination was modified from previous events to facilitate rapid surveying of this large area. Field teams were instructed to proceed from west to east, monitoring every fifth pad to Station 040. From this location each pad was monitored until a level of 100 cpm per PAC-3G probe area was reached. This was a fortunate change in plans because the alpha survey in this fashion was completed before an unexpected heavy rain storm hit the array at H+9 hours. Survey of A and B grids was not completed before the rain, and consequently some information in the GZ area was lost. The survey would have been little over half finished by this time had every station been monitored. This rain plus that on ensuing days made additional alpha surveys impractical. The cluster of 36 concrete pads at Station CP05 was monitored on the morning of D-Day with the PAC-3G and portable low energy gamma detector, Model PG-1. The results are presented in Figure 2.20.

2.4.4 Alpha Survey Operations in Clean Slate III Event (0330, 9 June 1963). The Clean Slate III array of monitoring surfaces was identical with that employed for the Clean Slate II event.

Ten alpha survey teams were released at daylight from the Re-entry Control Point to monitor assigned arcs. The remaining arc was surveyed immediately thereafter. Two teams also monitored to the south of the array during this period. The Clean Slate I area was located almost due south of Clean Slate III area, and clean concrete pads had been placed down the east and west radials at Arcs B through P of Clean Slate I to provide additional monitoring surfaces in the event the fallout pattern intercepted this area. No contamination was found on these surfaces. The entire alpha survey was completed by H+6 1/2 hours. Because of prediction of rain in the afternoon of D-day, alpha monitoring procedures were again modified based on early gamma survey information, to preclude loss of data. The alpha survey teams were instructed to proceed in a west to east direction, monitoring every fifth pad to Station 045. From this station on, each pad was monitored until a level of 100 cpm per PAC-3G probe area was reached.

The 36 pad clusters at CP05 and CP06 were in the contamination pattern, with alpha contamination levels aver-

aging 80,000 and 12,500 cpm/60 cm^2 probe area. They were also measured with the vehicle-mounted gamma scanner and the PG-1/PAC-1S. The results are shown in Figures 2.21 and 2.22.

The rain materialized as predicted later on D-day, obviating further alpha monitoring operations. Only low energy gamma surveys were conducted later.

2.5 DISCUSSION

Alpha survey as a method of establishing contours of contamination is a very time consuming process and is very dependent on other factors such as soil type, weathering, and surface variations. Nevertheless, it has been accepted as a standard technique and was used extensively by Project 2.5. In all, 7,597 pads were monitored in the four events, with three readings being recorded for each pad. It was necessary to take soil samples near a number of pads in order that absolute deposition of plutonium could be determined by radiochemistry. Radiochemistry of the pad surface itself was not deemed advisable because of the difficulties of dissolving the concrete pad and the fact that wind and weathering may have degraded or enhanced the actual deposition.

Soil and other samples taken independently by Project 2.3 were to be anlayzed radiochemically for

correlation with PAC-3G readings. Unfortunately, a great deal of trouble was encountered with soil samples, and it was found to be virtually impossible to obtain a small representative aliquot of soil. In lieu of soil samples, sticky films were analyzed to establish correlation factors, but the results of these analyses were not available at the time of writing this report.

2.6 RESULTS

Field data were reduced to closed contour patterns on a large map of the station array. Two presentations were available, one based on portable instrumentation and the other based on the surveys of the vehicle-mounted detectors. Each concrete pad was monitored in three locations with the Model PAC-3G instrument. The uniformity between these three measurements was poor on DT, but improved on CS I and became very uniform on CS II and CS III. All values have been included in Appendix A. Alpha contamination contours for each of the four events are presented in Figures 2.23 through 2.26. These are smoothed isopleths based on average readings which neglect minor perturbations from individual stations. Arc profiles were developed as an aid in final assessment of contour values, and Figure 2.27 is a typical example for Arc B, Clean Slate II on D-day.

The contamination levels are expressed in alpha cpm per

60 cm^2 probe area for the Eberline PAC-3G, since correlation factors are uncertain. Two separate plots are presented for each event, one for the close-in area (-2,000 feet to +2,500 feet from GZ) as shown in Figures 2.28 through 2.31 and one of the entire downwind grid area (Figures 2.23 through 2.26).

Resurvey by alpha monitoring demonstrated the rapid degradation of contamination levels due to weathering, blowing sand, and migration of contaminant below the surface. Figure 2.32 is a graphical presentation of alpha survey measurements on Arc C of the Clean Slate I event on D-day and on D+3. Similar results were obtained on other events and on other arcs.

In order to insure that no inadvertent nuclear yield was produced in any of the events of operation Roller Coaster, a telemetered gamma radiation detector was installed approximately 200 feet from ground zero of each event. This equipment consisted of the Eberline Hilem, which provides two ranges, 0 to 100 r/hr and 0 to 1,000 r/hr. Even though chances of a nuclear yield were extremely low, it was deemed advisable to install such equipment to preclude the possibility of personnel being sent into an unsuspected gamma radiation field. This point is brought out to emphasize that the first radiological measurement of importance, which should be made at the

site of a nuclear accident, is for the absence or presence of gamma radiation.

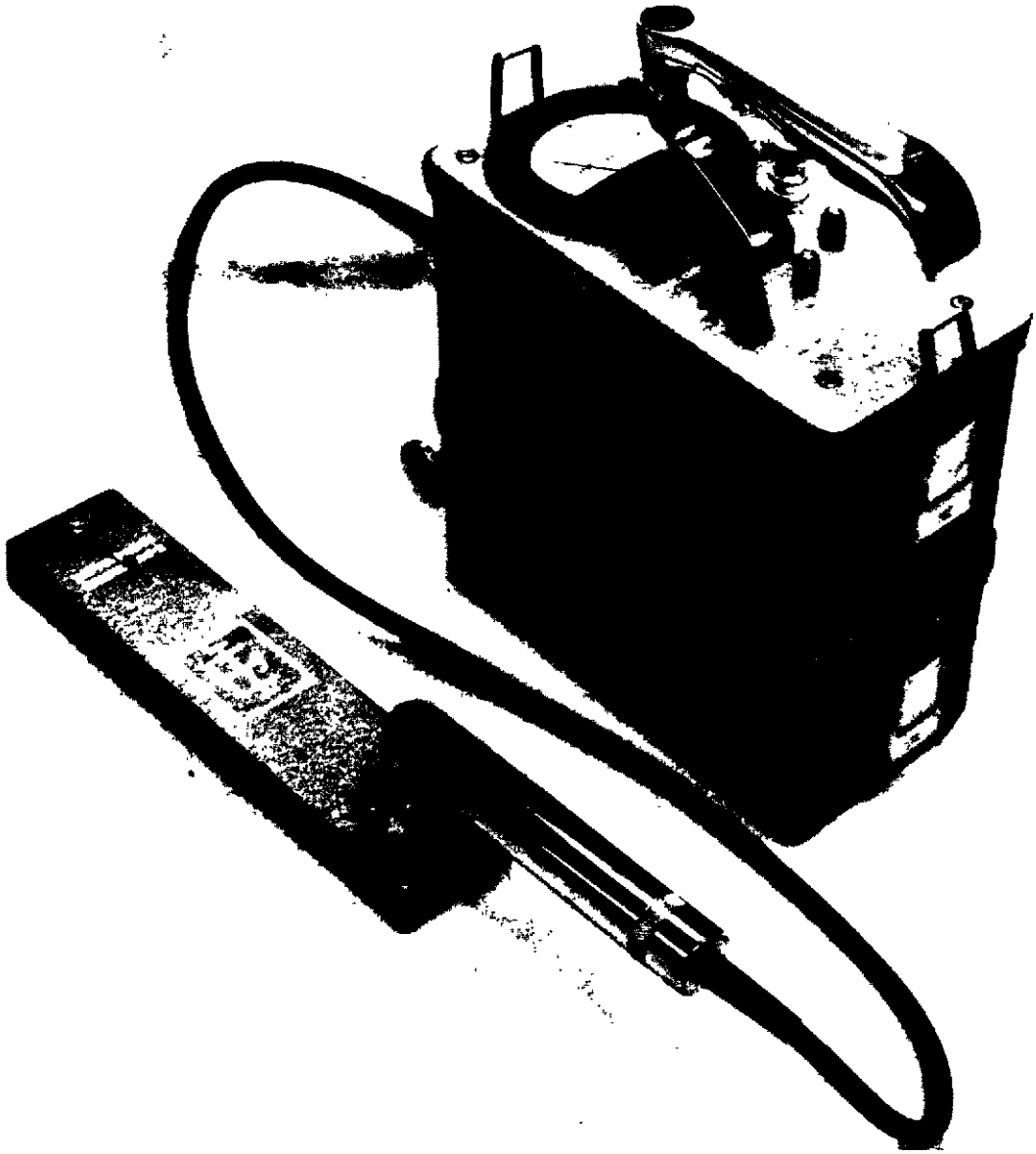


Figure 2.1 Eberline Model PAC-3G portable gas proportional alpha counter. (Eberline Instrument photo)

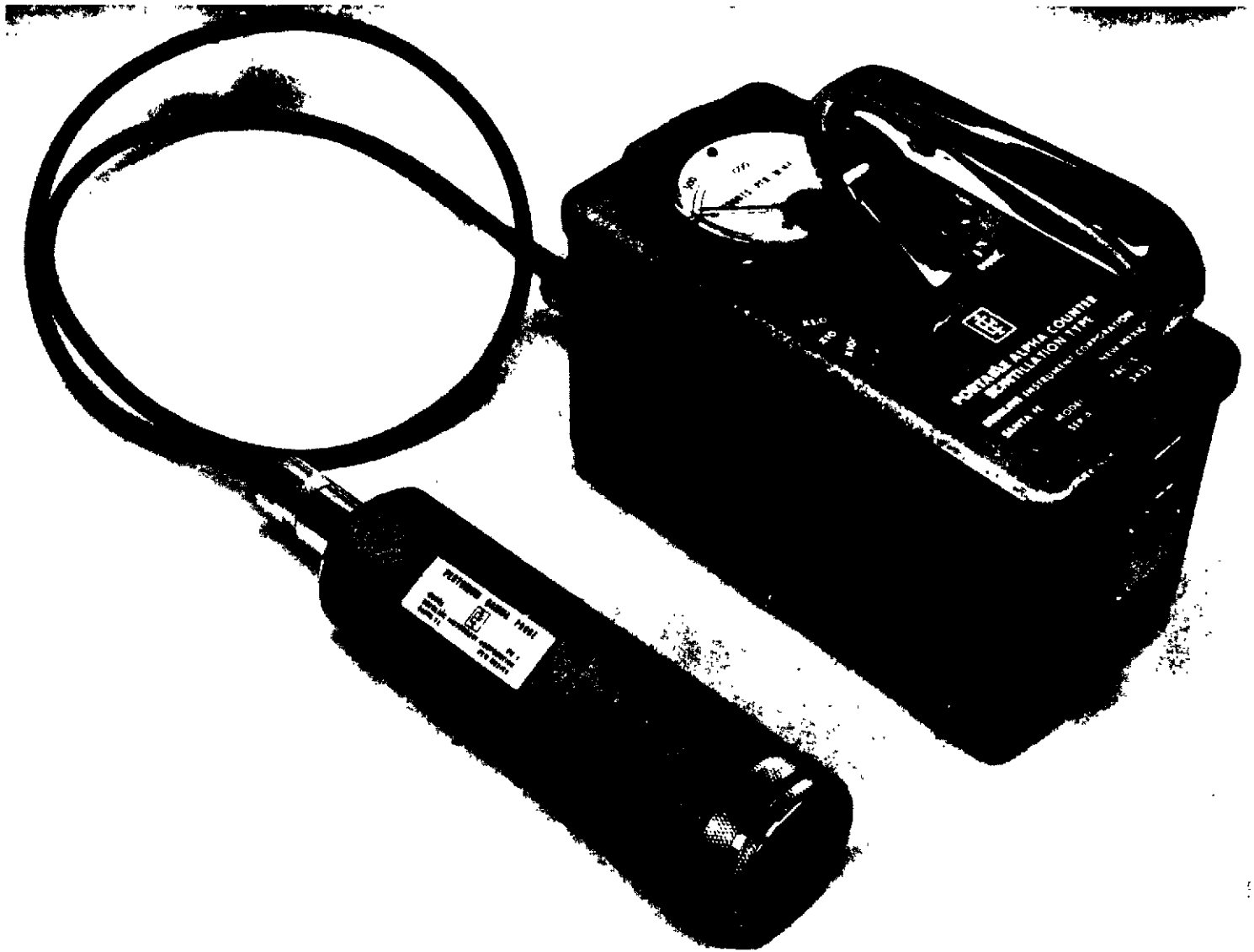


Figure 2.2 Eberline Model PAC-1S with Model PG-1 plutonium gamma probe. (Eberline Instrument photo)

Figure 2.3 Instrument maintenance facilities. (DASA 103-10-TTR-63 photo)

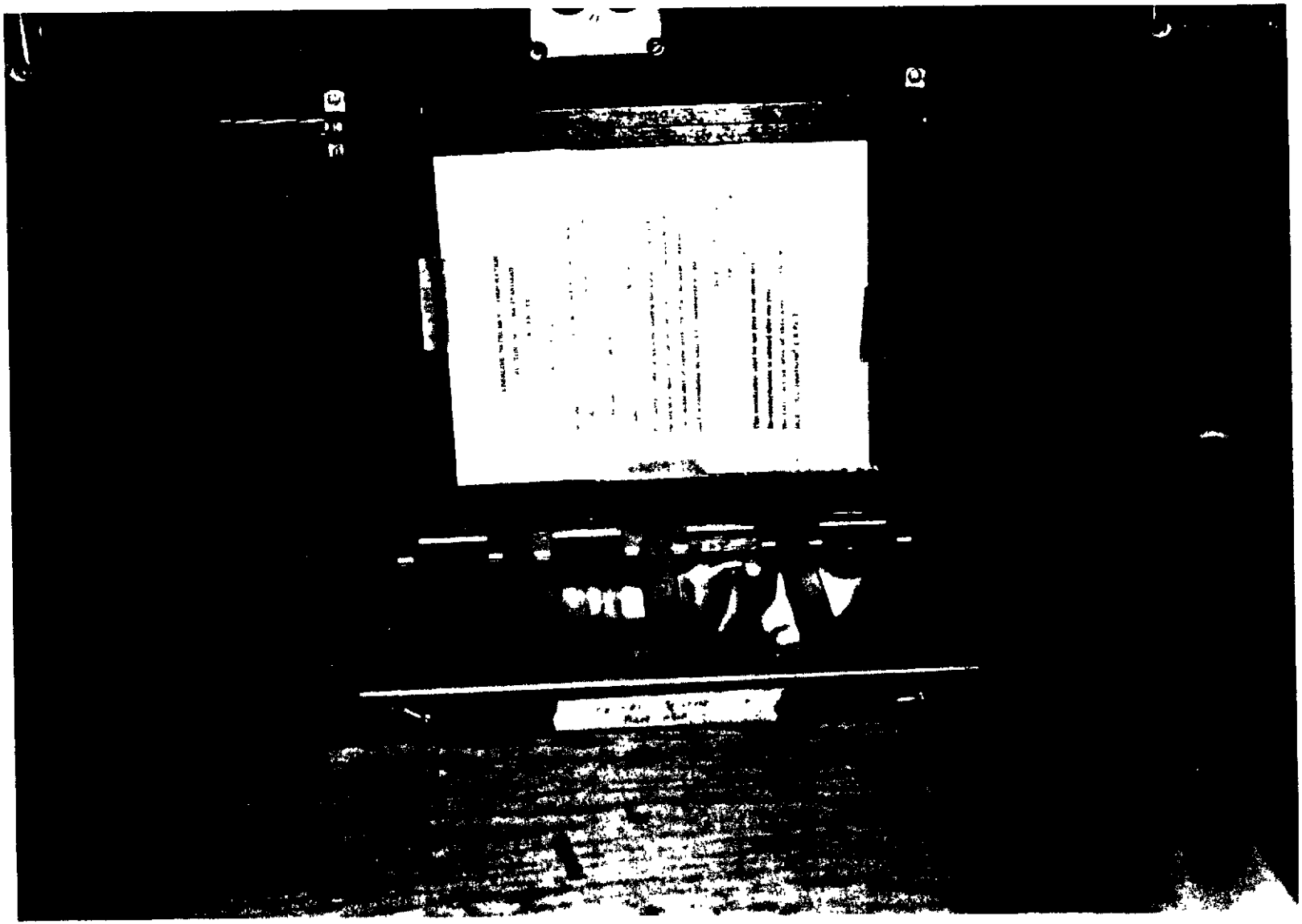


Figure 2.4 Primary Pu^{239} extended area sources. (DASA-133-29-TTR-63 photo)

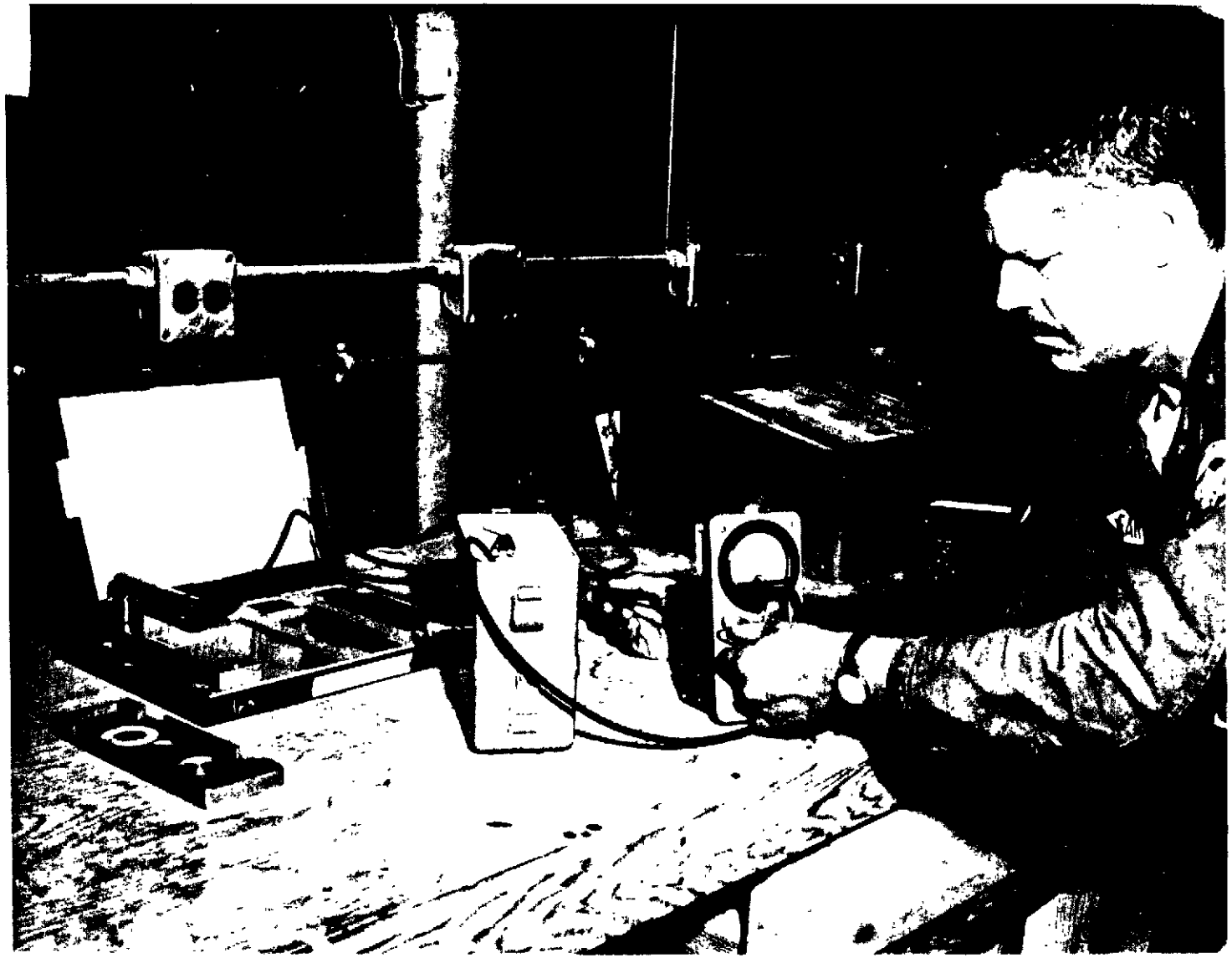


Figure 2.5 Technician calibrating PAC-3G. (DASA-133-15-TTR-63)

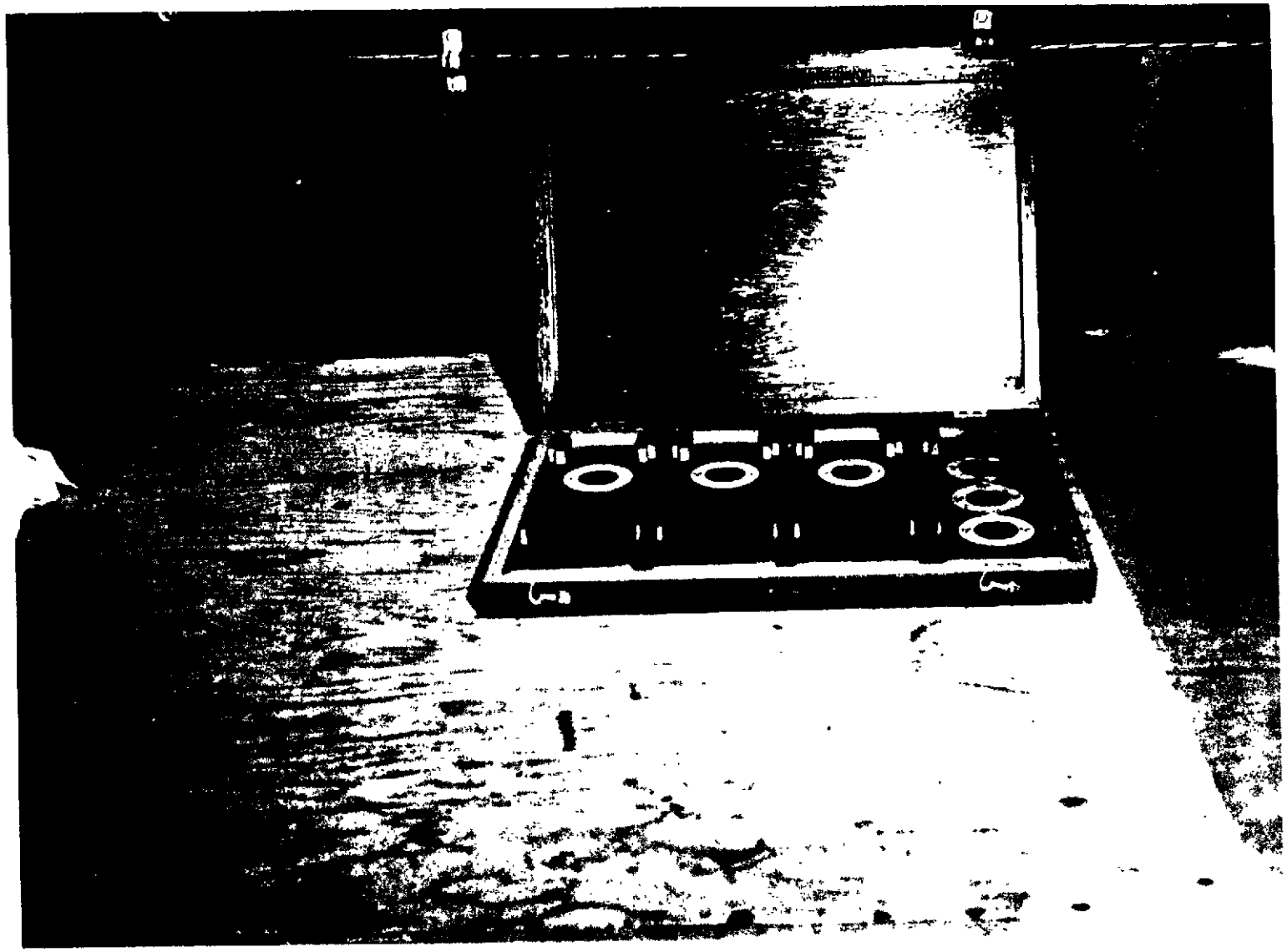
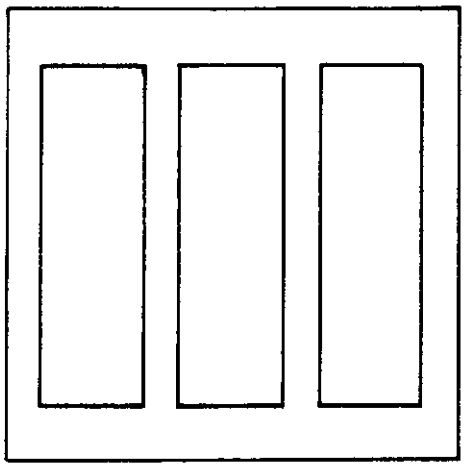


Figure 2.6 Secondary Pu^{239} calibration sources. (DASA-133-27-TTR-63)

STATION NUMBER	DATE

PAC-3G READINGS



SCALE

X1

X10

X100

CIRCLE APPROPRIATE SCALE

☐ Check here if X20 shield is used

Calibration Reading_____

PAC-1S w/PG-1 READINGS

BACKGROUND _____ X1 X10

PAD READING _____ X10 X100 X1K

CIRCLE APPROPRIATE SCALE

Calibration Reading_____

NAME PAC-3G OPERATOR	INSTRUMENT NUMBER
NAME PAC-1S OPERATOR	INSTRUMENT NUMBER

☐ Use reverse side for comments and check here.

Figure 2.7 Field survey data form.

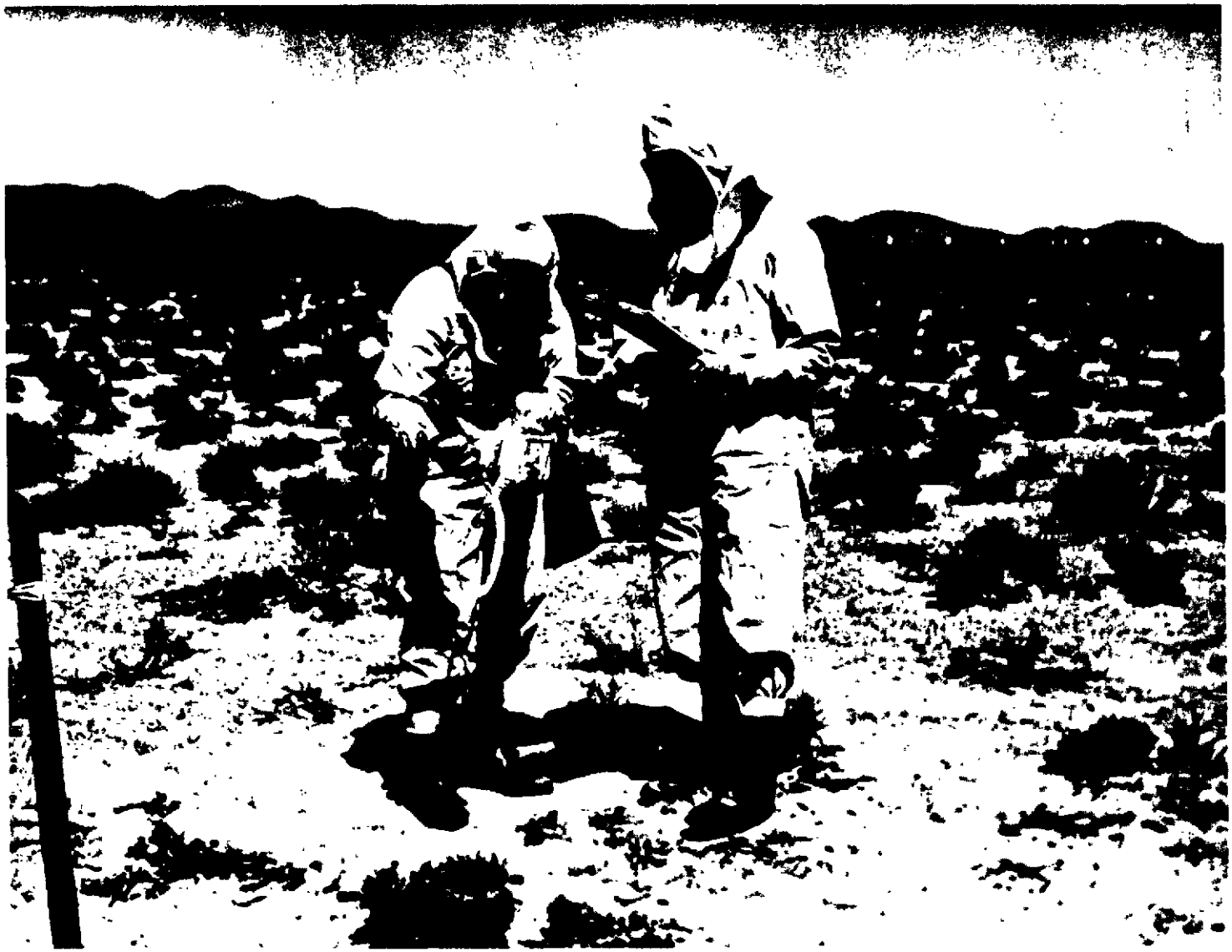


Figure 2.8 Survey team checking PG-1 background. (DASA-96-39-TTR-63)

Figure 2.9 12- by 12-inch concrete pad being stenciled with station designation. (DASA-96-40-TTR-63)

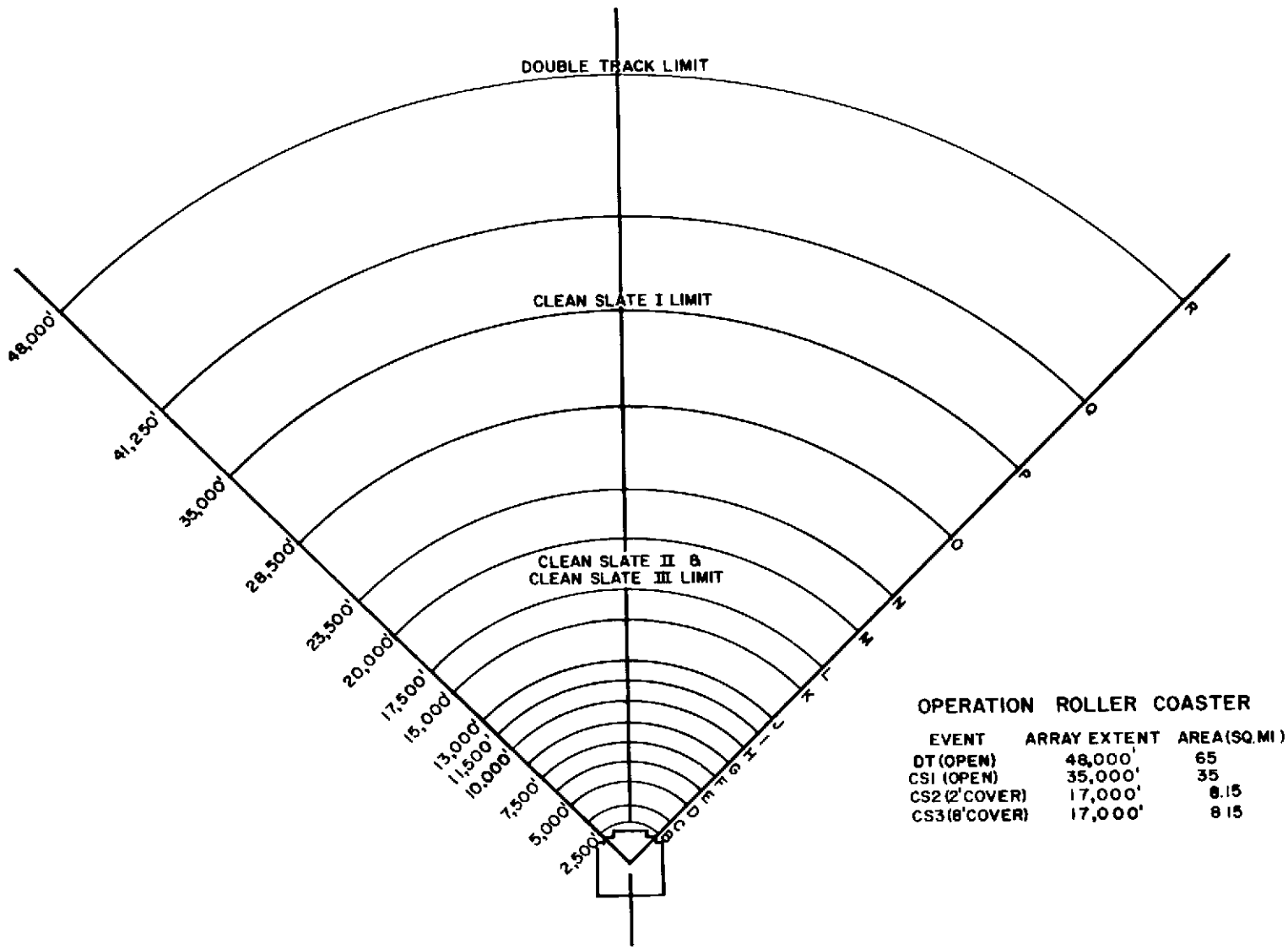


Figure 2.10 Operation Roller Coaster grid arrays

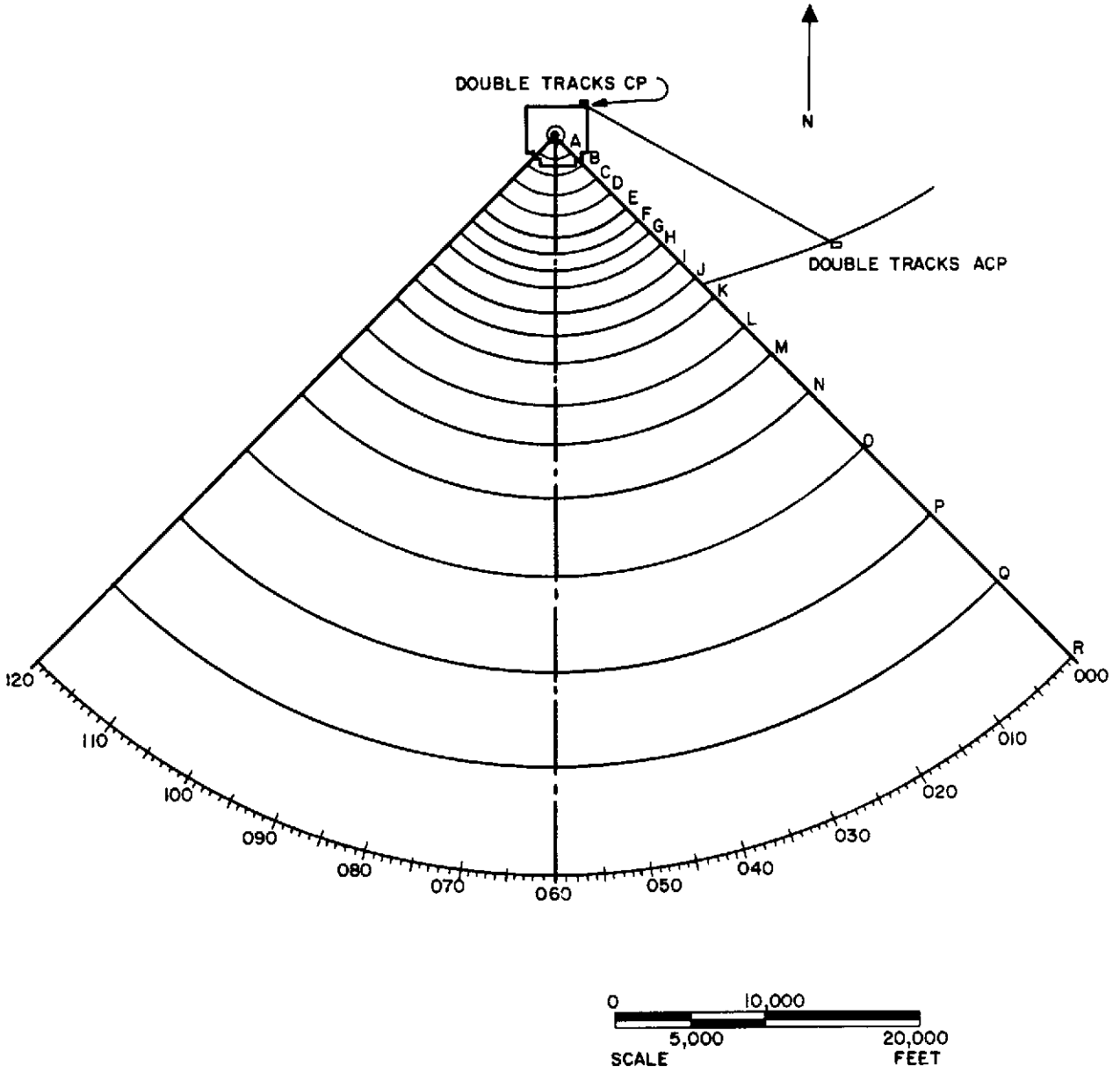


Figure 2.11 Pad locations, Double Tracks, Arc R shown as a typical example.

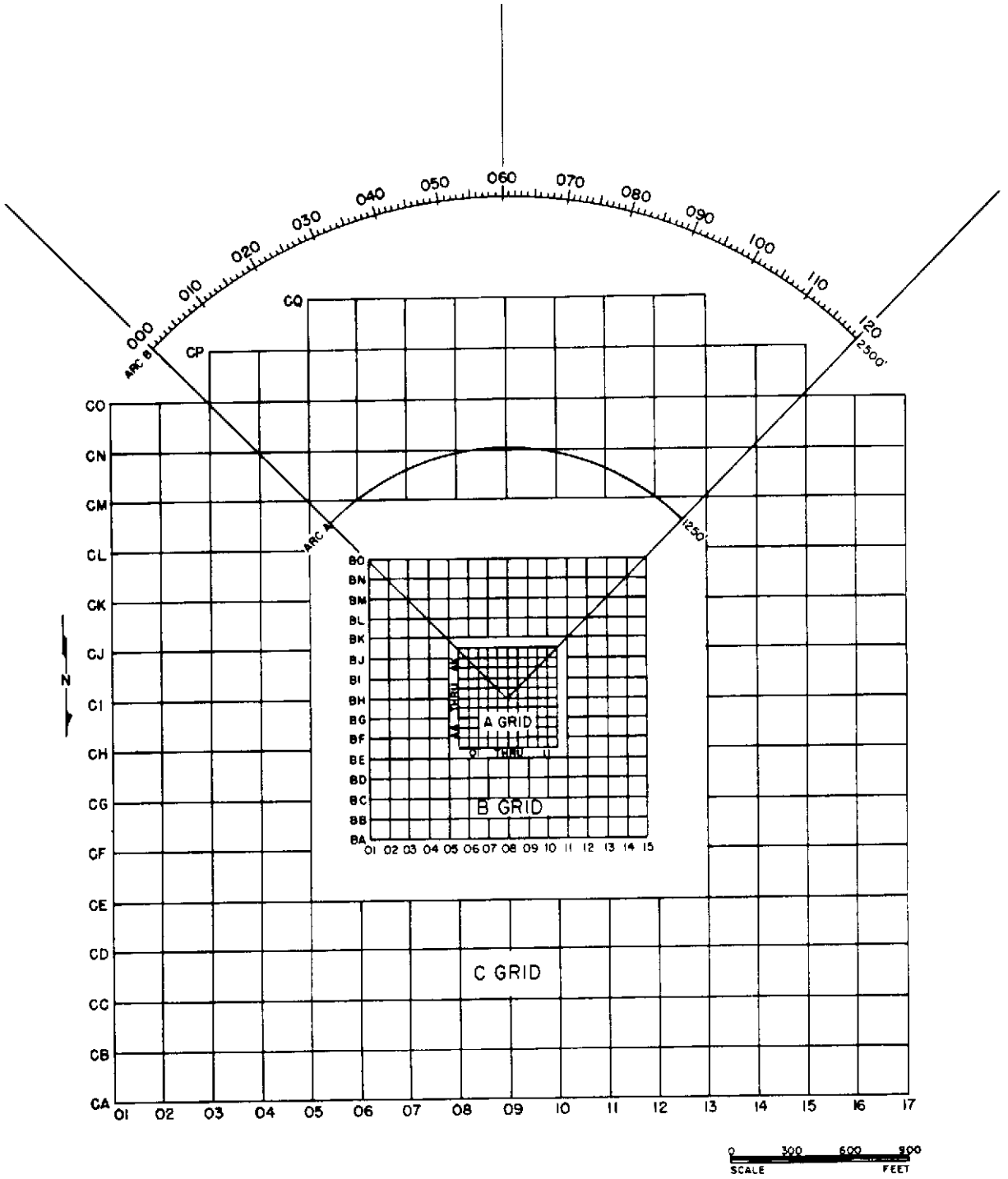


Figure 2.12 Close-in grid array.

Figure 2.13 Field survey team in anti-contamination clothing.
(DASA-96-06-TTR-63)

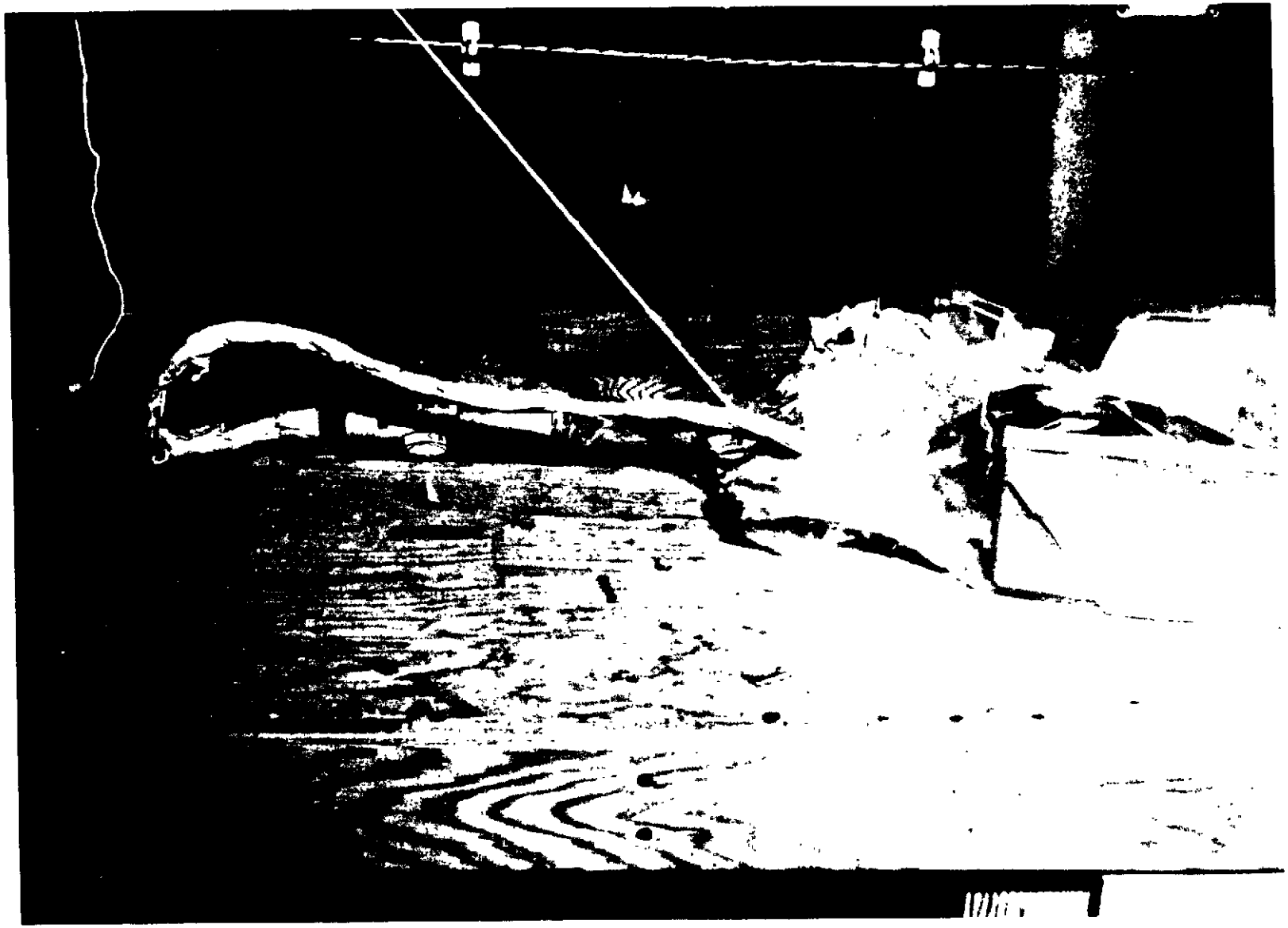


Figure 2.14 PG-1/PAC-1S in process of being bagged and taped to reduce contamination. (DASA-133-30-TTR-63)

Figure 2.15 Field survey team monitoring concrete pad with PAC-3G. (DASA-96-24-TTR-63)

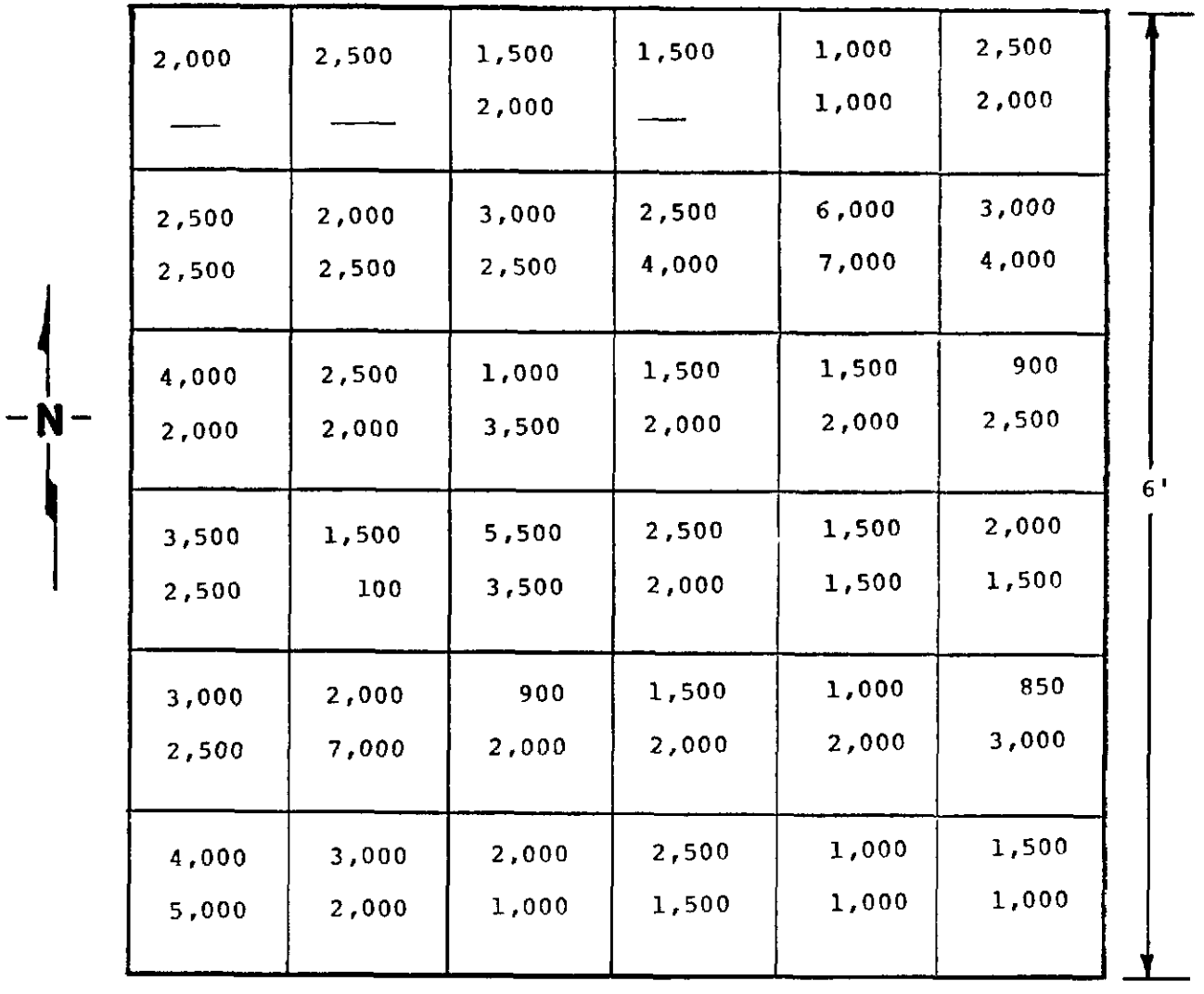


Figure 2.16 PAC-3G survey of pad cluster, Double Tracks (alpha cpm/60 cm^2) (pad location-CQ-10).

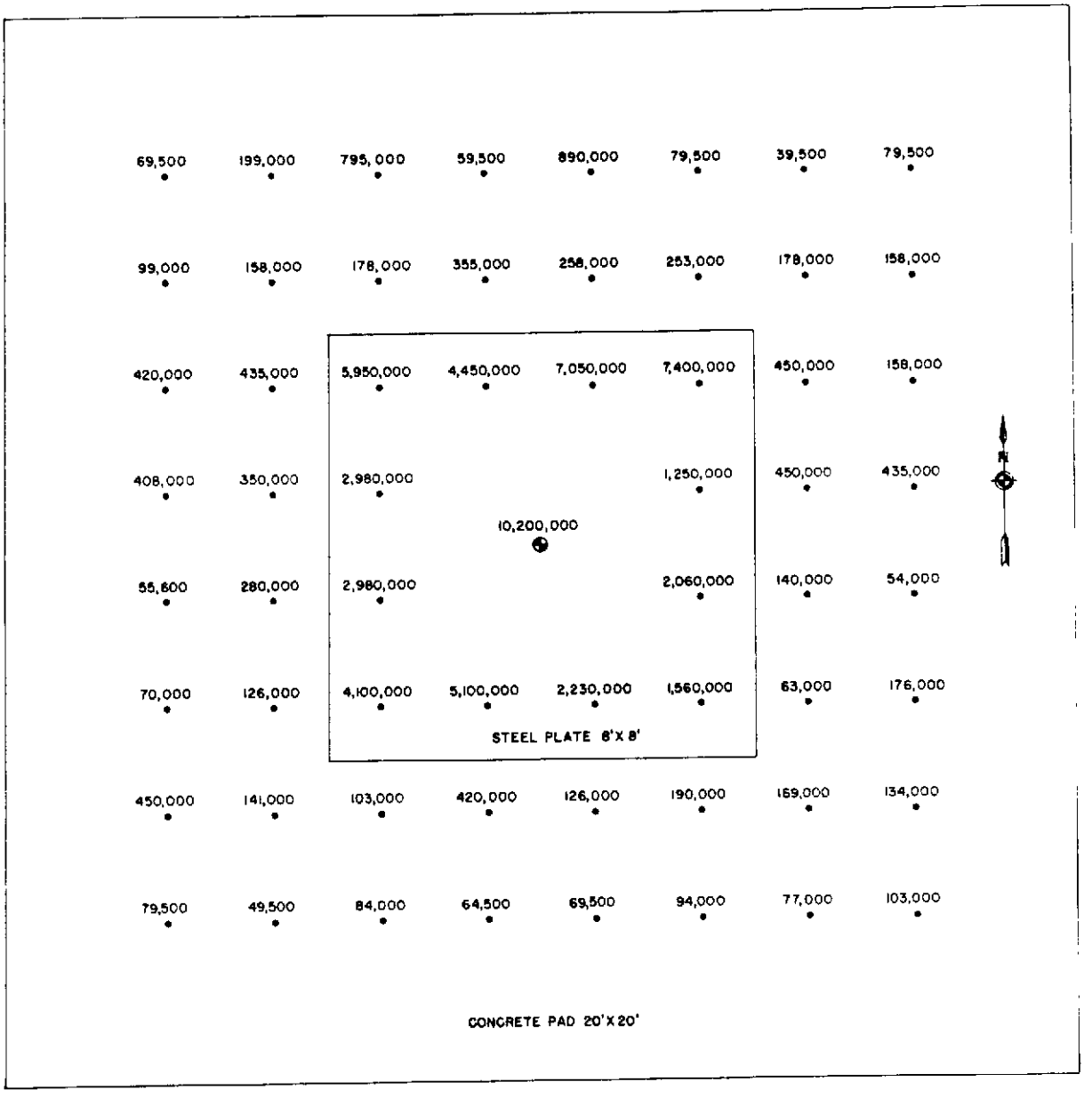


Figure 2.17 Double Tracks GZ survey with RASP-1, D+8; readings in alpha cpm/cm^2.

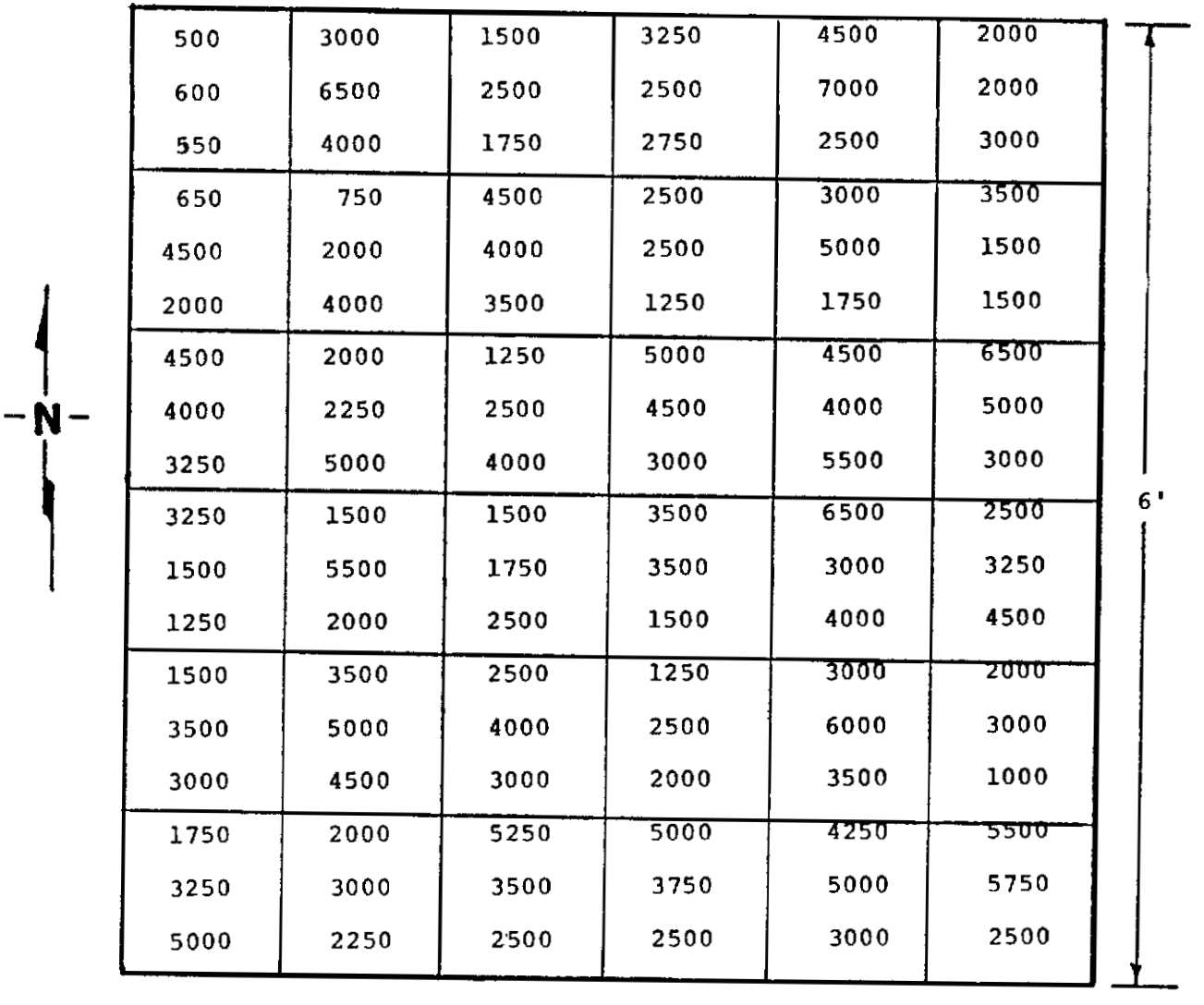


Figure 2.18 PAC-3G readings for cluster of monitor pads, CS I, D+1; cpm/60 cm^2 (cp 06).

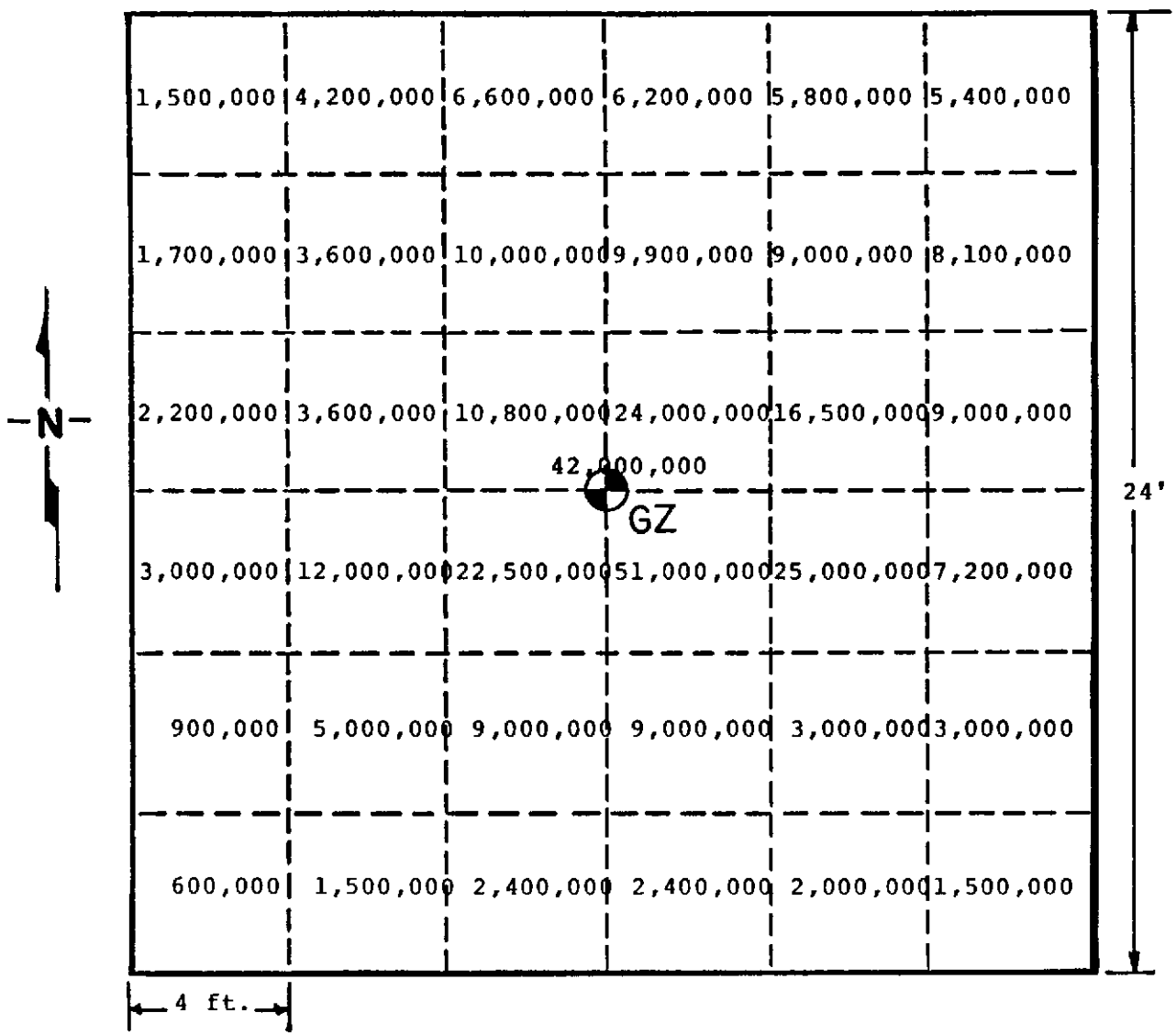


Figure 2.19 PAC-3G probe readings inferred from gamma detection measurements, CS I (GZ concrete pad).

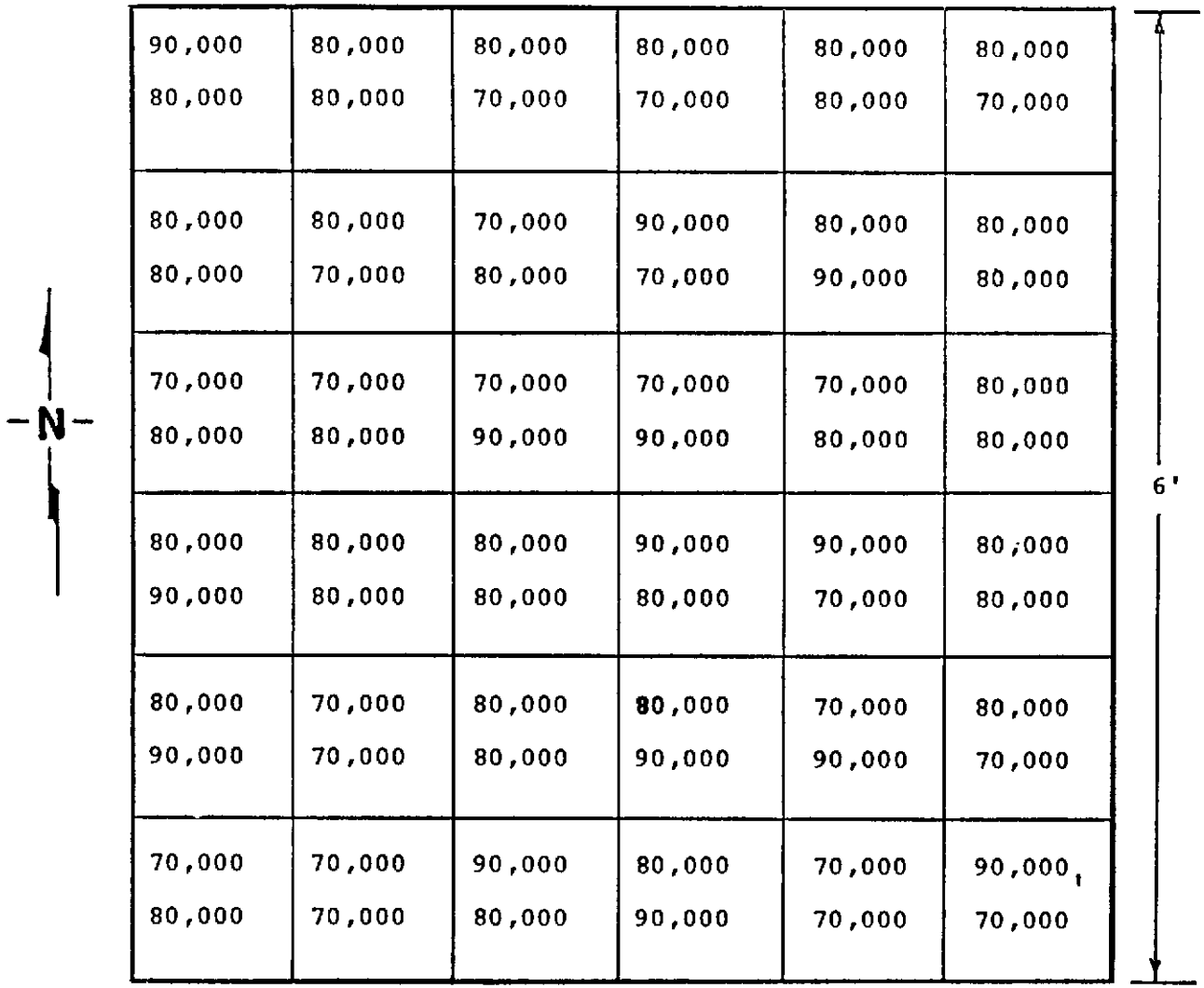


Figure 2.20 PAC-3G alpha survey of CS II pad cluster, CP05 (cpm/60 cm^2).

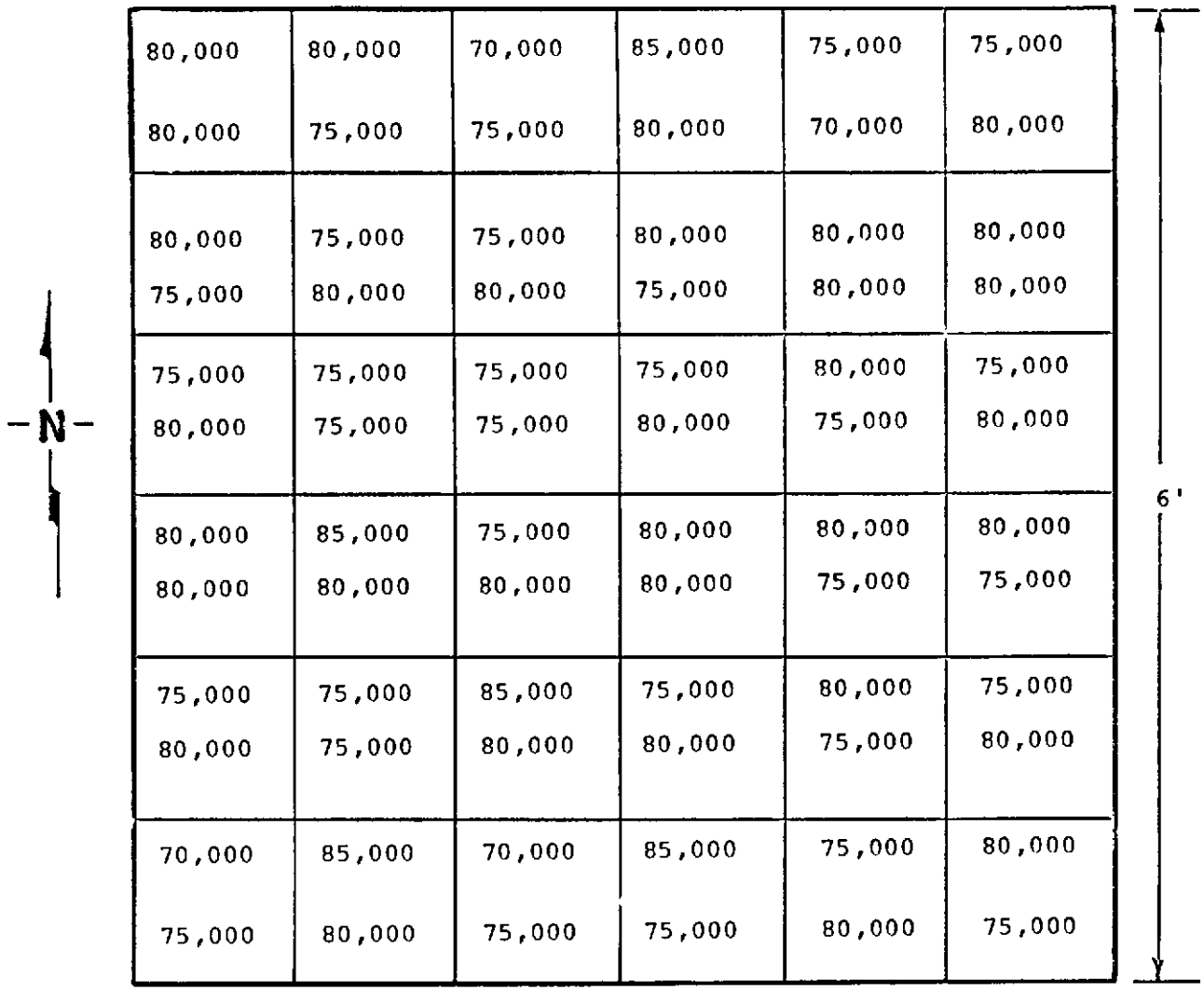


Figure 2.21 PAC-3G alpha survey of CS III pad cluster, CP05 (cpm/60 cm^2).

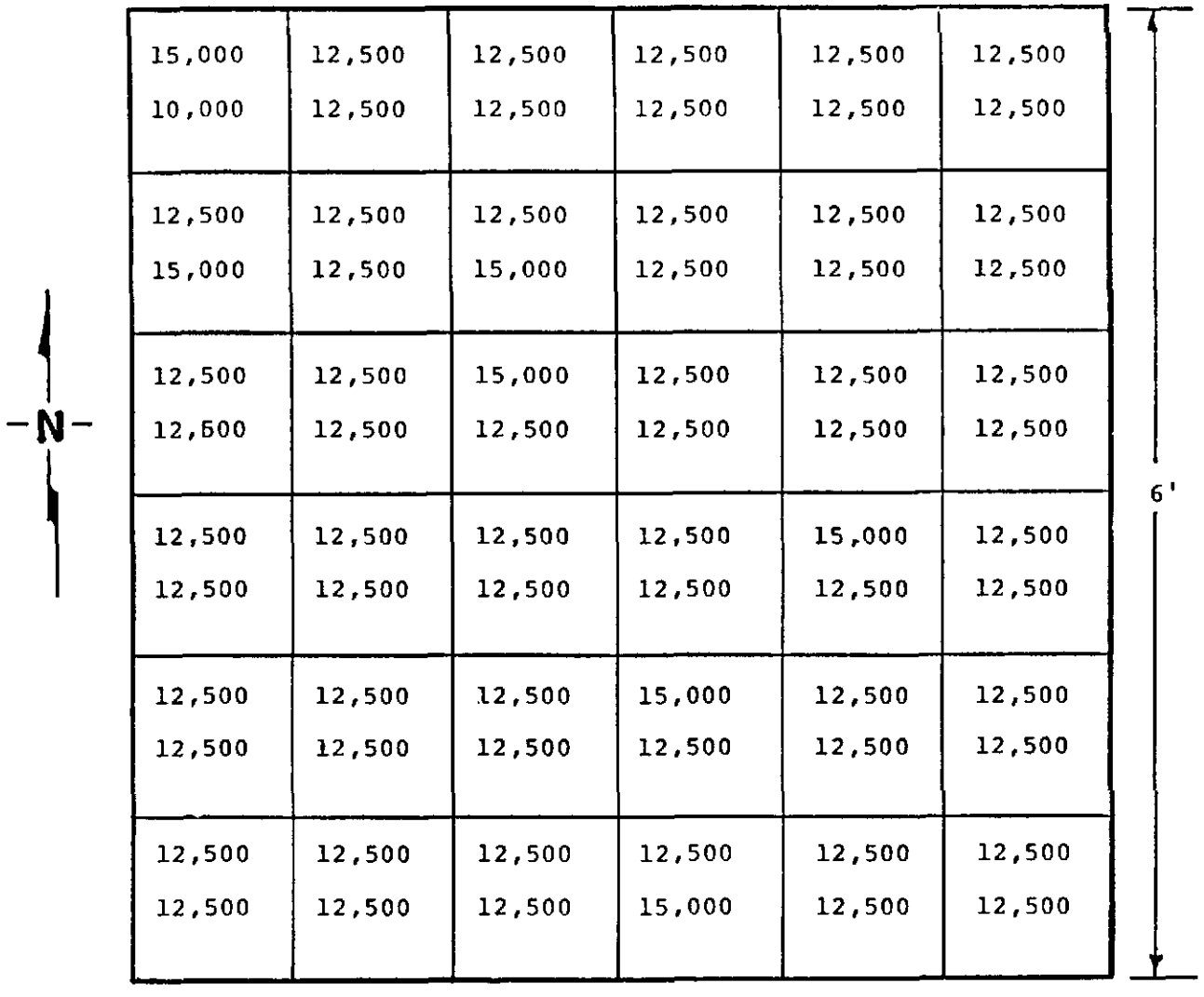


Figure 2.22 PAC-3G alpha survey of CS III pad cluster, CP06 (cpm/60 cm^2).

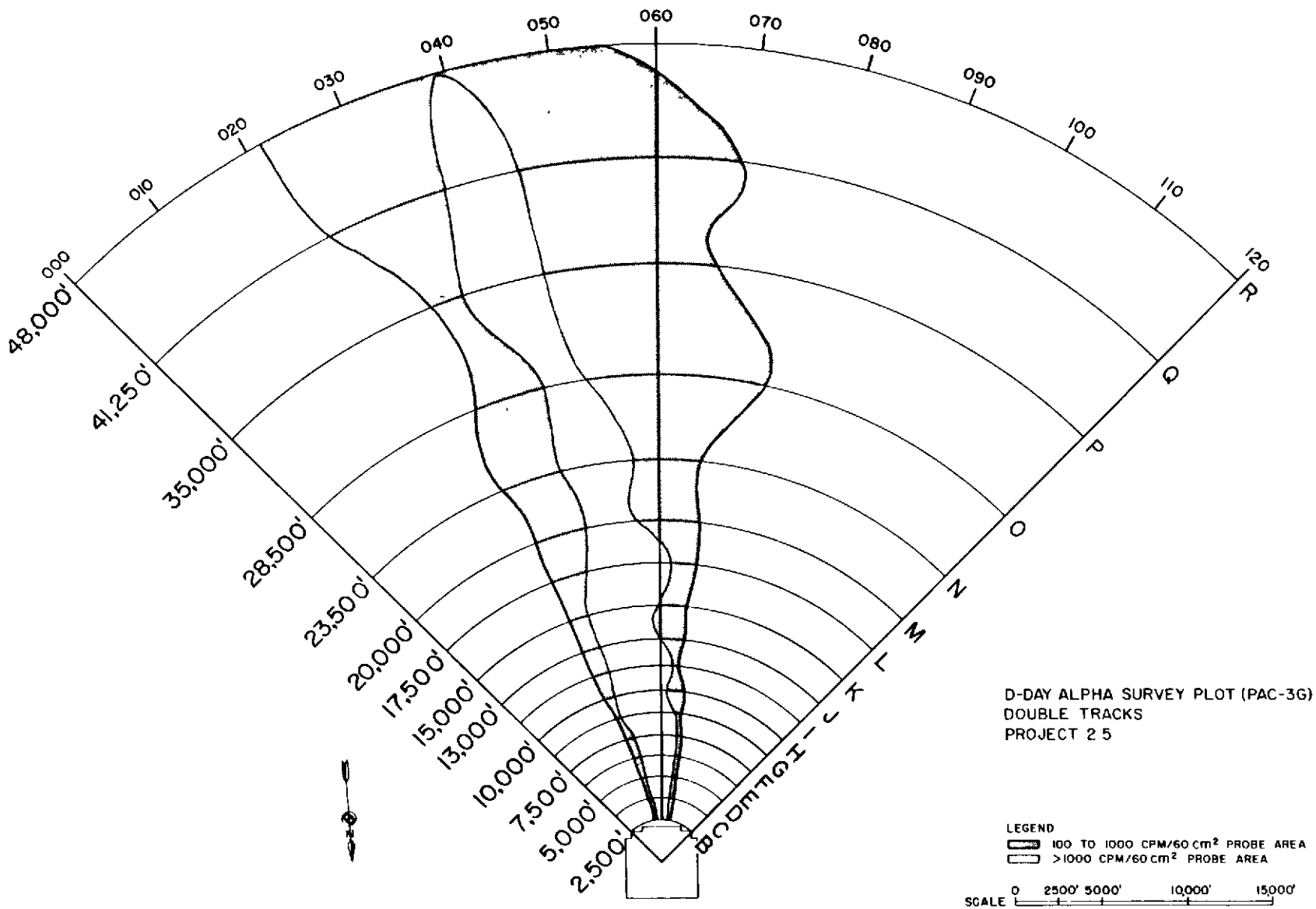


Figure 2.23 Alpha survey contour, Double Tracks.

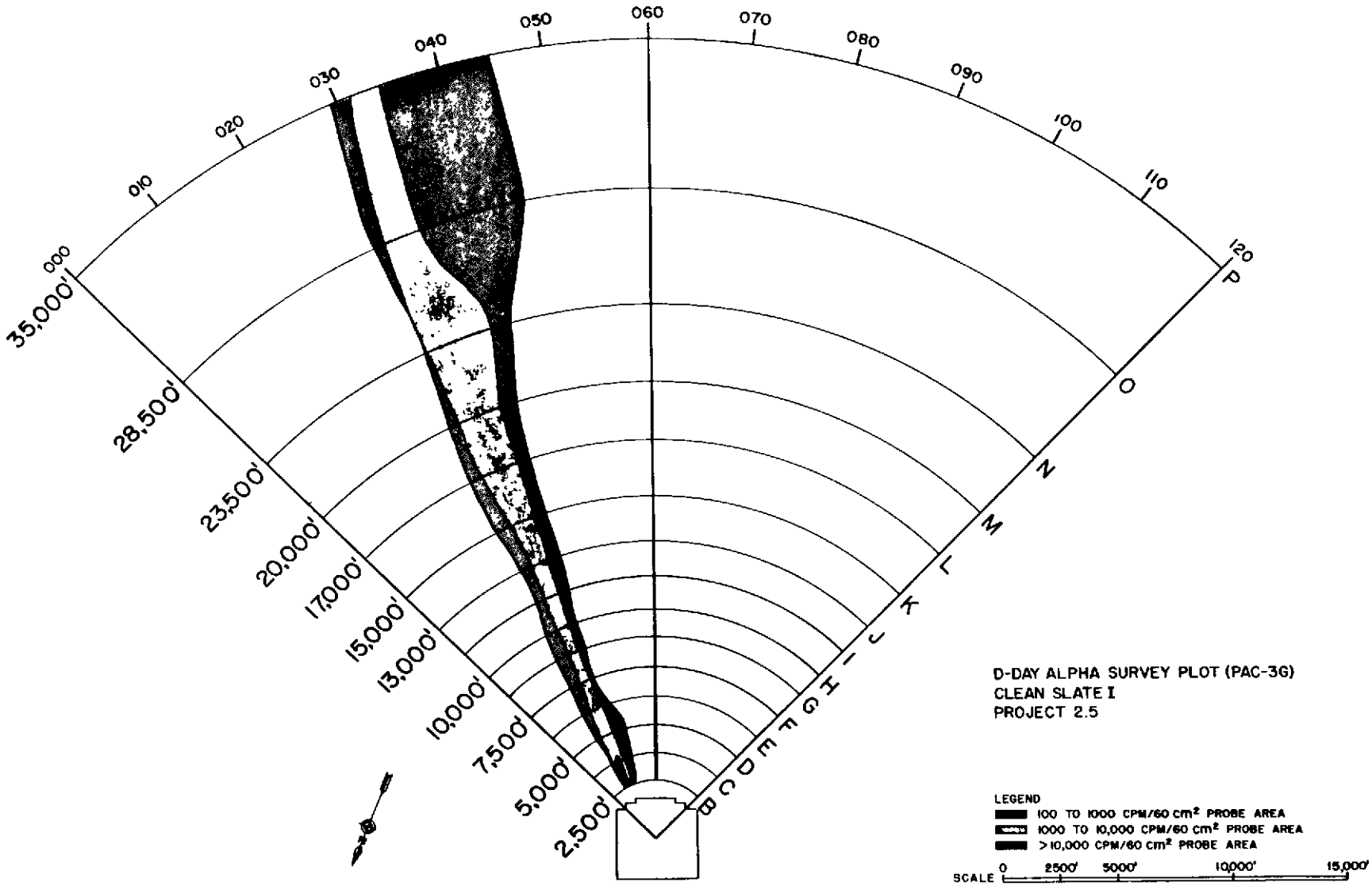


Figure 2.24 Alpha survey contour, CS I.

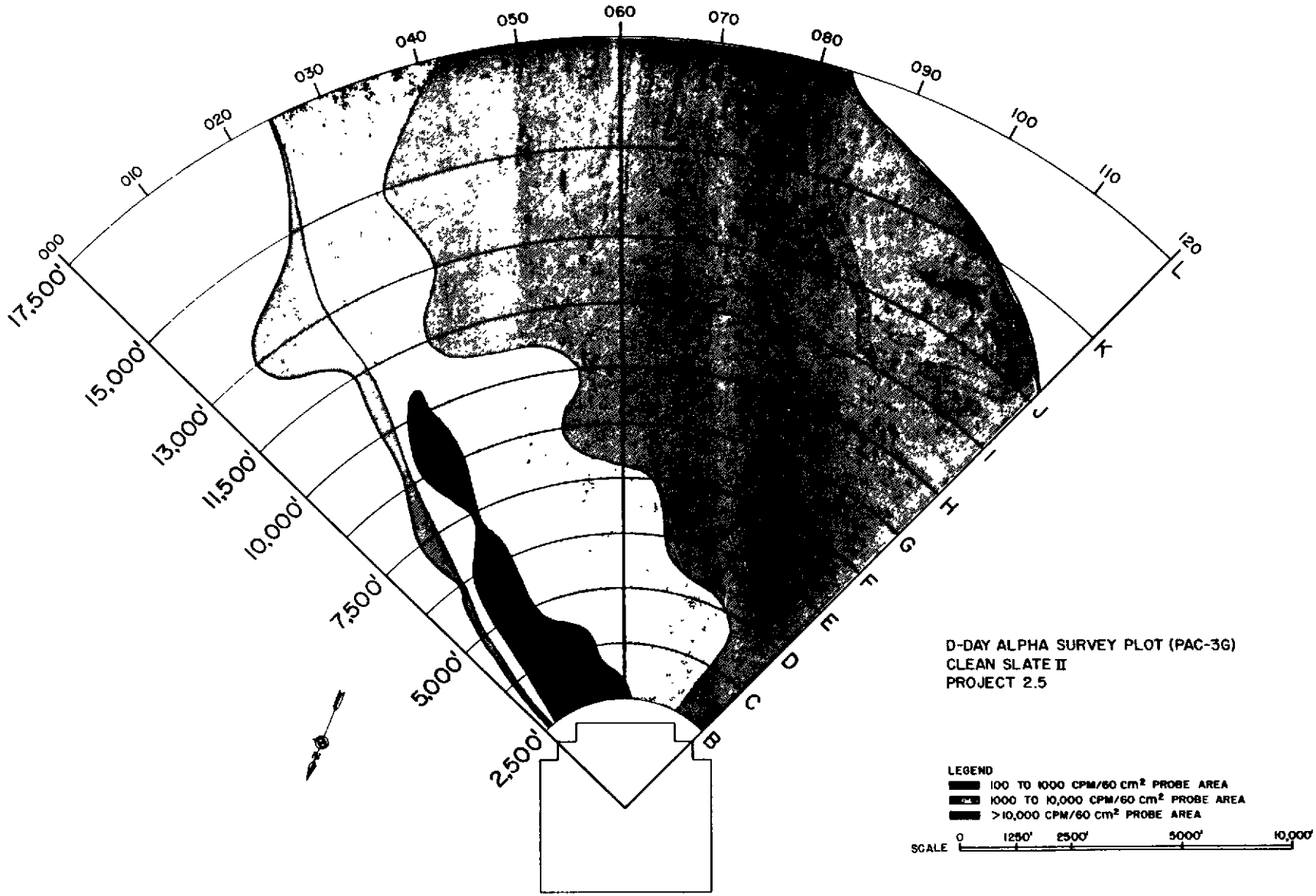


Figure 2.25 Alpha survey contour, CS II.

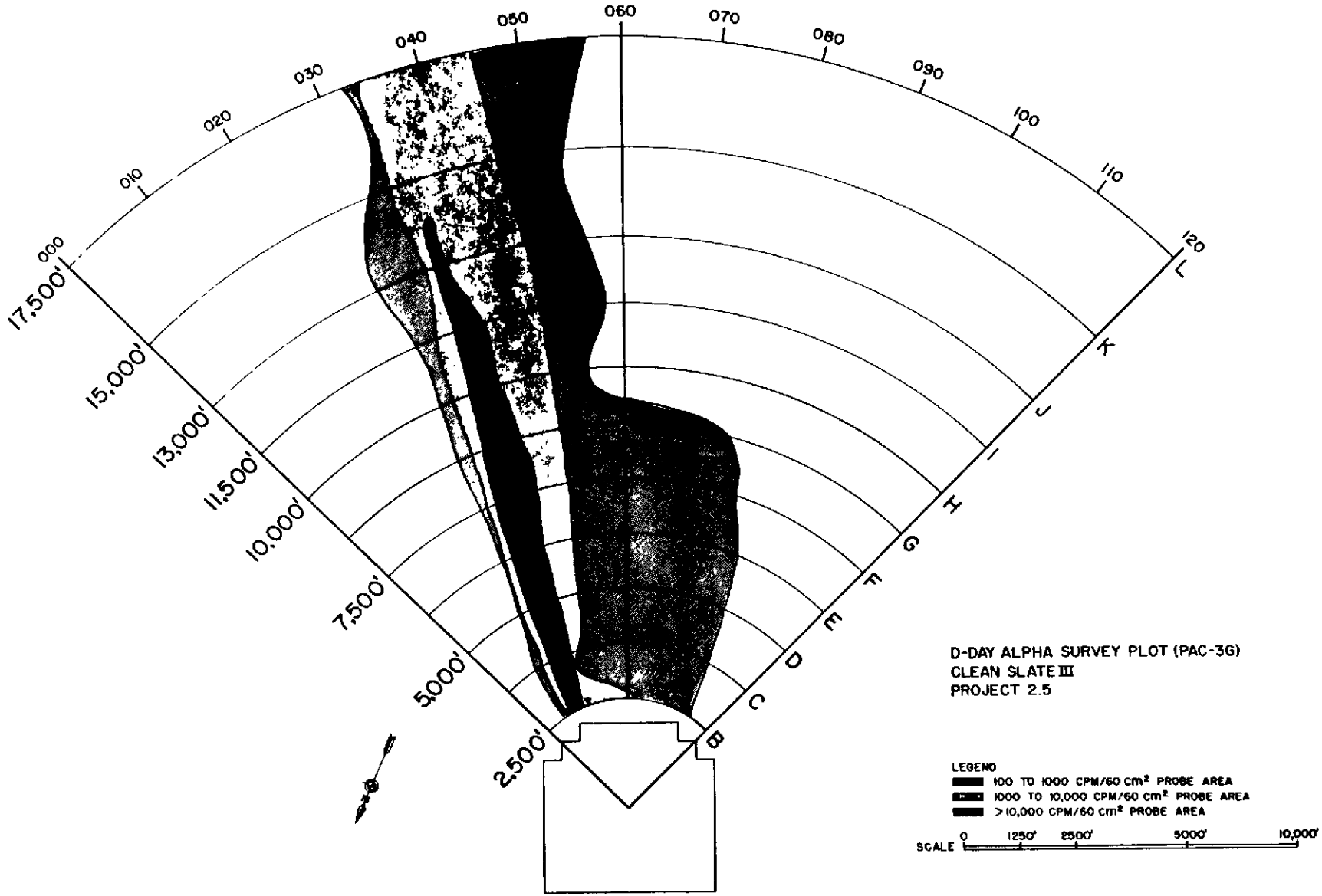


Figure 2.26 Alpha survey contour, CS III.

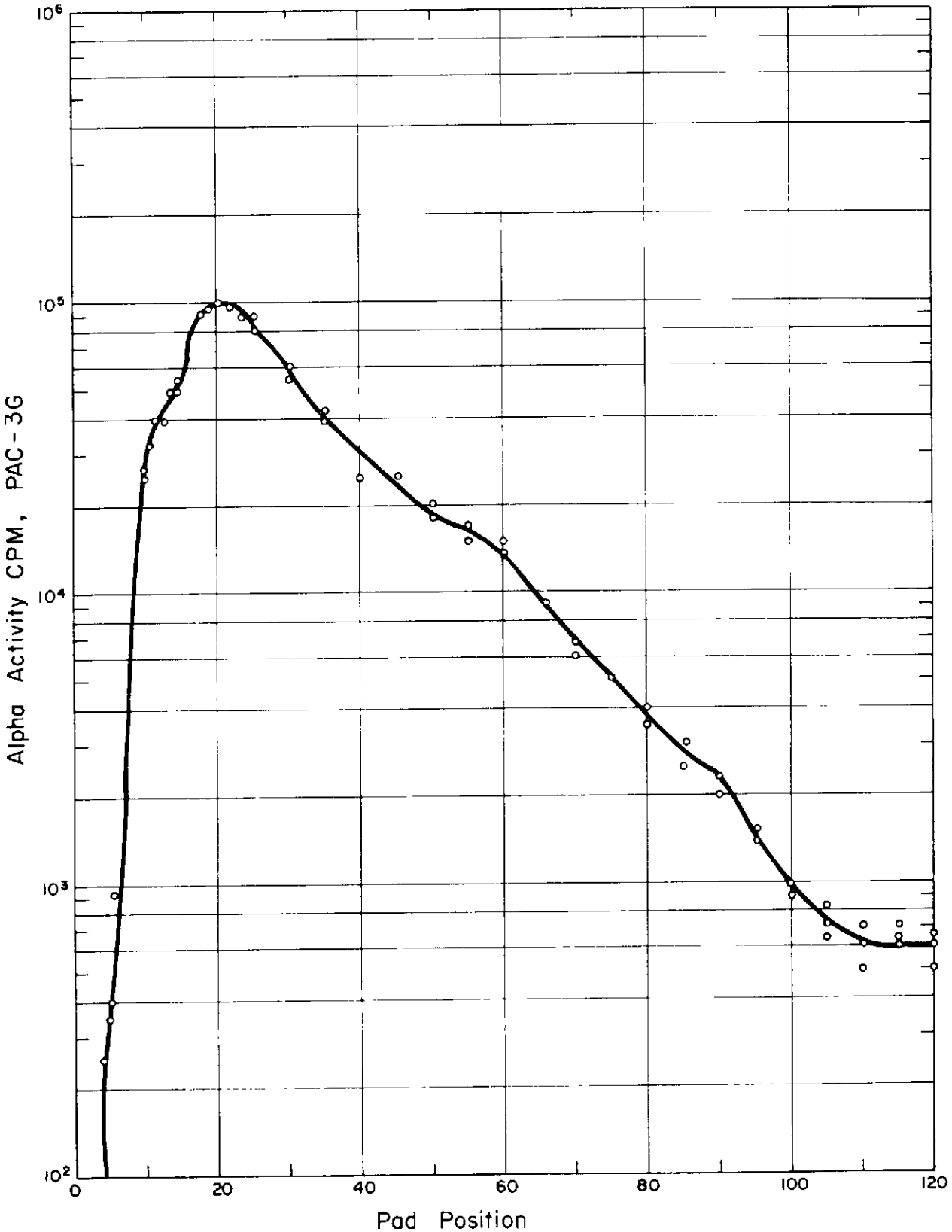


Figure 2.27 Arc B profile plot, alpha survey, CS II, D-day.

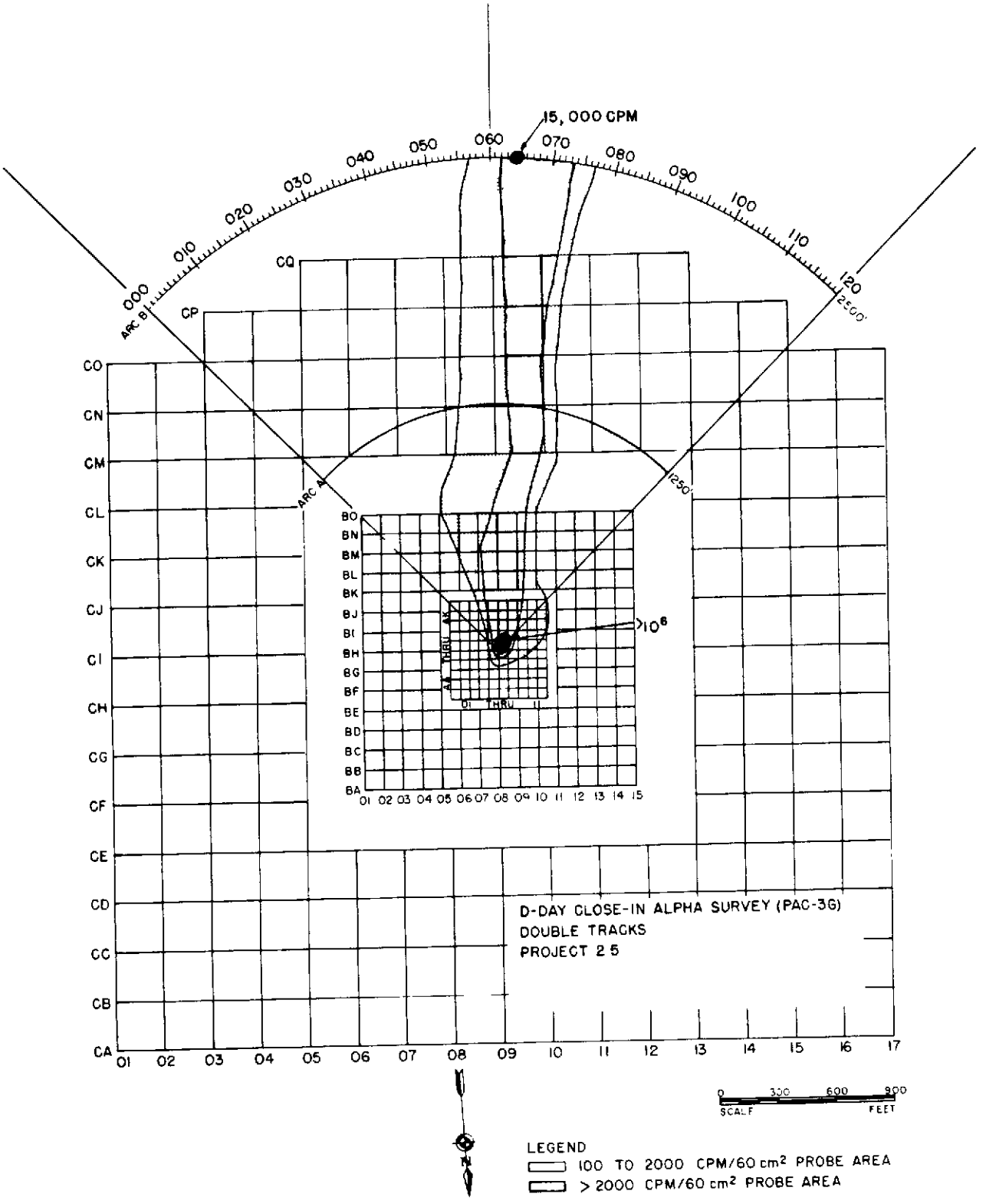


Figure 2.28 Close-in alpha survey, Double Tracks.

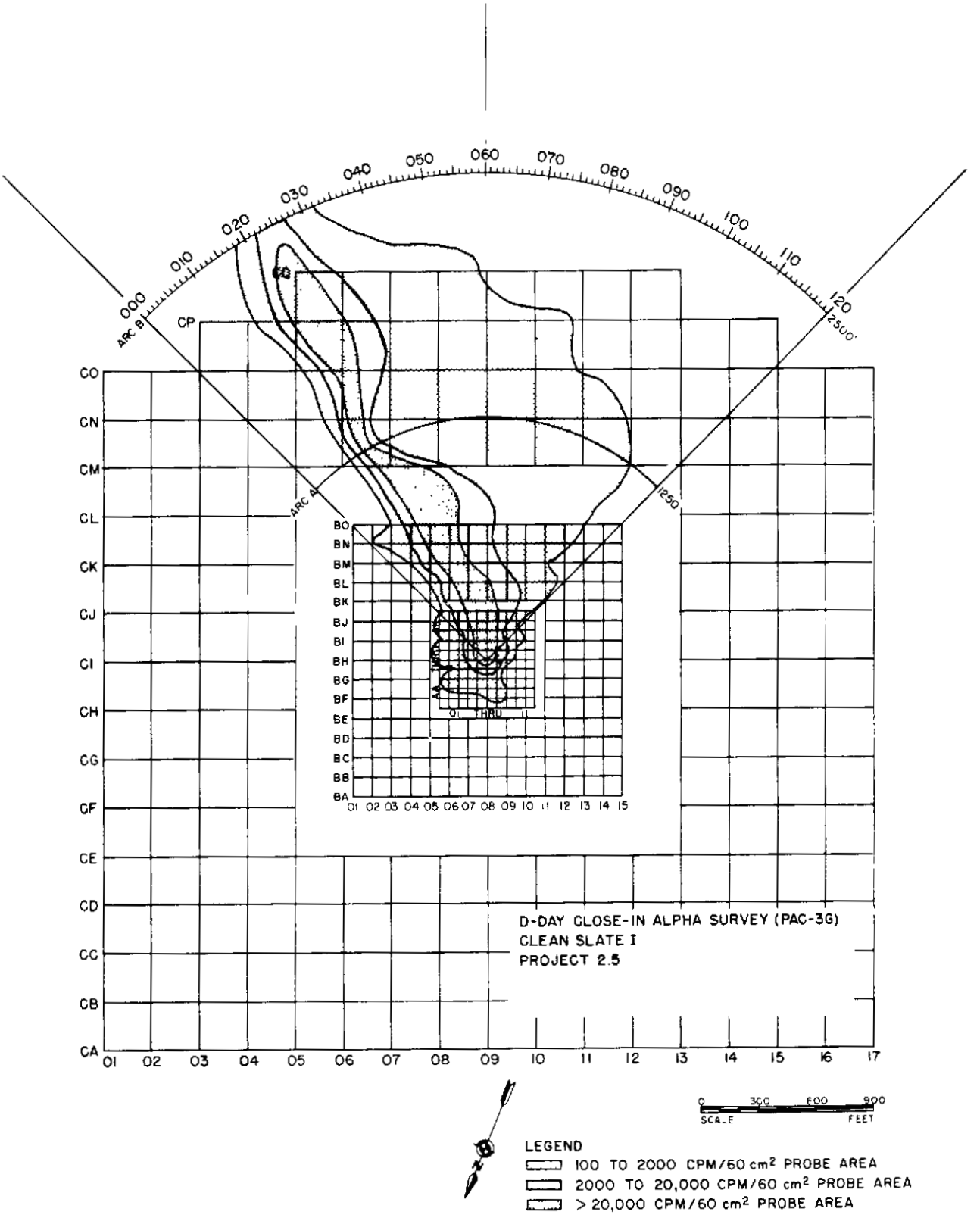


Figure 2.29 Close-in alpha survey, CS I.

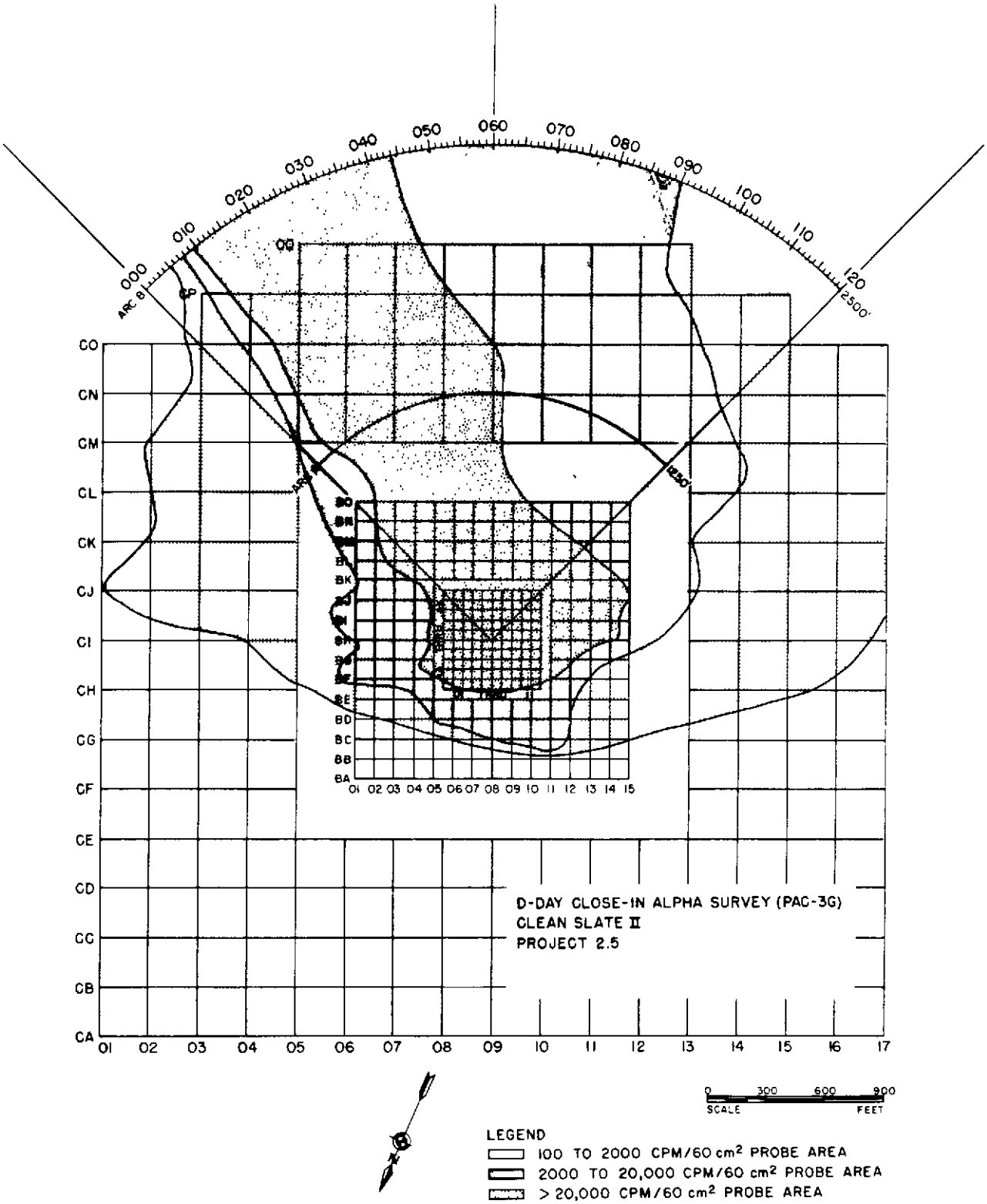


Figure 2.30 Close-in alpha survey, CS II.

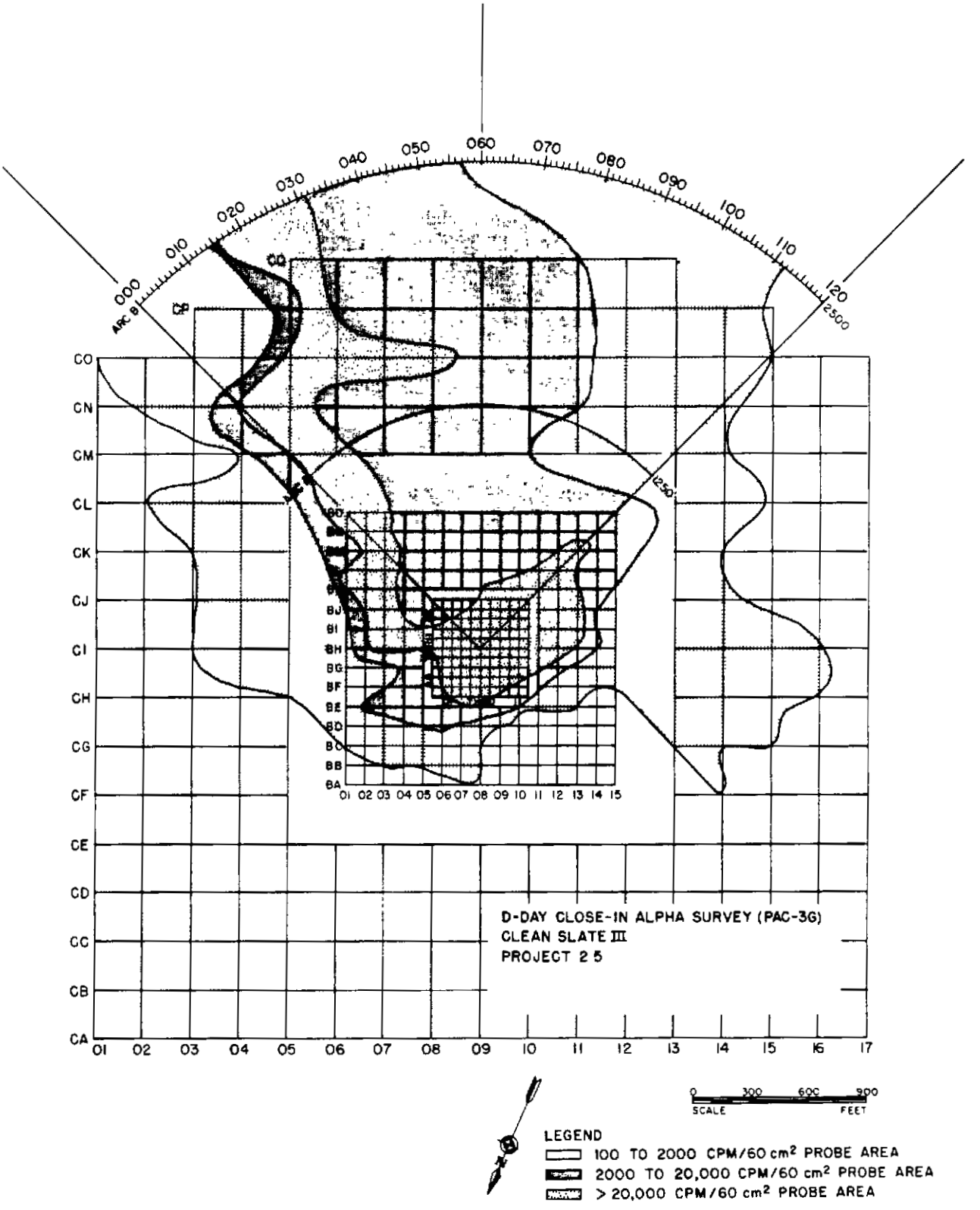


Figure 2.31 Close-in alpha survey, CS III.

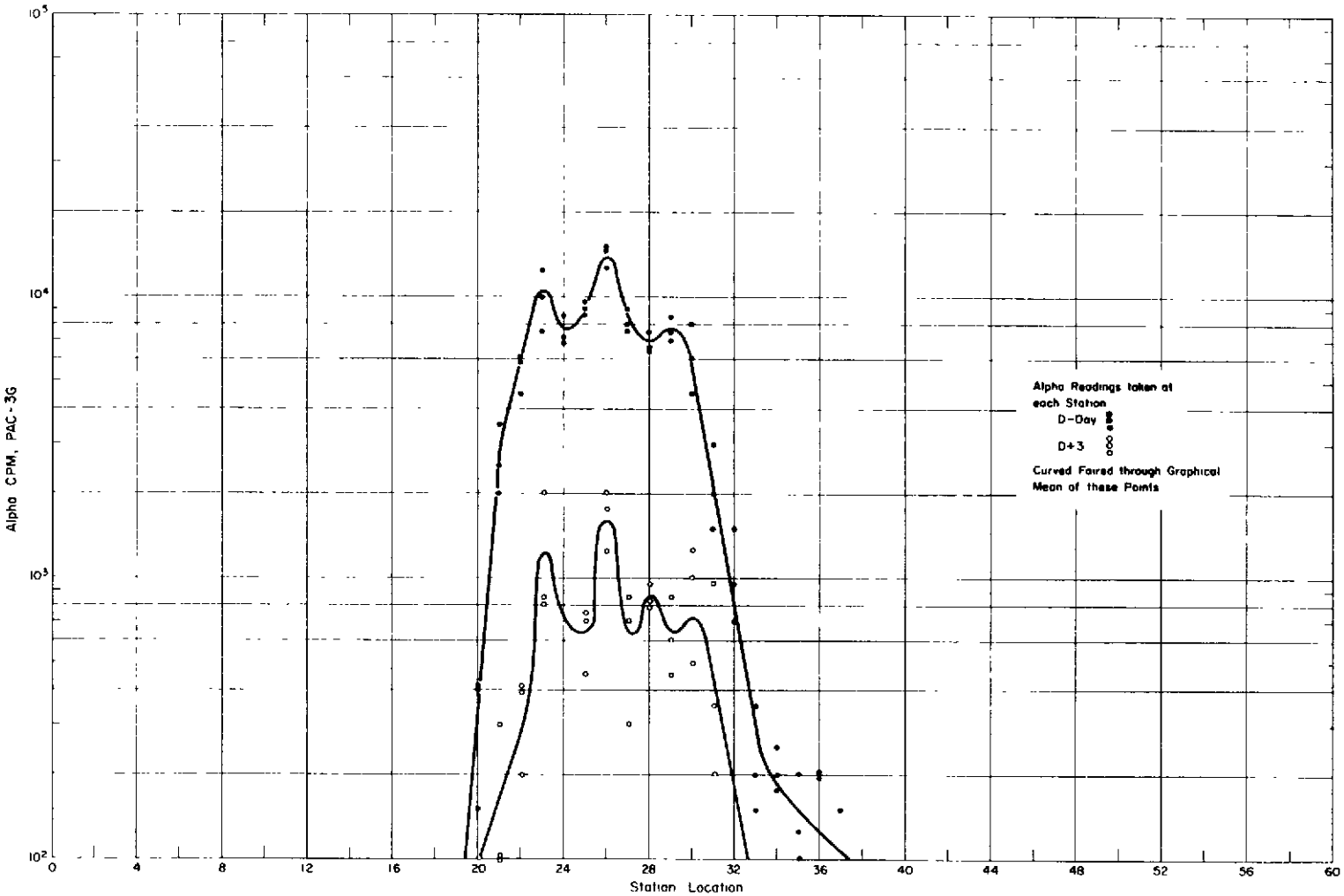


Figure 2.32 Alpha survey arc profile comparison, CS I, D-day and D+3 on Arc C.

CHAPTER 3

PLUTONIUM GAMMA SURVEY BY VEHICLE-MOUNTED GAMMA SCANNER

To simplify and speed up the procedures for locating and controlling Pu^{239} in weapon accident situations, considerable attention has been given to the detection of the weak (17 Kev) X-ray emitted during the decay of Pu^{239}. To develop this technique further and to prove its effectiveness, two vehicle-mounted scanners were designed and built for use during Operation Roller Coaster.

The vehicle-mounted gamma scanner is best suited to conduct radiation surveys of large areas. The instrumentation is primarily designed to detect low energy gamma radiations known to be emitted by weapon grade plutonium. However, it can be adjusted to be sensitive to other isotopes. The detector is mounted approximately 2 1/2 feet from the ground at the front of the vehicle. The area viewed by the detector is a circle of approximately 2.5-foot radius. Readout is provided on both a count rate meter and a recorder.

3.1 INSTRUMENTATION

The vehicle-mounted low-energy gamma-detection device was installed in a conventional panel truck (Figures 3.1 and 3.2). It consisted of a 1-inch-thick by 2 1/2-inch-

diameter NaI (T1) crystal with a 0.001-inch-thick aluminum window mounted on a 3-inch photomultiplier tube. These components and ruggedized housing were placed in a frame extending in front of the truck. The electronics were housed in a separate and sealed compartment within the panel enclosure of the truck. Two single-channel pulse-height analyzers and associated components were installed in this compartment (Figure 3.3). The discriminators were adjusted so that one analyzer covered the 10 to 20 Kev energy channel and the other covered the 55 to 65 Kev channel, the former for Pu^{239} and the latter for the Am^{241}, the growth product of Pu^{241} normally present in weapons grade plutonium (Figure 3.5). Provisions were made so that dry ice could be inserted around the phototube to improve signal-to-noise ratio in this low photon energy range, particularly when operating in hot climates. However, during Operation Roller Coaster, temperatures remained moderate, and dry ice was not required.

The electronics other than the phototube exhibited considerable temperature sensitivity, the background increasing by a factor of two with temperature rise from 65° F to 80° F. This fluctuation was minimized by maintaining a constant temperature (65° F) inside the vehicles during operation. A motor generator on the rear of the vehicle provided power for instrument and air conditioner operation as well as lighting provisions for night time survey (Figure 3.4). A small

electric heater was required for night operations to maintain 65° F.

Counting rates were recorded by a two-pen chart recorder; i.e., each pen registering the output of one of the analyzers and its associated count rate circuitry. The fifth wheel on the rear of the vehicle was interconnected with the recorder paper travel mechanism.

3.2 CALIBRATION

Vehicle-mounted low-energy gamma detectors were optimized with Pu^{239} sources placed against the detector window. As this technique was not a calibration for an extended area situation (the detector viewed the ground from a height of 30 inches) a second calibration was made. In order to obtain some idea of the relationship between gamma scanner readings and PAC-3G readings of similarly contaminated areas, 6-foot-square concrete calibration pads were placed across the GZ grid approximately 2,000 feet downwind of GZ on each event. From the plotted distribution of material, it was easy to determine which pad was on or near the hot line. This pad was monitored by one of the scanners and with a PAC-3G, and the readings were compared. On CS I and DT, none of the pads were sufficiently contaminated to

yield good data for this determination. On Clean Slate II and III, good data was obtained; this data is included in Table 3.1, which is a compilation of vehicle-mounted gamma scanner and alpha survey data taken at the identical station location.

Figure 3.5 shows the gamma spectrum analysis of the source used for initial calibration. In order to compare the gamma spectrum for the distributed plutonium, a point approximately 100 feet south of GZ in the downwind pattern of Double Tracks was selected for gamma spectrum analysis. This comparison is shown in Figure 3.5.

3.3 PROCEDURE

Anti-contamination clothing for the gamma scanner personnel (one driver and one operator in each vehicle) included coveralls, boots, gloves, and an M-17 full-face mask. All cracks in the vehicles, such as doors, windows, and vents, were taped to minimize entry of outside dust. Continuous air samples were taken inside each vehicle, and the inside surfaces were periodically surveyed with a PAC-3G. At no time during the operation was there any detectable contamination in either vehicle. The only real need for anti-contamination clothing at all was in case the air conditioner should fail or that an operator might have to get out of the

vehicle in a contaminated area. Contamination was apparently precluded by the extensive filtering of the intake air, sealing the vehicle, and by the positive pressure produced in the vehicle by the air conditioner fan.

The gamma-scanner vehicles and operators were positioned at the CP and remained in radio contact with the 2.5 project officer prior to each shot. Upon his instructions, the vehicles proceeded to their assigned arc and began an east-west traverse of the arc along prepared roads. Speed of traverse was kept to 5 mph or less so that dust resuspension would be held at a minimum and most accurate detection of a rise in count rate could be noted. When a rise was noted, this information was radioed back to the CP, and a mark indicating station location was made on the recorder paper. This procedure was also followed for peak value recordings, as well as the return of the count rate to background. When the vehicle had reached the end of an arc, the team reported to the CP and then proceeded to the next assigned arc. The data reported by radio allowed a rapid delineation of the outer limits and the hot line. Further refinement of gamma scanner survey contours was accomplished by a careful analysis of the recorder traces at a later time, noting the beginning, peak, and return to background.

Figure 3.6 is a representative trace of a typical gamma scan recorder record of an arc traverse made on D-day of the Double Tracks event. The dual peak hot line was confirmed by alpha survey teams monitoring concrete pads.

In addition to arc scan on all four events, the gamma scanner vehicle was used to survey the close-in area near ground zero and to evaluate contamination of metal debris fragments. Since this work was performed in support of other projects, no specific procedure was established. Grid lines, in general, were used to provide easy location identification close-in except on CS II and CS III surveys around the bunkers, which were made in concentric circles out to radii of 95 and 200 feet, respectively. Pieces of metal debris were placed under the detector to determine relative levels of contamination, but quantitative interpretation was not practical since the debris was in many shapes and sizes, and reproducible geometry was possible only for the smaller pieces. See Reference 7 for discussion.

3.4 EVENT PARTICIPATION

The vehicle-mounted gamma scanner participated in all four events of Operation Roller Coaster. The first event, Double Tracks, conclusively demonstrated the value of these vehicles in quickly locating the contaminating

material and plotting its distribution pattern. This information was radioed to the 2.5 project officer at the control point who was able to direct alpha survey teams to the contaminated portion of the array. This procedure saved a considerable amount of time and insured that data gathered was subjected to a minimum of degrading influences such as weathering, resuspension, and transposition. The gamma scanners were the first entries into the downwind arcs after each event.

3.4.1 Double Tracks Event (15 May 1963). The two gamma scanner vehicles were dispatched to Arcs B and H at H+30 minutes and proceeded across their arcs at a speed of 5 miles per hour or less. By H+1 1/2 hours, the outer edges and peak locations of contamination were delineated. The vehicles were then dispatched to other arcs until all 17 arcs were traversed. Suitable information was available from Arcs B and H to develop a preliminary downwind fallout pattern. The information obtained was of sufficient accuracy to allow more efficient use of the alpha monitoring teams.

3.4.2 Clean Slate I Event (25 May 1963). The two vehicle-mounted gamma scanners followed a pattern similar to that of the Double Tracks event. Information obtained was again effectively used to position the mobile alpha survey teams. The scanners began their

operations at H+45 minutes, and a preliminary plot of plutonium contamination limits and the hot line were available at the control point at H+1 3/4 hours. The pattern obtained was found to be consistent with later plots based on careful and detailed alpha monitoring. It is pertinent to point out that the area involved in this case was nearly 40 square miles, and while the gamma scanner work required only two vehicles and four people, the alpha survey required ten vehicles and twenty people.

Upon completion of the downwind array, the gamma scanner was brought into the GZ area where it was used to scan the close-in area. Measurements were made on the concrete pad and of metal debris located in the area. This was the only data that could be quickly obtained in the GZ area without radiochemistry and added materially in providing a quick estimate of accountability near GZ.

3.4.3 Clean Slate II Event (31 May 1963). Profiting by the experiences of DT and CS I, gamma scanning proceeded in a similar manner to those events with small refinements. Early gamma scan indicated a wide pattern of contamination extending throughout the array. The gamma scan data indicated an apparent hot line between Stations 020 and 040. Therefore, alpha survey procedures were modified to insure that the hottest areas were completely

surveyed. This was a fortunate decision since an unpredicted rain hit the array at H+9 hours and had original procedures been held, only about half of the grid would have been surveyed and valuable data would have been lost.

Additional surveys were made with the gamma scanner subsequent to D-day and, even after the heavy rain, showed a consistently similar pattern to that obtained on D-day. The equipment also proved very valuable in tracing the erratic hot line in the first 2,000 feet downwind.

3.4.4 Clean Slate III Event (9 June 1963). The initial surveys by the gamma scanner vehicles indicated a wide pattern of deposition to at least 8,000 feet downwind, which was similar to that observed on Clean Slate II. Since rain was again predicted for the afternoon of D-day, the alpha survey program was again modified to every fifth station except in the narrow hot line zone where every station was monitored. The rain materialized as predicted later on in D-day, obviating further alpha monitoring. The special pad clusters of concrete pads at CP05 and CP06 were contaminated on this event; PAC-3G readings averaged 80,000 and 12,500 cpm, respectively.

3.5 DISCUSSION

The operation of vehicle-mounted gamma scanners dur-

ing Operation Roller Coaster was a valuable asset in performing the required radiac surveys. Data taken with these units was highly repeatable and was consistent with alpha survey data. Also, the speed with which contaminated areas could be located, evaluated, and mapped with these units was considerably greater than would have been possible with hand-carried survey instruments alone.

The relative comfort and safety of the operator in performing a survey with a vehicle-mounted gamma scanner, as opposed to his using a hand-carried instrument, is an important factor in determining the value of these units.

While the limit of detection of the gamma scanners, as presently designed, is probably adequate for use in weapon accident situations, further refinements of the detector may be possible to lower this limit.

The distribution plots made on D-day from gamma scanner data and from alpha survey data agreed very closely, the only significant difference being on the detectable limits of the pattern. It was noted that where there is a steep gradient of isointensity contours, the vehicle-mounted gamma scanner survey agrees more closely with alpha survey plots than where the contour gradient is shallow. This can be accounted for by the fact that in areas of slowly decreasing levels of contamination laterally, it is more difficult to note the beginning of a build up on the

gamma scan trace. Figure 3.7 is the alpha survey distribution plot for Clean Slate II, and Figure 3.7-a (overlay) is a gamma scanner trace for that event.

In approximating quantities of material, the following calculations were used:

1. It was estimated that 200 counts per minute on a PAC-3G corresponds to a contamination level of 1 $\mu g/m^2$ of Pu^{239} when measured on a concrete pad. The theoretical maximum is 420 $\frac{cpm}{\mu g/m^2}$ and the reduction to 200 $\frac{cpm}{\mu g/m^2}$ in our approximation is based solely on judgment.
2. Combining (1) above with a 20:1 ratio of PAC-3G counts per minute to gamma scanner 17 Kev counts per minute (See Chapter 5) yields a value of approximately 10 counts per minute (17 Kev) for a contamination level of 1 $\mu g/m^2$ or 1 cpm (17 Kev) corresponds to 0.1 $\mu g/m^2$.

Calculation of the theoretically expected count rate for the gamma scanner follows:

1. Assume a Pu^{239} contamination level of 1 $\mu g/m^2$.
2. Approximately 4 percent of Pu^{239} disintegrations yield the 17 Kev X-ray of interest.
3. The area of the 2 1/2-inch-diameter detector crystal is 3.17×10^{-3} m^2.
4. The 17 Kev x-ray activity (2) from 1 μg of Pu^{239}

is 2.75×10^3 cpm.

5. Therefore, a contamination level of 1 $\mu g/m^2$ of Pu^{239} should yield 8.9 cpm in the 17-Kev channel. Alternately, 1 cpm in the 17-Kev channel should correspond to 0.11 $\mu g/m^2$. This value agrees closely with that determined above; i.e., 0.1 $\mu g/m^2$.

3.6 RESULTS

In order to get a continuous plot of the distribution of weapon material in the ground zero grids and to confirm the reproducibility of data collection, the gamma scanners went into these areas after D-day and obtained plots along the lines normal to the center radial and downwind of GZ. For demonstration purposes, the plot shown in Figure 3.8 was made by running the CM, CN, CO, CP, and CQ lines of Double Tracks and plotting the count rate data for each line on the same section of recorder paper. The numbered marks indicate successive vehicle positions along the lines and correspond to like-numbered grid lines parallel to the center radial. Note that the mirror image plot obtained as the vehicle traversed the grid lines in the opposite direction.

Certain of the arcs were also scanned after D-day to determine the degree of attenuation in count rate which

results from time and weathering. Of particular interest was a factor of two attenuation in the Pu^{239} channel (17 Kev) count rate from D-day to D+1 on Clean Slate II. This resulted from a hard rain during the afternoon and evening of D-day. Over the same period, alpha count rates were reduced by a factor of 20. However, it is worthy of note that areas of appreciable contamination (25 $\mu g/m^2$) can still be located by a gamma scanner after some weathering.

The scanners were also used to evaluate the ground zero pads of the three Clean Slate events and the metal throwout pieces from Clean Slate II and III. It was found that the ratio of the count rates of the Pu^{239} (17 Kev) and Am^{241} (60 Kev) channels varied considerably. This was attributed to the varying depths at which the material had been deposited and the greater effect of depth of deposition on the plutonium X-ray than on the americium gamma.

The areas around the Clean Slate II and III GZ's were surveyed in concentric circles, and approximations of total material contained in these areas were made from the resulting data. The total areas thus surveyed were 200 feet diameter on Clean Slate II and 400 feet diameter on Clean Slate III.

The results of the gamma scanner operations are presented in Figures 3.9 through 3.16. A separate plot for the close-in area and the extended grid is provided for each event. Table 3.2, on which these plots are based, indicates the arc location of detectable limits and the location and intensity in cpm of the hot line. Although more closely related to Project 2.1, the gamma scan results obtained by concentric circle surveys around the GZ of CS II and CS III are provided as a matter of convenience for accountability calculations (Figures 3.17 and 3.18).

TABLE 3.1

VMGS*/PG 1**/PAC-3 CORRELATION DATA

EVENT	LOCATION	PAC-3G / VMGS	PAC-3G / PG-1	REMARKS
DT-Special Pad Cluster	CP-05			Deposition levels too low for correlation
CSI-Special Pad Cluster	CP-05			Deposition levels too low for correlation
CSI-GZ Concrete Pad	GZ	15:1	60:1	VMGS: PG-1 ratio determined 4:1 on Pad. PAC 3-G: VMGS determined by ARC survey
CSII-Special Pad Cluster	CP-05	20:1	53:1	
CSII	Arc B	26:1	67.1	
CSIII-Special Pad Cluster	CP-05	14:1	53:1	
	CP-06	20:1		Alpha contamination too low for PG-1

* VMGS - Vehicle-Mounted Gamma Scanner (17-Kev channel)
** PG-1 - Plutonium Gamma Probe/PAC 1S

TABLE 3.2

VMGS*/PAC 3G ARC CORRELATION DATA

		VMGS		PAC 3G		
EVENT	ARC	NET GAMMA SCAN PEAK (CPM) (17-Kev channel)	STATION NUMBER	AVERAGE PAC-3G PEAK (CPM)	STATION NUMBER	RATIO PAC 3G:VMGS
DOUBLE TRACKS	B	500	065	15,000	064	30:1
	C	300	056	8,500	055	28:1
	D	350	052	11,400	052	32:1
	E	250	051	11,600	049	46:1
	F	250	050	10,000	052	40:1
	H	250	048	7,300	050	29:1
	J	250	045	4,600	046	18:1
	K	200	045	4,300	045	21:1
	O	200	058	2,500	044	12:1
CLEAN SLATE I	B	1,500	020	24,000	023	16:1
	D	600	031	8,200	026	13:1
	F	650	029	9,200	030	14:1
	H	550	030	7,000	030	12:1
	J	400	029	7,500	029	18:1
	K	300	029	7,500	029	25:1
	L	250	029	7,000	029	28:1
	N	150	030	3,000	030	20:1
	P	200	032	4,000	032	20:1

*VMGS - Vehicle Mounted Gamma Scanner (17-Kev channel)

TABLE 3.2 (Continued)

VMGS*/PAC 3G ARC CORRELATION DATA

EVENT	ARC	VMGS NET GAMMA SCAN PEAK (CPM) (17-Kev channel)	VMGS STATION NUMBER	PAC 3G AVERAGE PAC-3G PEAK (CPM)	PAC 3G STATION NUMBER	RATIO PAC 3G: VMGS
CLEAN SLATE II	B	3,800	019	100,000	021	26:1
	C	1,300	024	52,250	024	40:1
	D	1,250	020	26,700	023	21:1
	E	1,200	017	33,000	023	27:1
	F	1,050	019	12,800	024	12:1
	G	750	023	23,350	023	31:1
	H	650	025	20,000	025	31:1
	I	400	024	4,850	023	12:1
	J	450	025	10,000	025	22:1
	K	300	026	7,000	027	23:1
	L	200	025	3,300	025	16:1
CLEAN SLATE III	B	5,700	022	57,000	022	10:1
	C	4,400	026	65,000	025	14:1
	D	2,300	030	55,000	029	24:1
	E	1,650	031	33,000	030	20:1
	F	1,150	033	35,000	032	30:1
	G	1,050	033	23,000	033	22:1
	H	900	034	23,000	034	25:1
	I	500	036	14,800	036	30:1
	J	450	035	10,000	035	22:1
	K	350	035	7,600	034	22:1
	L	150	036	5,250	035	35:1

*VMGS - Vehicle Mounted Gamma Scanner (17-Kev channel)

Figure 3.1 Front quarter view of vehicle-mounted gamma scanner. (DASA-103-05-TTR-63)

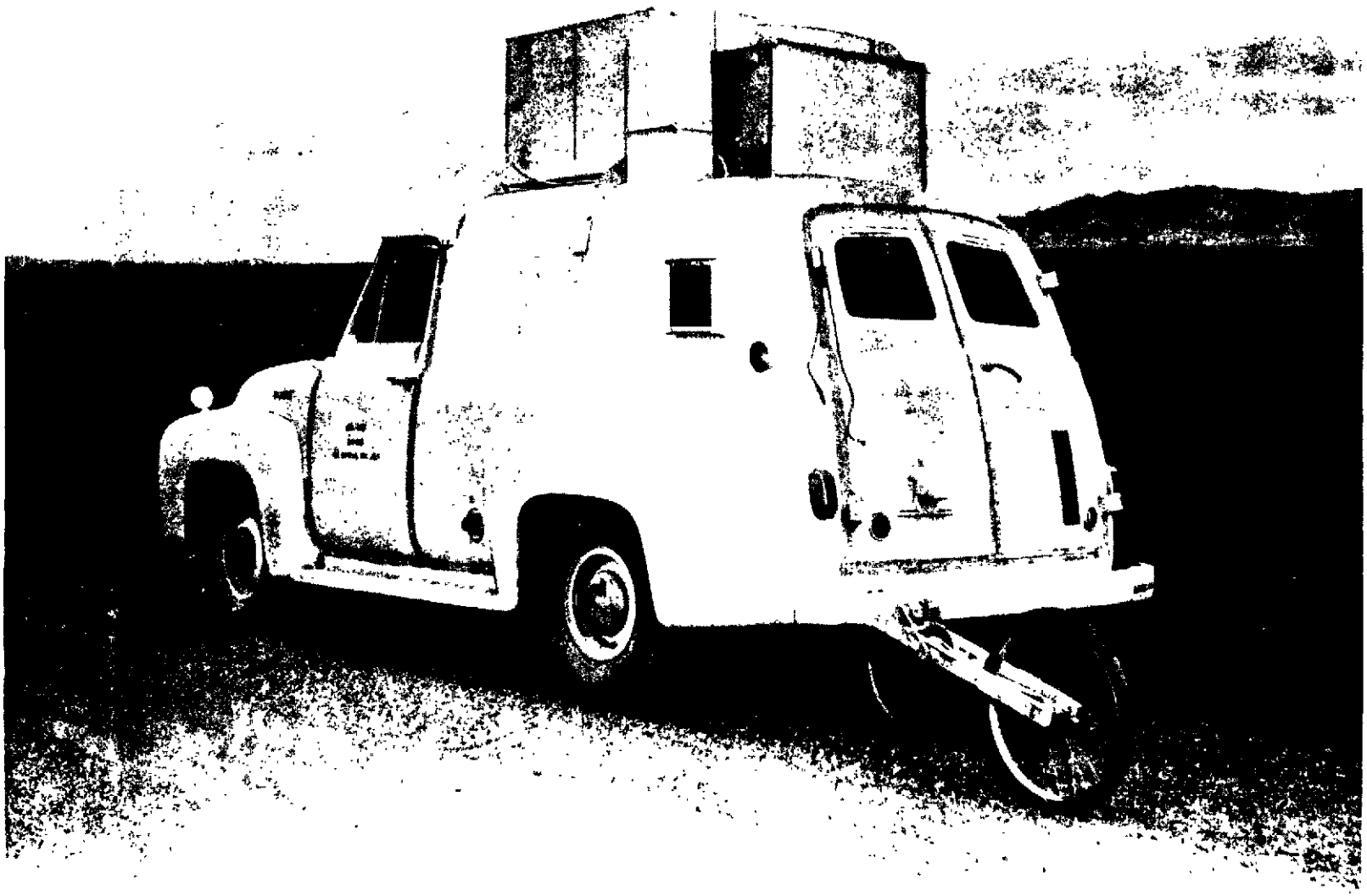


Figure 3.2 Rear quarter view of vehicle-mounted gamma scanner. (DASA-103-06-TTR-63)

Figure 3.3 Single channel analyzers and recorder mounted in vehicle-mounted gamma scanner. (DASA-103-09-TTR-63)

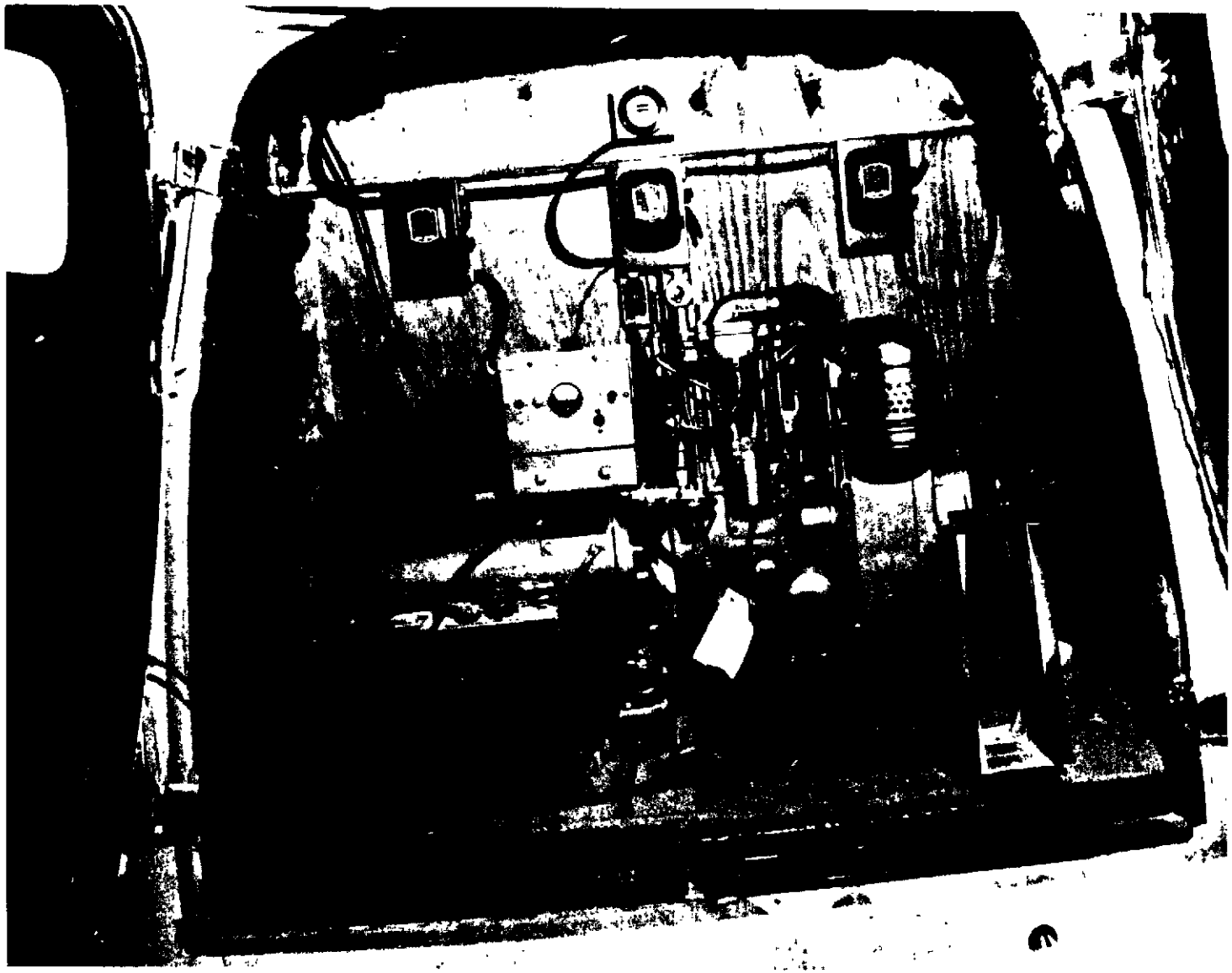


Figure 3.4 Rear view of vehicle-mounted gamma scanner showing generator installation. (DASA-103-08-TTR-63)

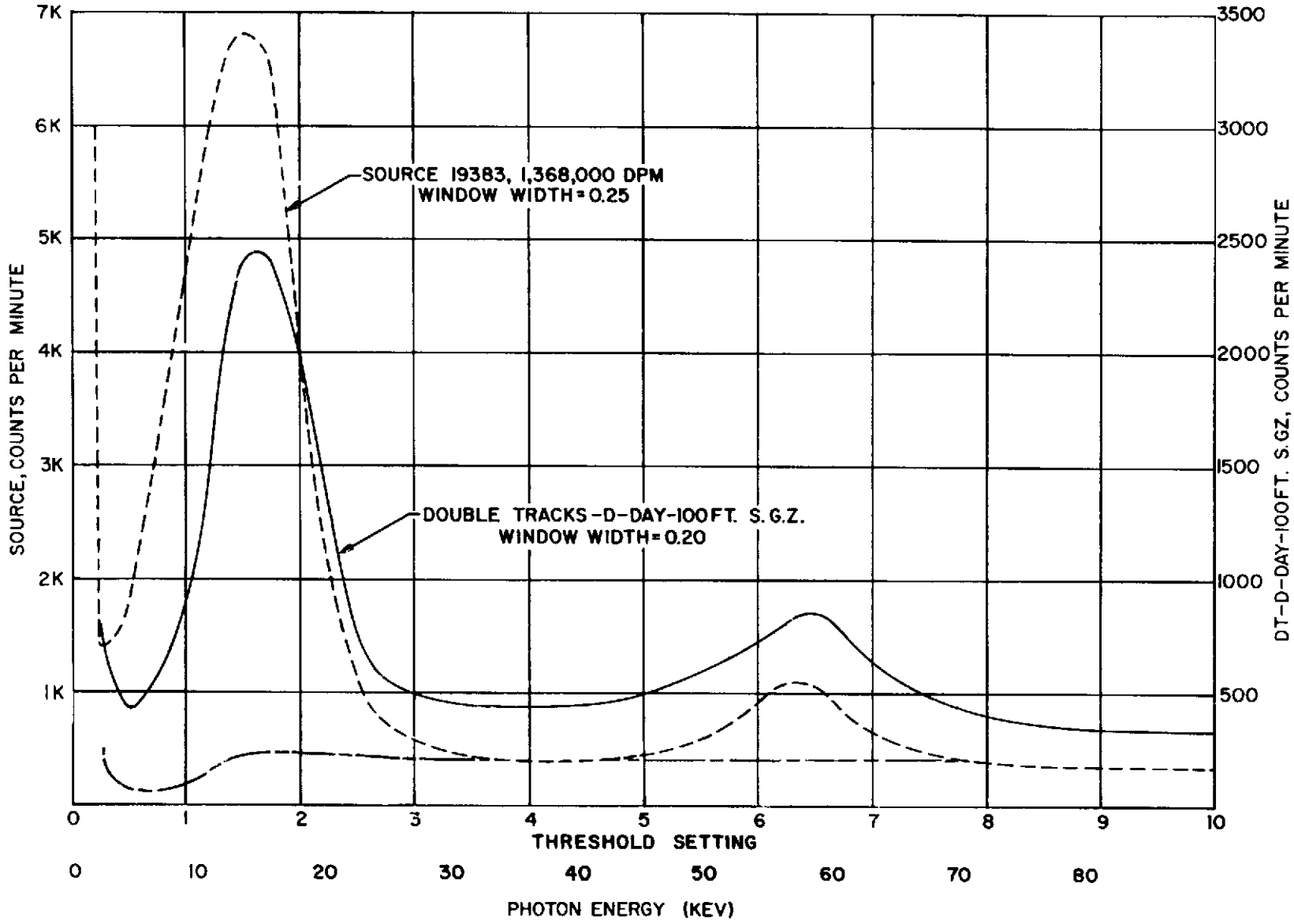


Figure 3.5 Comparison of gamma spectrum from Double Tracks material and source.

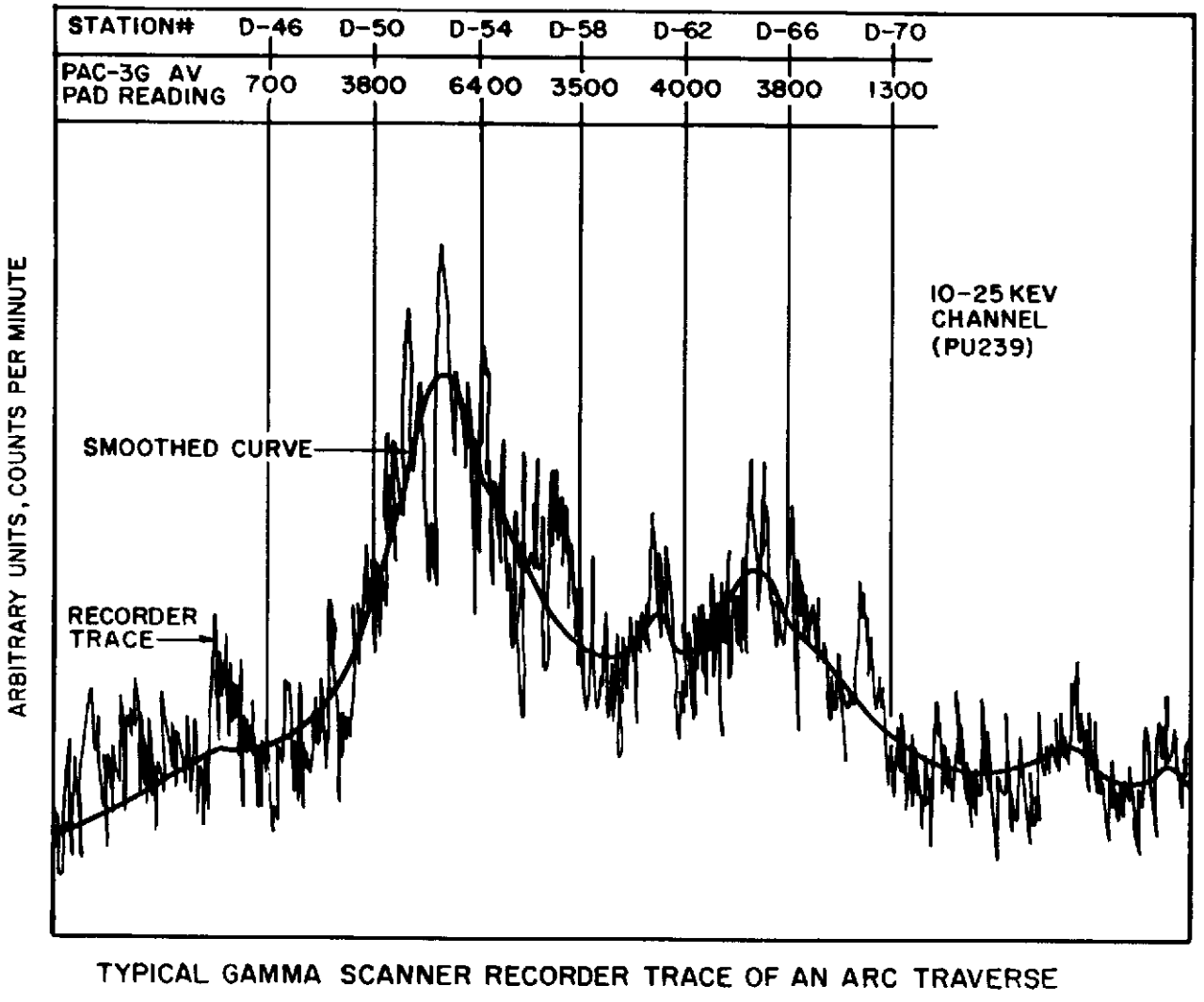


Figure 3.6 Typical gamma scan arc traverse, Double Tracks.

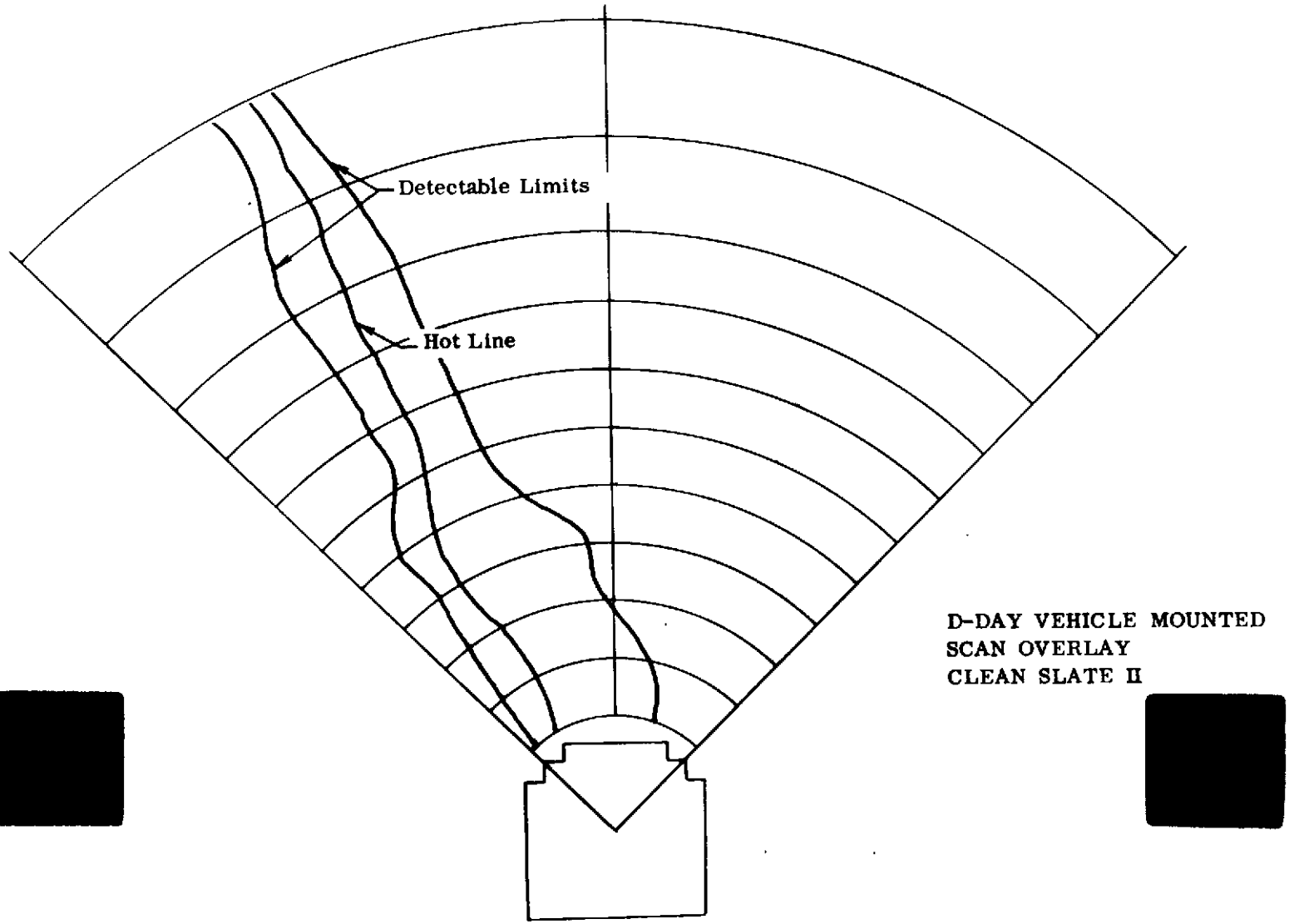


Figure 3.7-a Translucent overlay, gamma scanner contour, CS II.

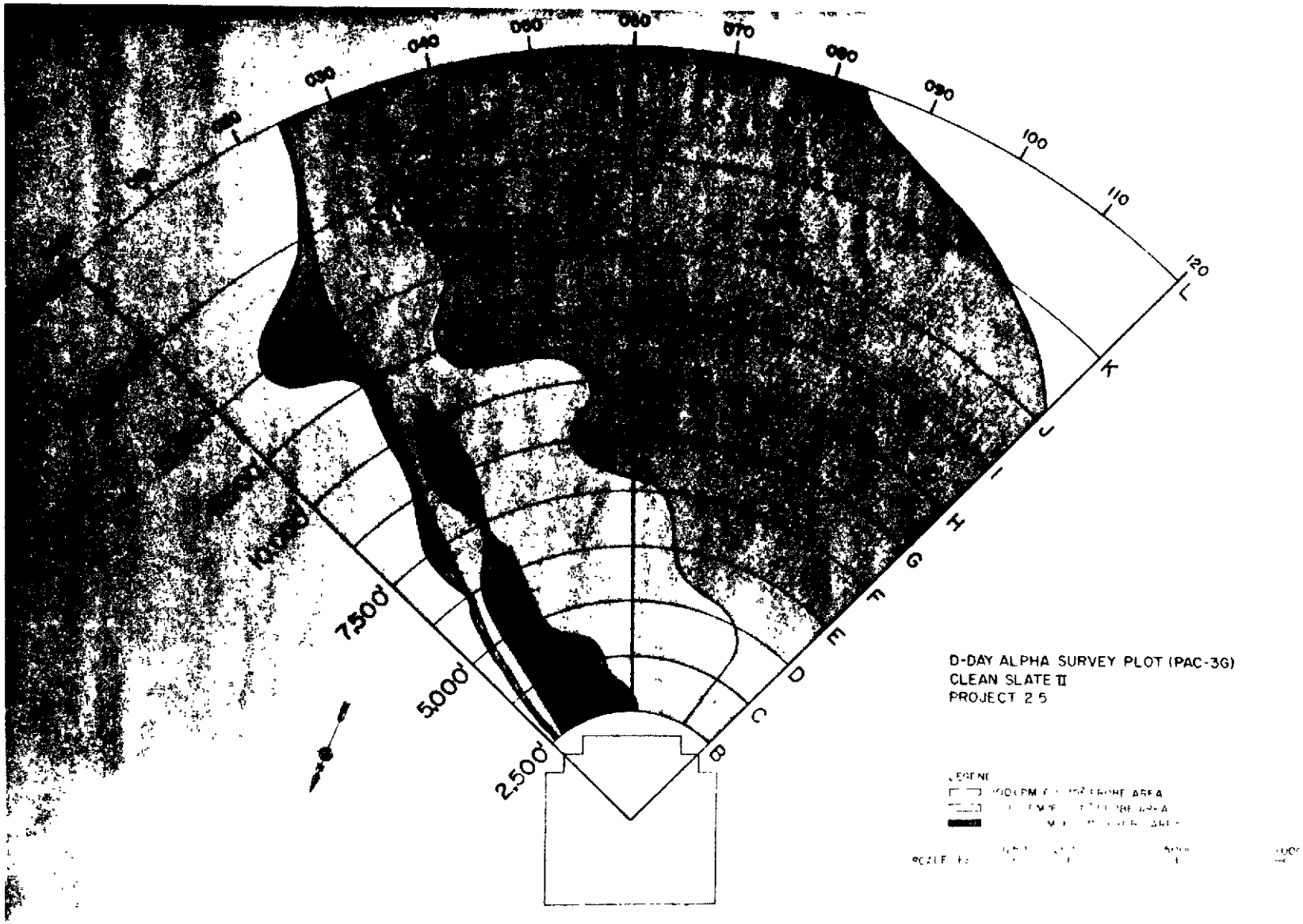


Figure 3.7 Alpha survey plot, CS II.

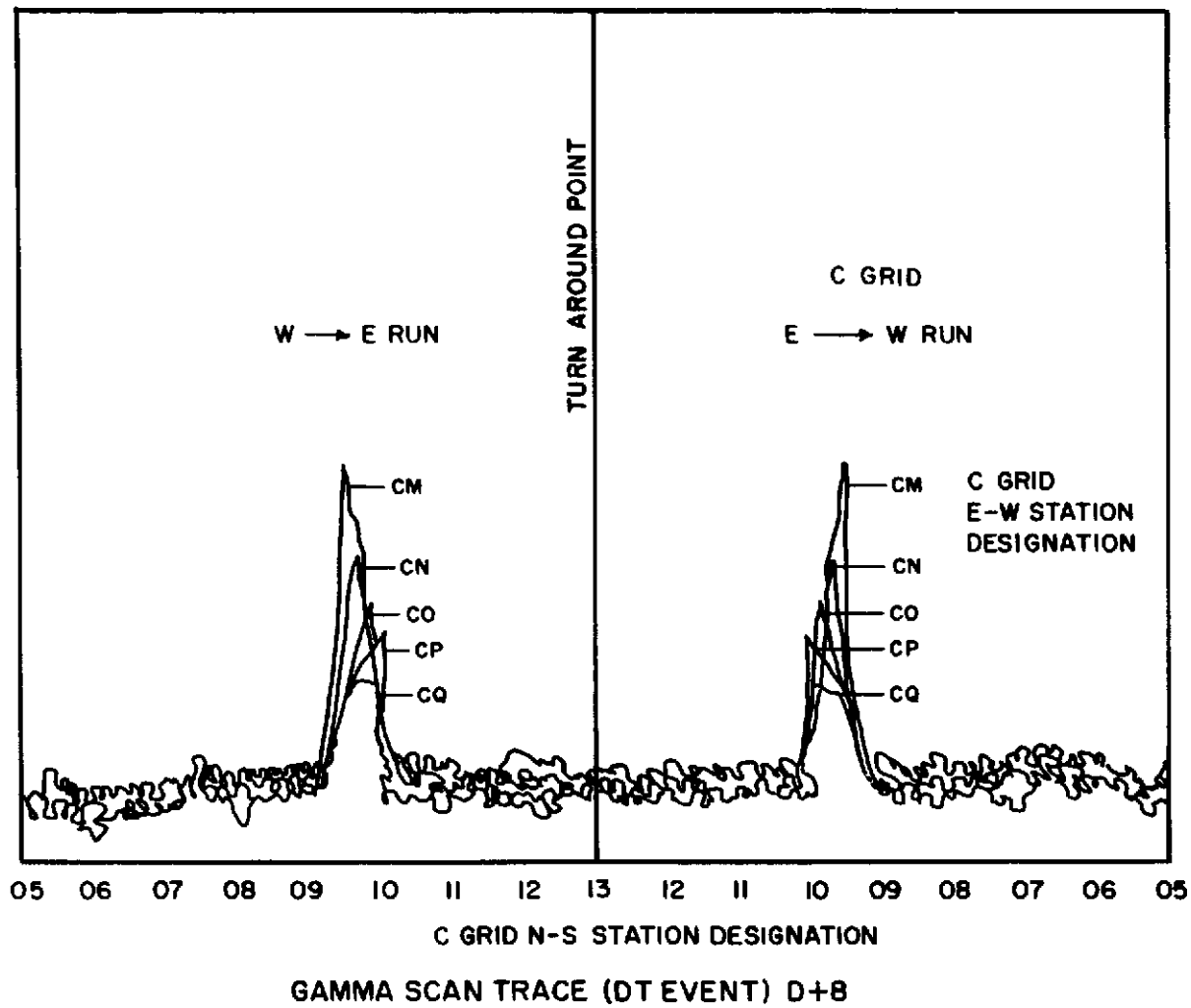


Figure 3.8 Gamma scan trace showing reproducibility of data.

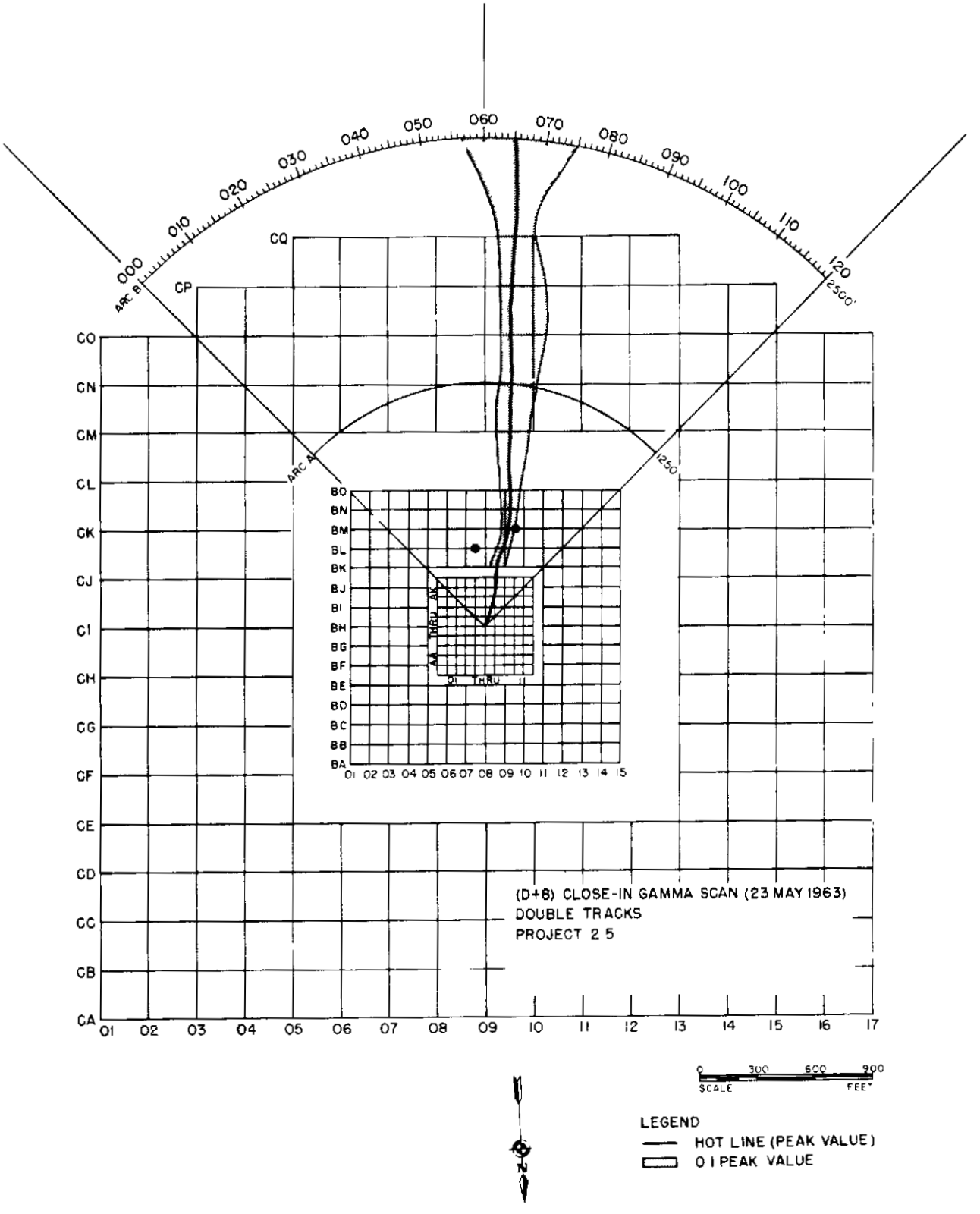


Figure 3.9 Close-in gamma scan, Double Tracks.

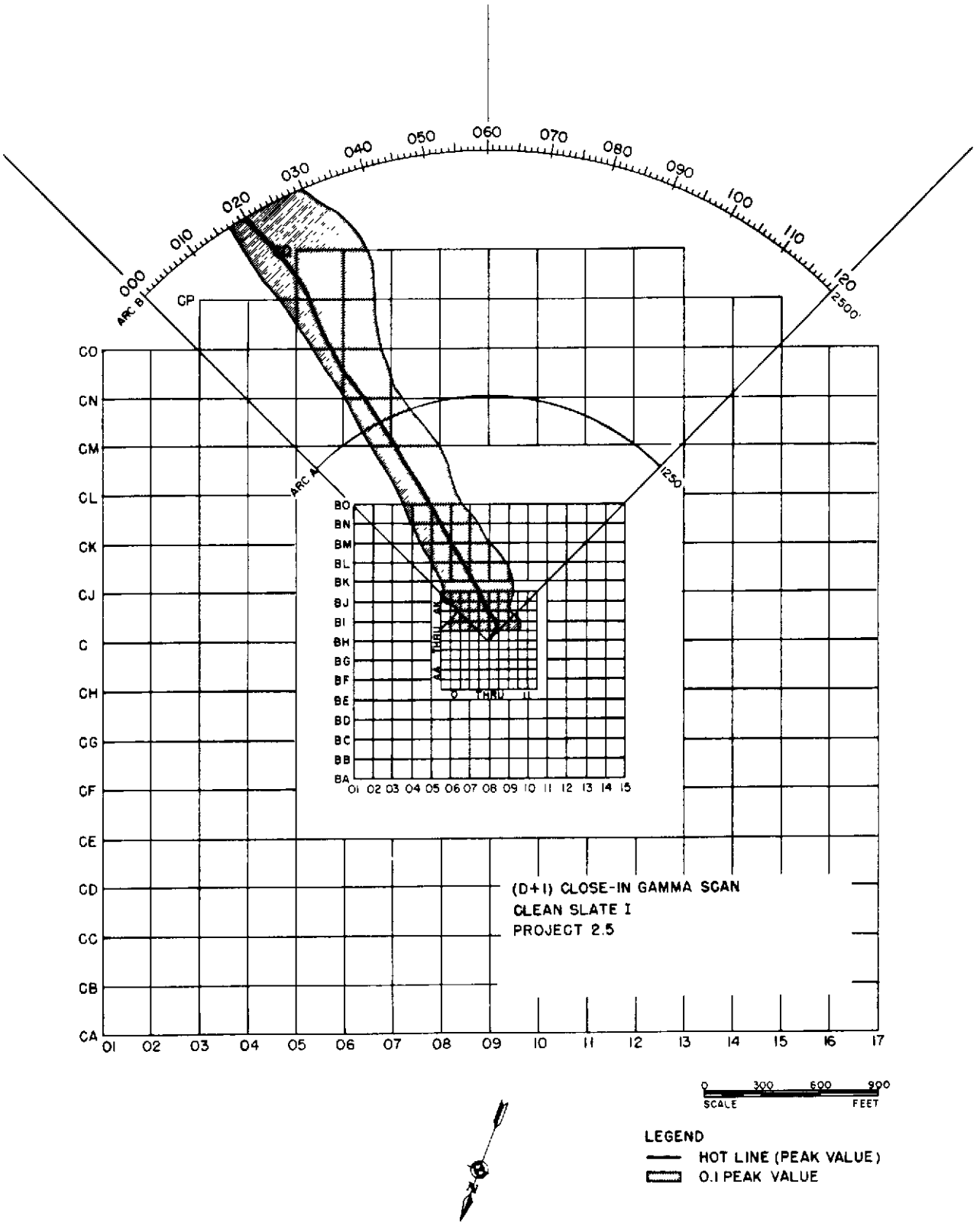


Figure 3.10 Close-in gamma scan, CS I.

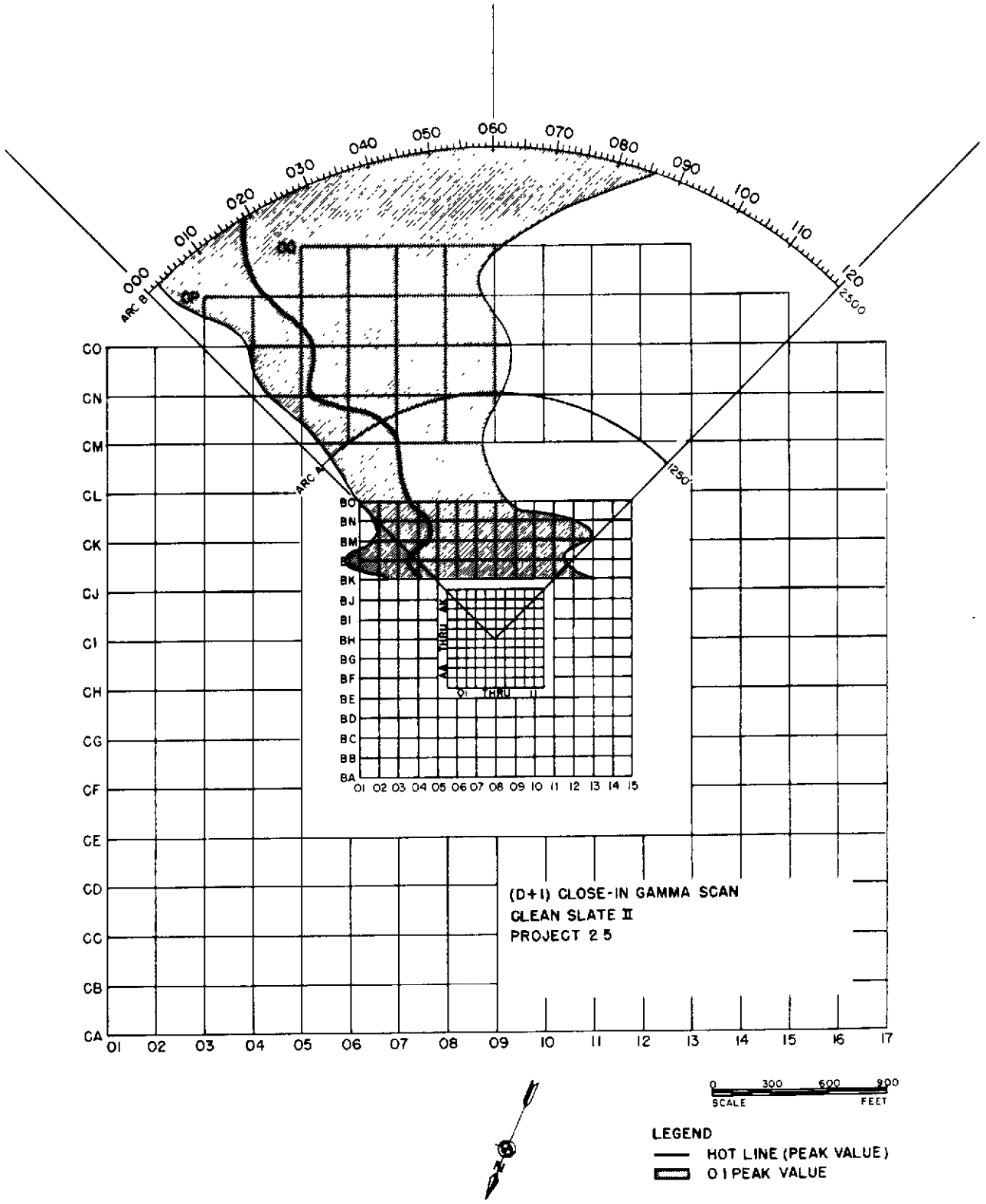


Figure 3.11 Close-in gamma scan, CS II.

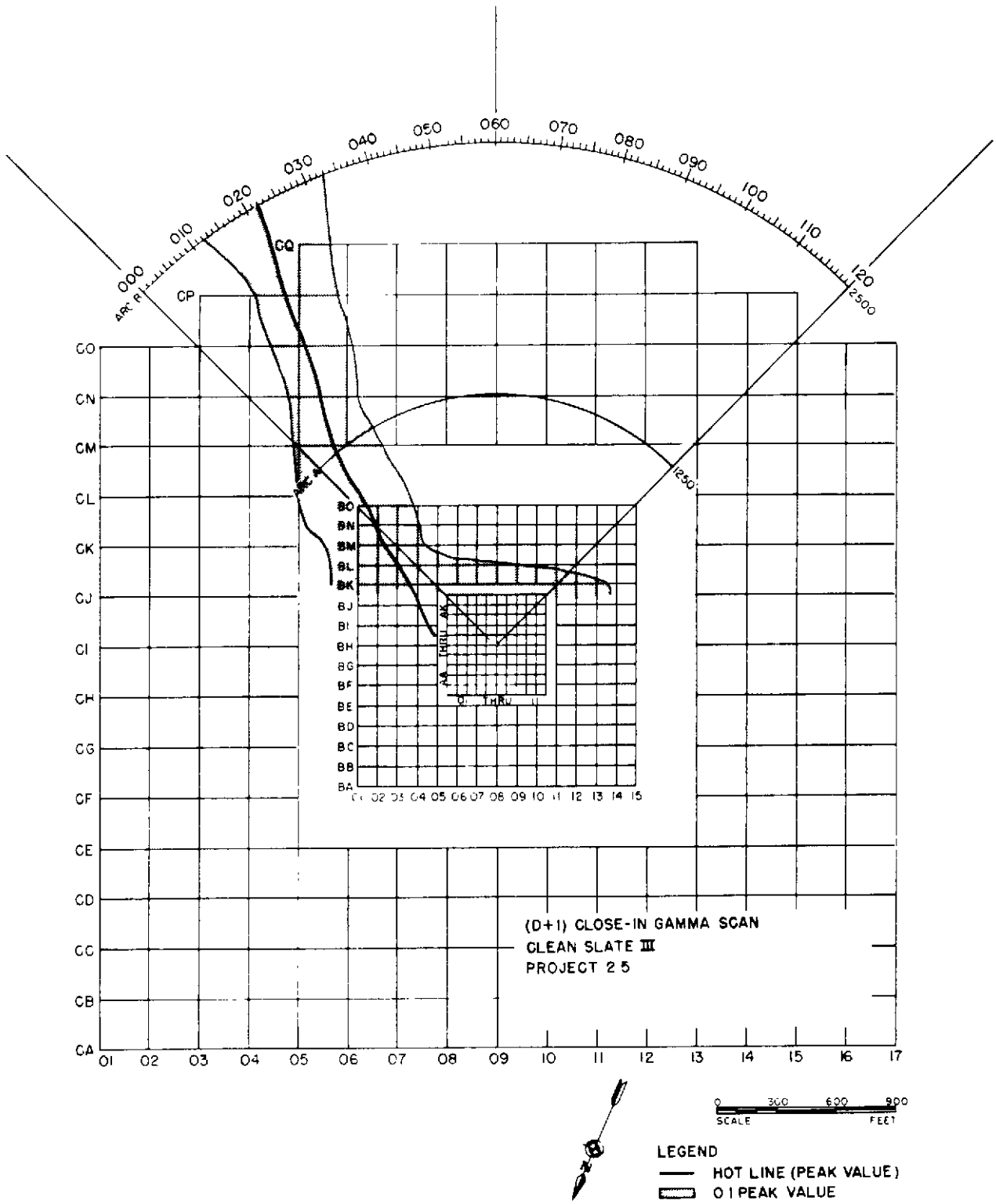


Figure 3.12 Close-in gamma scan,CS III.

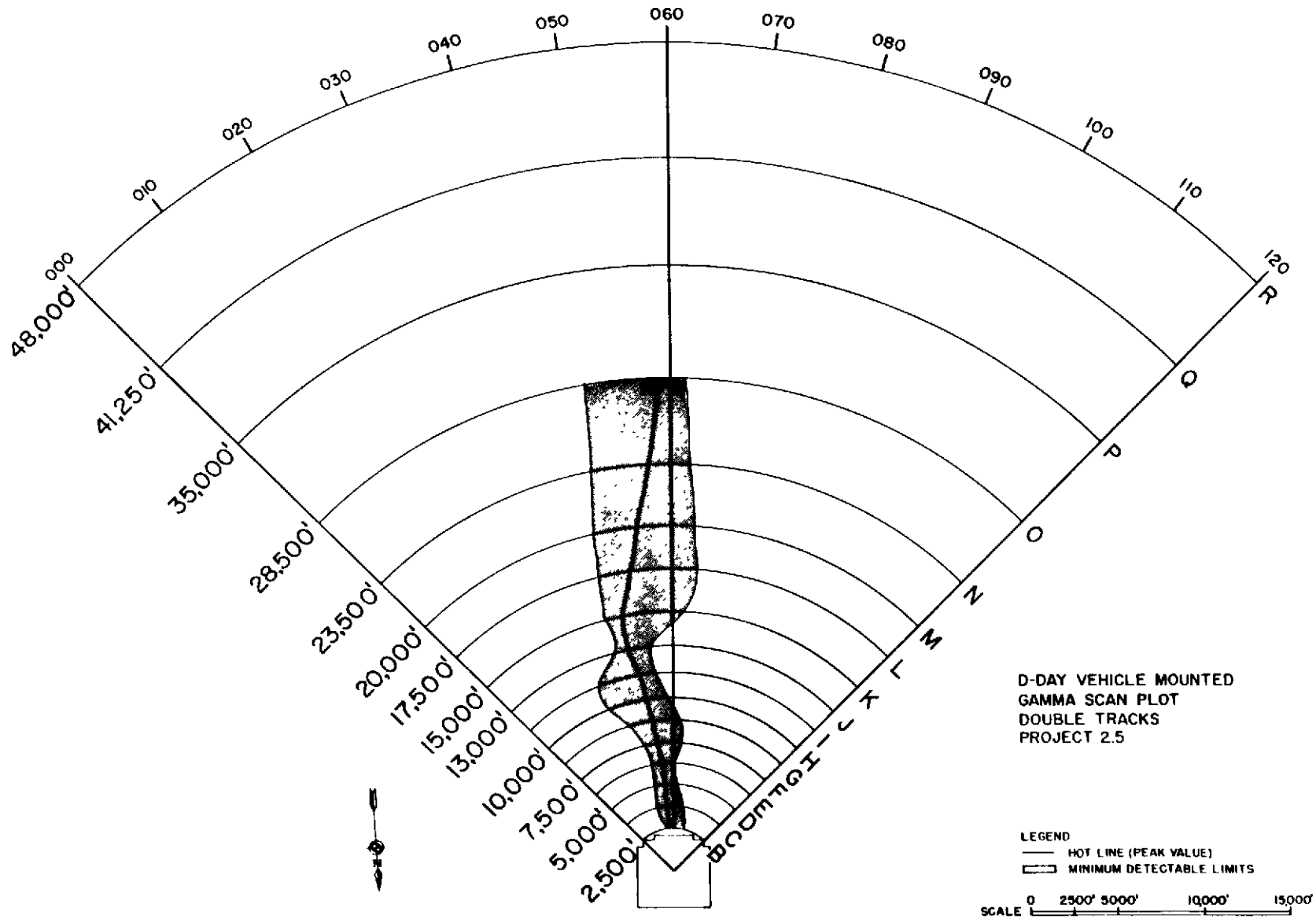


Figure 3.13 Vehicle-mounted gamma scanner plot, Double Tracks.

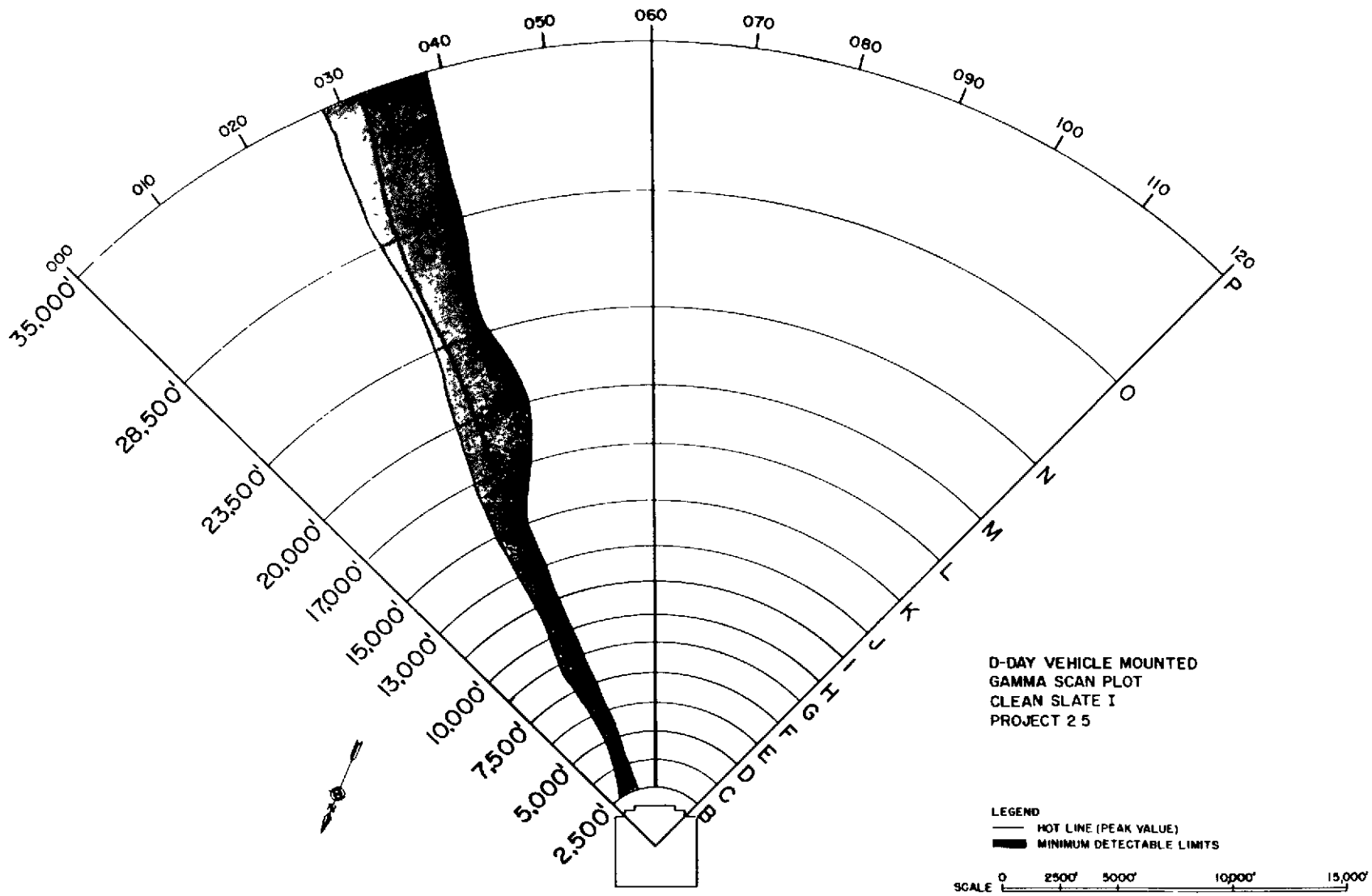


Figure 3.14 Vehicle-mounted gamma scanner plot, CS I.

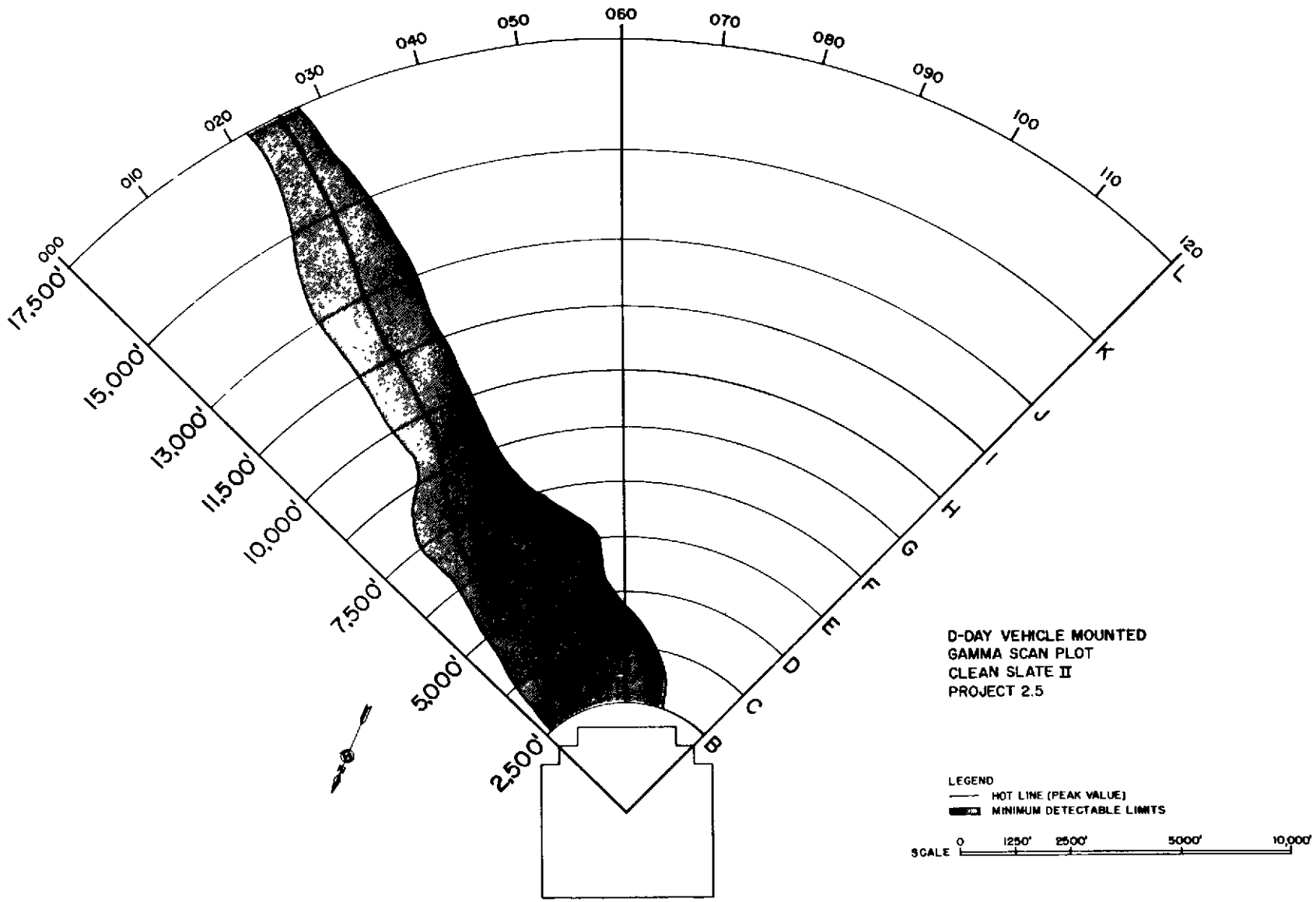


Figure 3.15 Vehicle-mounted gamma scanner plot, CS II.

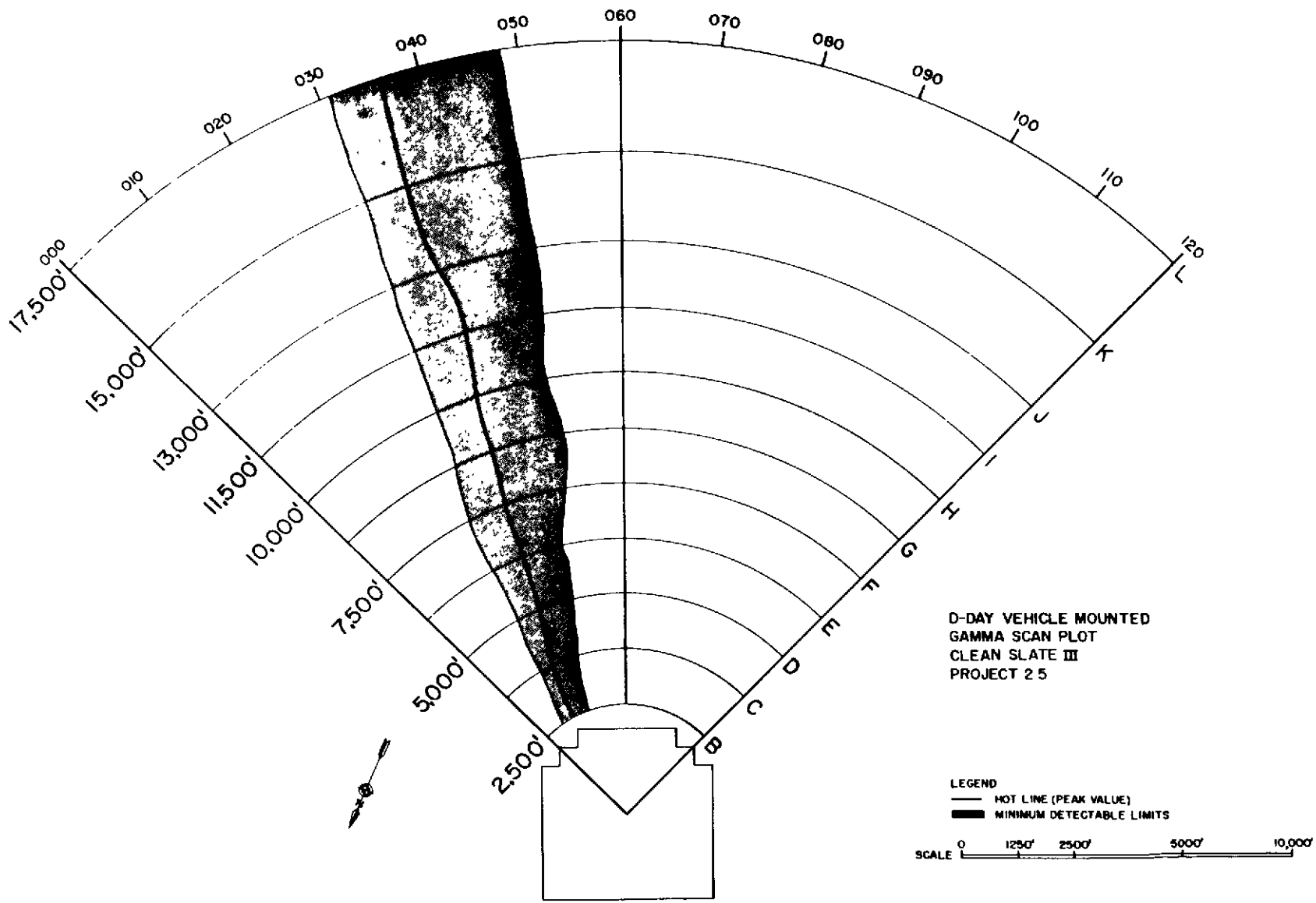


Figure 3.16 Vehicle-mounted gamma scanner plot, CS III.

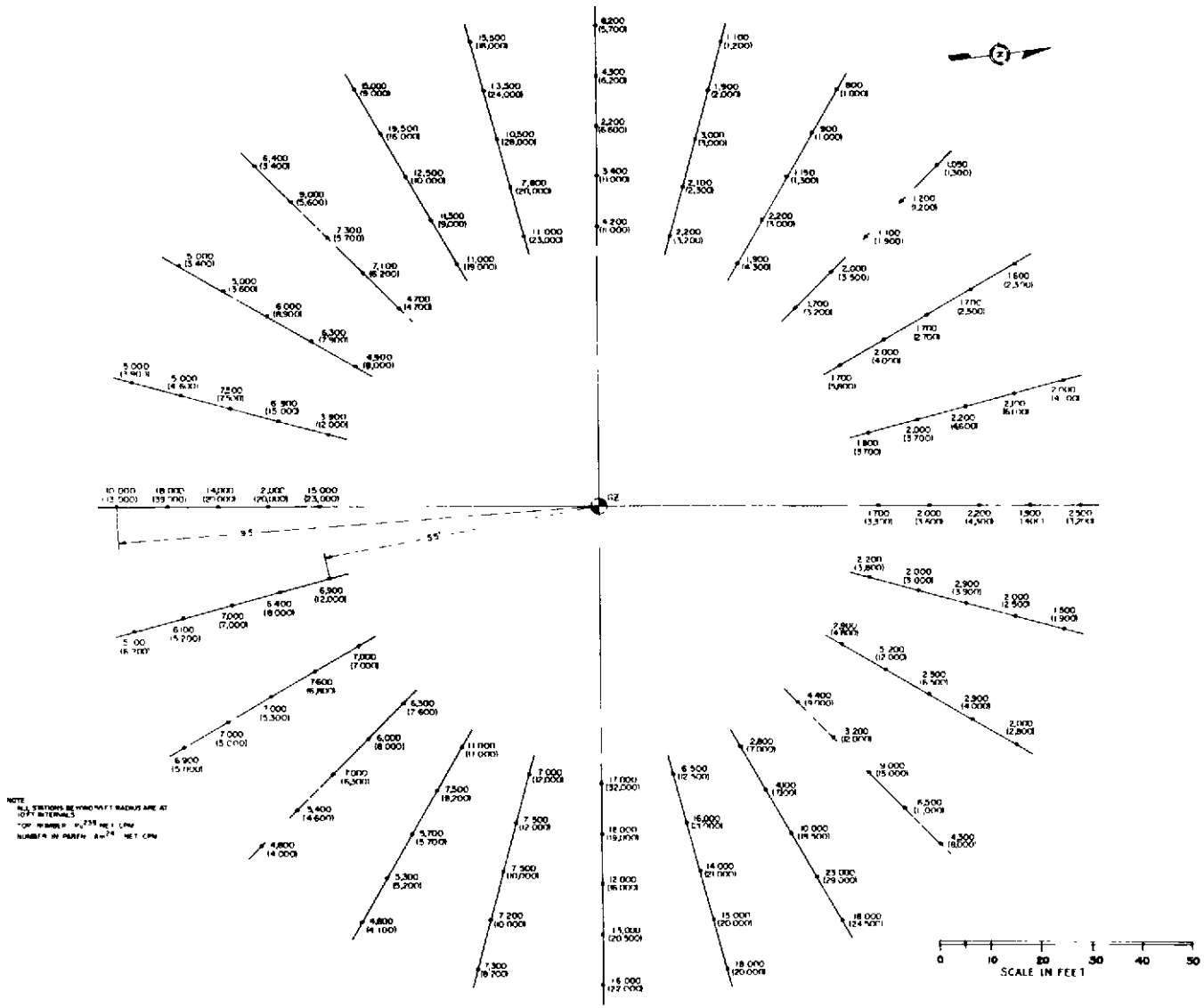


Figure 3.17 Vehicle-mounted gamma scanner concentric survey, CS II.

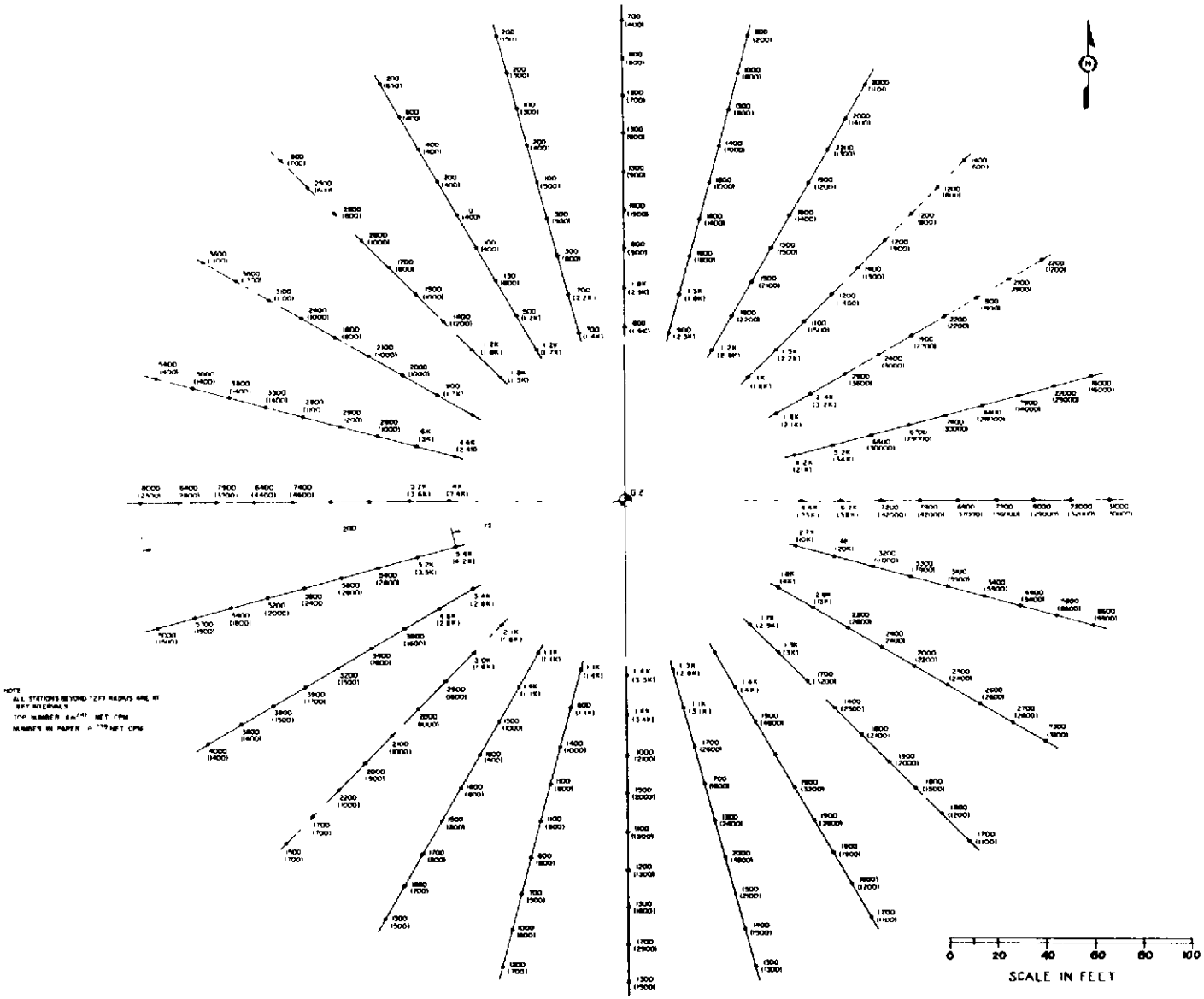


Figure 3.18 Vehicle-mounted gamma scanner concentric survey, CS III.

CHAPTER 4

PLUTONIUM FALLOUT SURVEY WITH FILTER DISC COLLECTORS

From the time of the original conception of the plan for conducting the alpha survey on Operation Roller Coaster, it was felt that the use of filter discs as a survey method could be of considerable value. Not only would the filter discs be valuable as a back-up data collection technique but would furnish a third, completely independent method of plotting the alpha contamination. At the time it was not considered that this would be an accurate quantitative survey but would provide a rapid qualitative tool. The counting of the filter discs could also be accomplished during a period of time when work activities were at a low ebb, whereas the radiac survey and vehicle-mounted gamma scanner survey were, by necessity, conducted immediately following the event.

4.1 INSTRUMENTATION

Instrumentation for this work was very simple, inexpensive, and straightforward. The filter discs consisted of a 4.25-cm Whatman No. 1 filter paper attached to a 1 5/8-inch-diameter by 1/16-inch-thick steel disc. Each disc was pre-marked with the event number, arc, and station number (for example: 1-C-044, was Double Tracks, Arc C,

station 044). Counting equipment consisted of two Eberline Model SAC-3 Scintillation Alpha Counters, Figure 4.1, which were set up in a trailer at the Tonopah Test Range.

4.2 CALIBRATION

Calibration of the SAC-3 was accomplished by the use of a standard Pu^{239} source. Filter disc activity plots were drawn using raw cpm data which was selected to represent the detectable limits and peak value.

4.3 PROCEDURES AND OPERATIONS

The filter discs were placed on the corner of the 1-foot by 1-foot concrete pads provided for alpha survey on D-1 for each event. This was accomplished by project personnel at the time that the pads were uncovered in preparation for each event.

As the survey teams traversed the arcs and the grid array on their initial survey, the filter discs were picked up with tweezers and placed in individual glassine envelopes to prevent cross contamination. These envelopes were then placed in a plastic bag attached to the dashboard of the vehicles. When the alpha survey teams completed their assignments for D-day, the plastic bags were placed in a second plastic bag at the Rad-Safe Base Station and taken to the trailer laboratory. One end of this trailer was set up as a counting room and

contained two scintillation alpha counters.

The actual counting of the discs started on D+2 for each event. Each disc was counted for a one-minute period. Personnel wore rubber gloves, the working area was monitored frequently, and the counted discs were placed in a plastic lined box and taken to the Rad-Safe Base Station for disposal. The counting was accomplished in four-hour shifts with two men per shift.

For the Double Tracks event, every disc was counted. This was very time consuming [completed on 3 June 1963 (DT D+18)] and in most cases showed no contamination on the arcs from Stations 000 to 030 and 080 to 120. Observing a narrow pattern similar to Double Tracks on the Clean Slate I event and having the experience and data of Double Tracks, only those discs from Stations 000 to 060 on each arc were counted. With the data available from the vehicle-mounted gamma scanners and the alpha survey, only the discs from Stations 010 through 030 and subsequently every fifth station on each arc were counted on Clean Slate II. As on the previous event, available data was taken into consideration, and discs counted on Clean Slate III were from Stations 010 to 050 and then every fifth station.

4.4 EVENT PARTICIPATION

Personnel connected with the filter disc survey group participated in all Roller Coaster events. A total of over 8,000 filter discs were placed and recovered, and in all, 5,406 discs were counted.

4.5 DISCUSSION

The use of a filter disc fallout technique survey was predicated mainly as a management control tool and a cross verification for alpha survey. It was not intended to be quantitative to any degree, but results have indicated a surprising degree of similarity to other survey methods when groups of stations are averaged and the raw data is plotted as a contour. Since it was not to be a quantitative exercise, minimum measures to preclude loss of contamination within the glassine envelopes were taken. In spite of this fact, reasonable similarity was achieved, particularly in the hot line area and the general contour trend. It is possible that procedures could be modified to improve correlation and to establish quantitative values, but this is dependent on the sampling area established as a minimum representative area for a given grid size.

4.6 RESULTS

In order to compare filter disc survey with alpha

survey and vehicle-mounted gamma scanner, data from each arc were examined, and it was roughly determined where definite and rapid increase in filter disc cpm occurred. Similarly, the peak value for each arc was determined. In the case of CS II and CS III, this peak was not sharp but followed the general plutonium distribution, broadly spread across the grid array. In these cases, a hot band can be determined, which compares favorably with the hot line determined by other survey methods. As with the gamma scanner, where isointensity contours are steep, closer agreement is noted to the alpha survey.

Since filter discs were disposed of after counting to reduce the possibility of contamination spread, they are not available for further radiochemistry. The fact that their use was purely qualitative was justification for their disposal, since no future use could be foreseen at the time.

In general the contours established by the filter disc data compared with that of the alpha survey. The filter discs were, in general, lower on the peak readings, but the hot line and general trend compared closely with that of the alpha survey. In order to compare arc profiles, data were reduced to cpm per cm^2 for Arc B of Clean Slate III. A comparison of filter disc and alpha survey data for Arc B is shown in Figure 4.2. Figure 4.3,

with overlays, is a comparison of contours determined by filter disc survey, alpha survey, and the vehicle-mounted gamma scanner. Figures 4.4 through 4.7 are individual contour plots of each event based on filter disc survey. Appendix B is a tabulation of raw data for each event.

As a first approximation, it seems that the size of the sampling surface is not a critical parameter. Concrete pads 10 inches by 10 inches (TG 57) and 12 inches by 12 inches (Roller Coaster) were used without notable differences. Filter papers 4.25 cm in diameter seem equally productive. The fact that the surface of interest is flat and relatively smooth seems to be more important than physical dimensions when located at distances greater than 2,500 feet downwind, where Roller Coaster comparisons were made.

Figure 4.1 Eberline Model SAC-3 scintillation alpha counter. (Eberline Instrument photo)

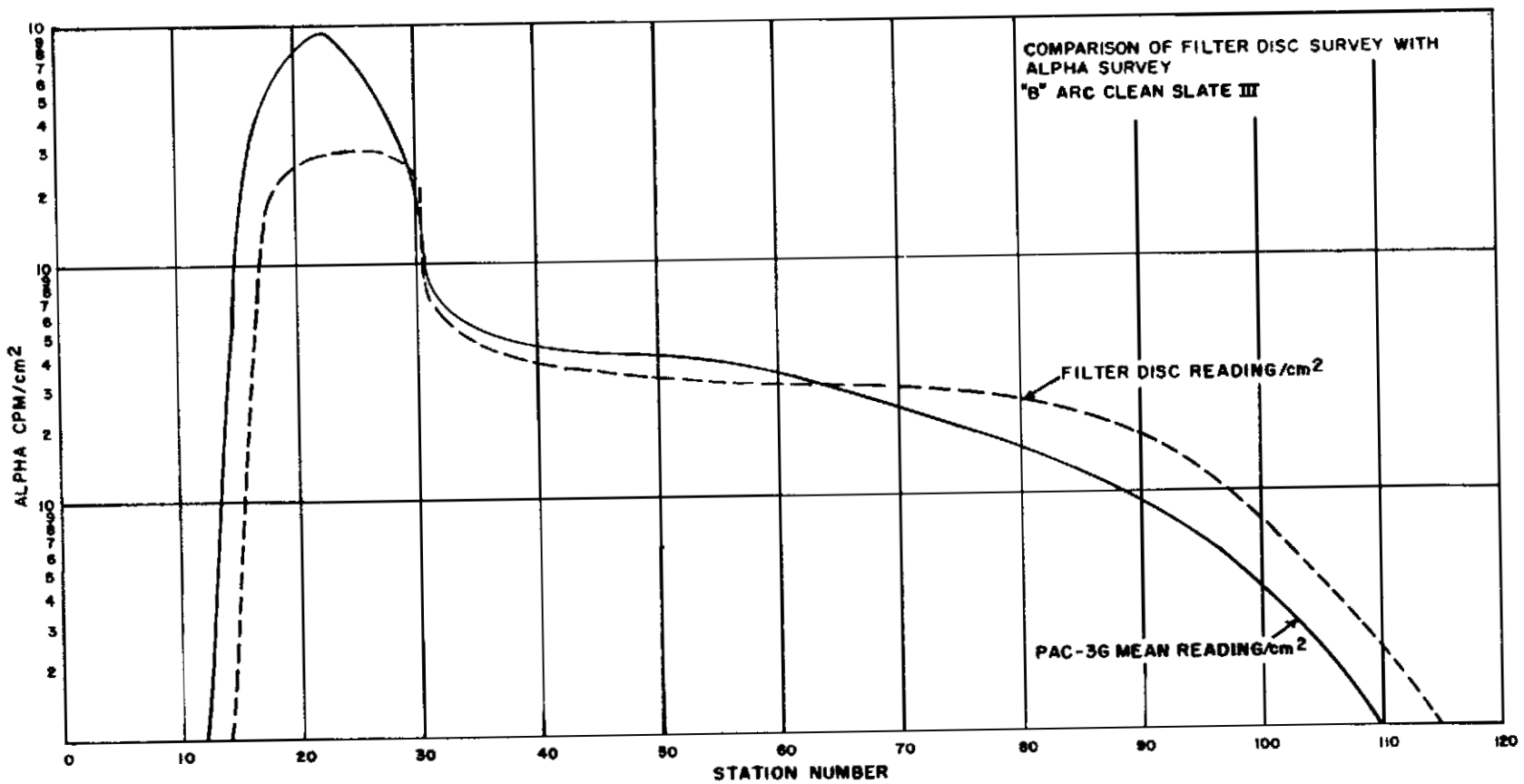


Figure 4.2 Arc profile comparison, filter disc survey and alpha survey.

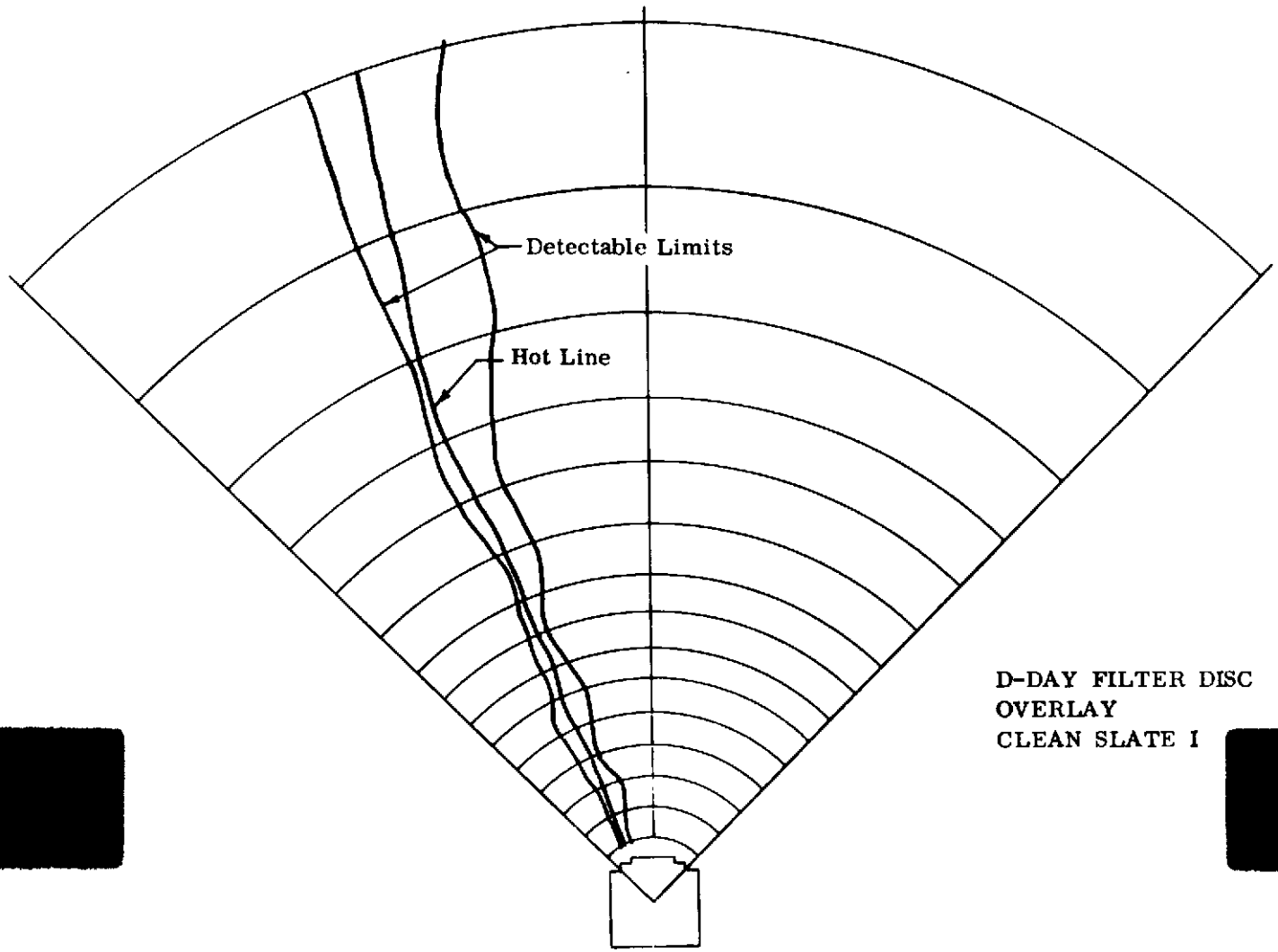


Figure 4.3-a Translucent overlay, filter disc survey, CS I.

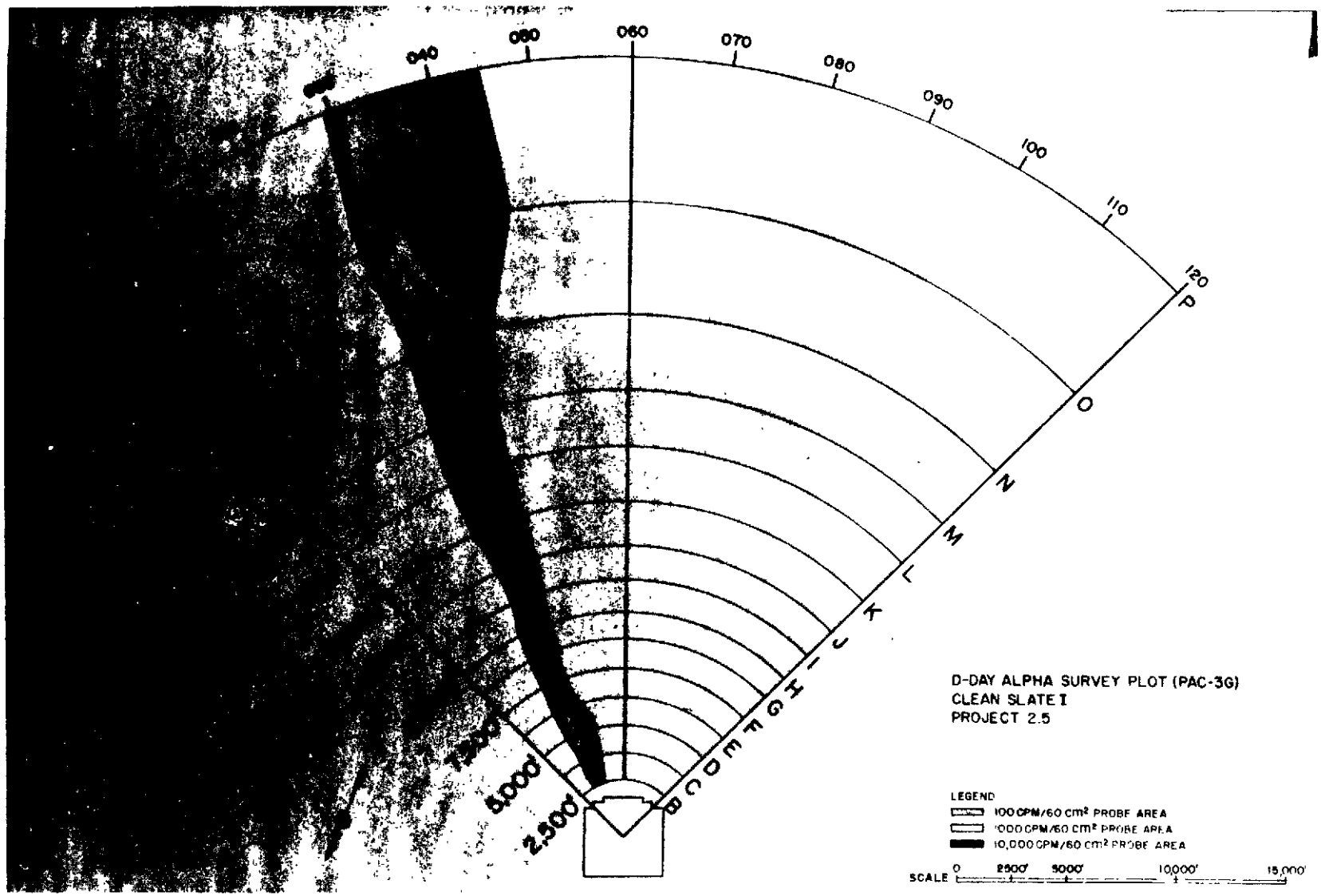


Figure 4.3 Filter disc survey comparison, CS I, alpha survey.

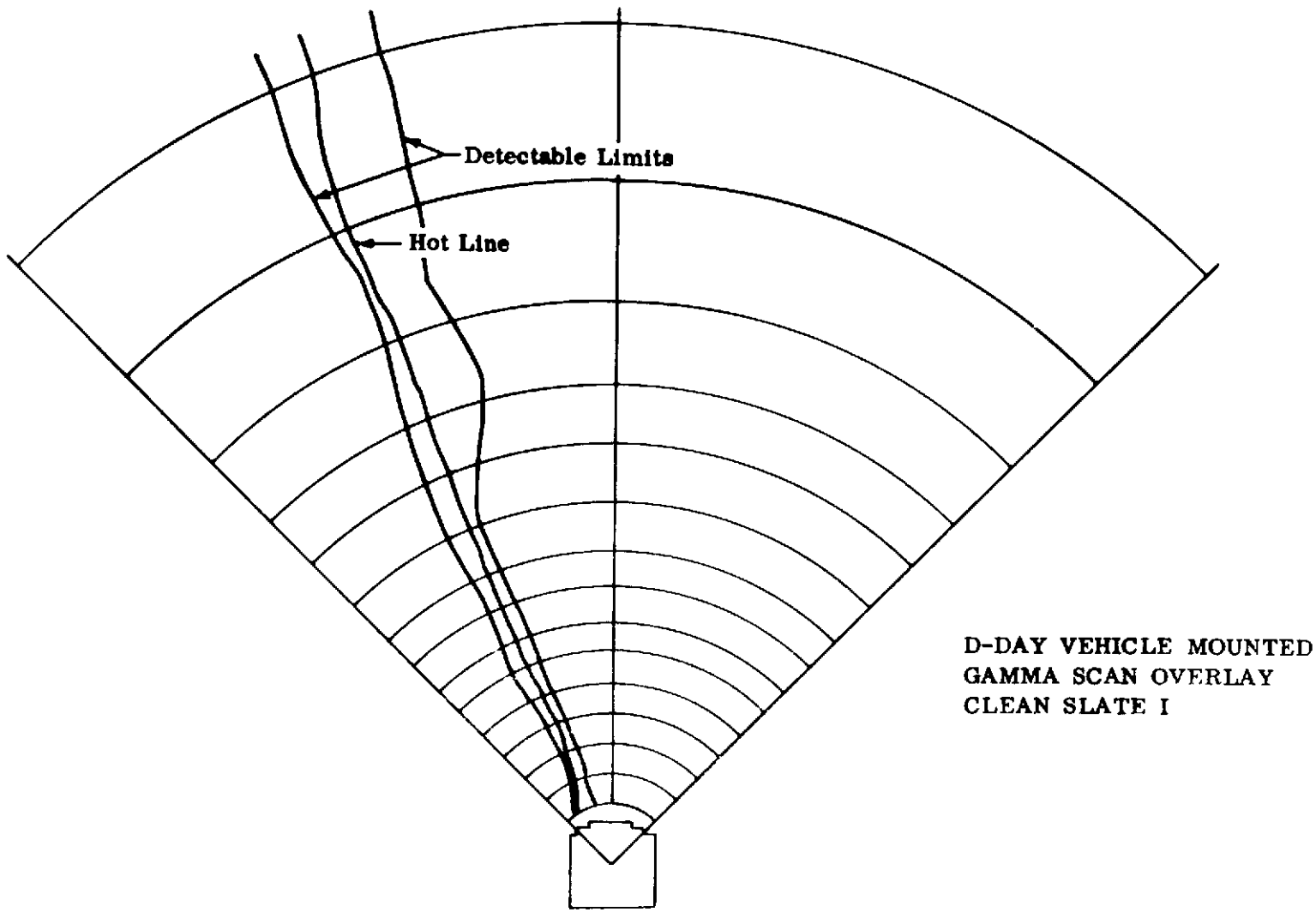


Figure 4.3-b Translucent overlay, vehicle-mounted gamma scanner, CS I.

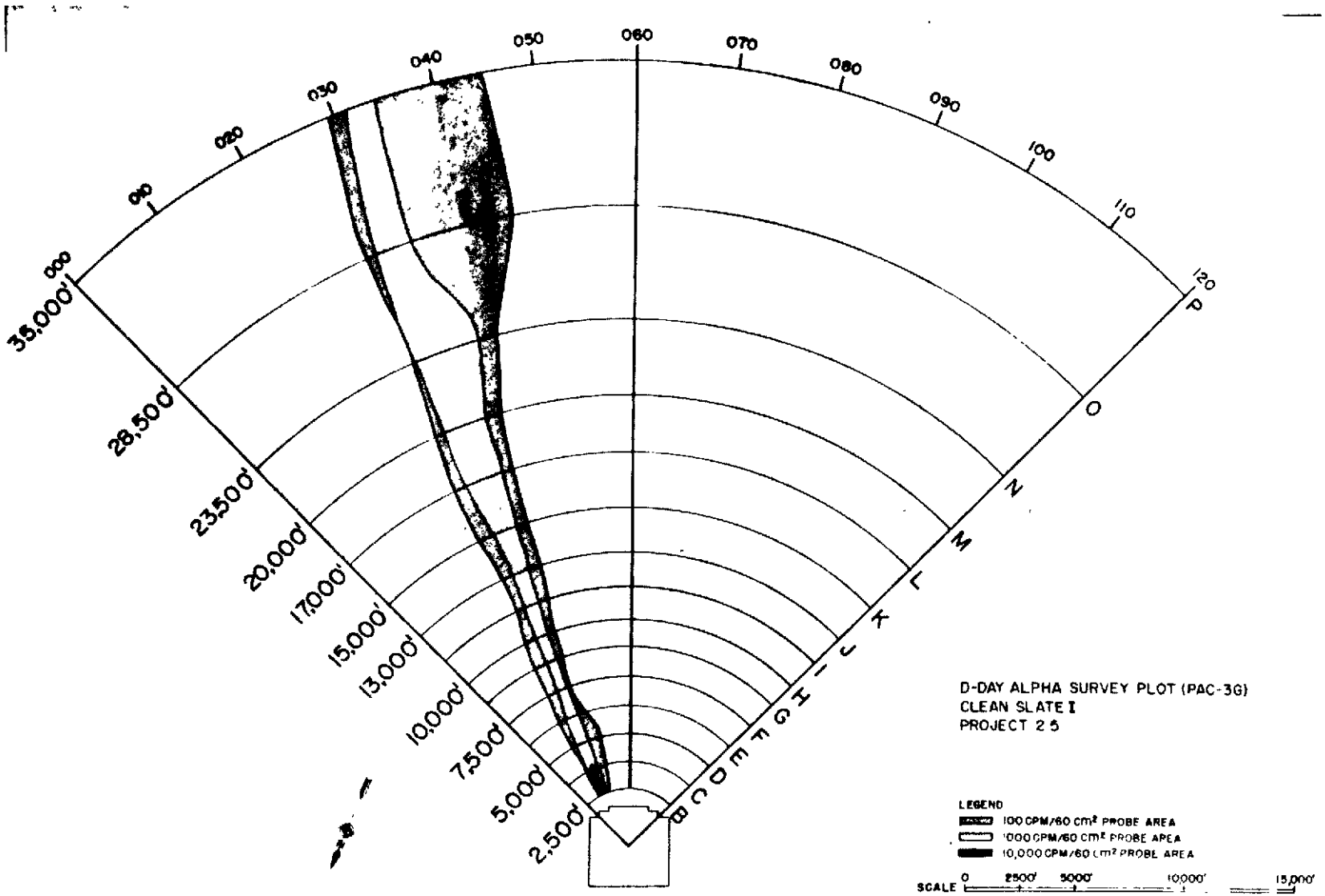


Figure 4.3 Filter disc survey comparison, CS I, alpha survey.

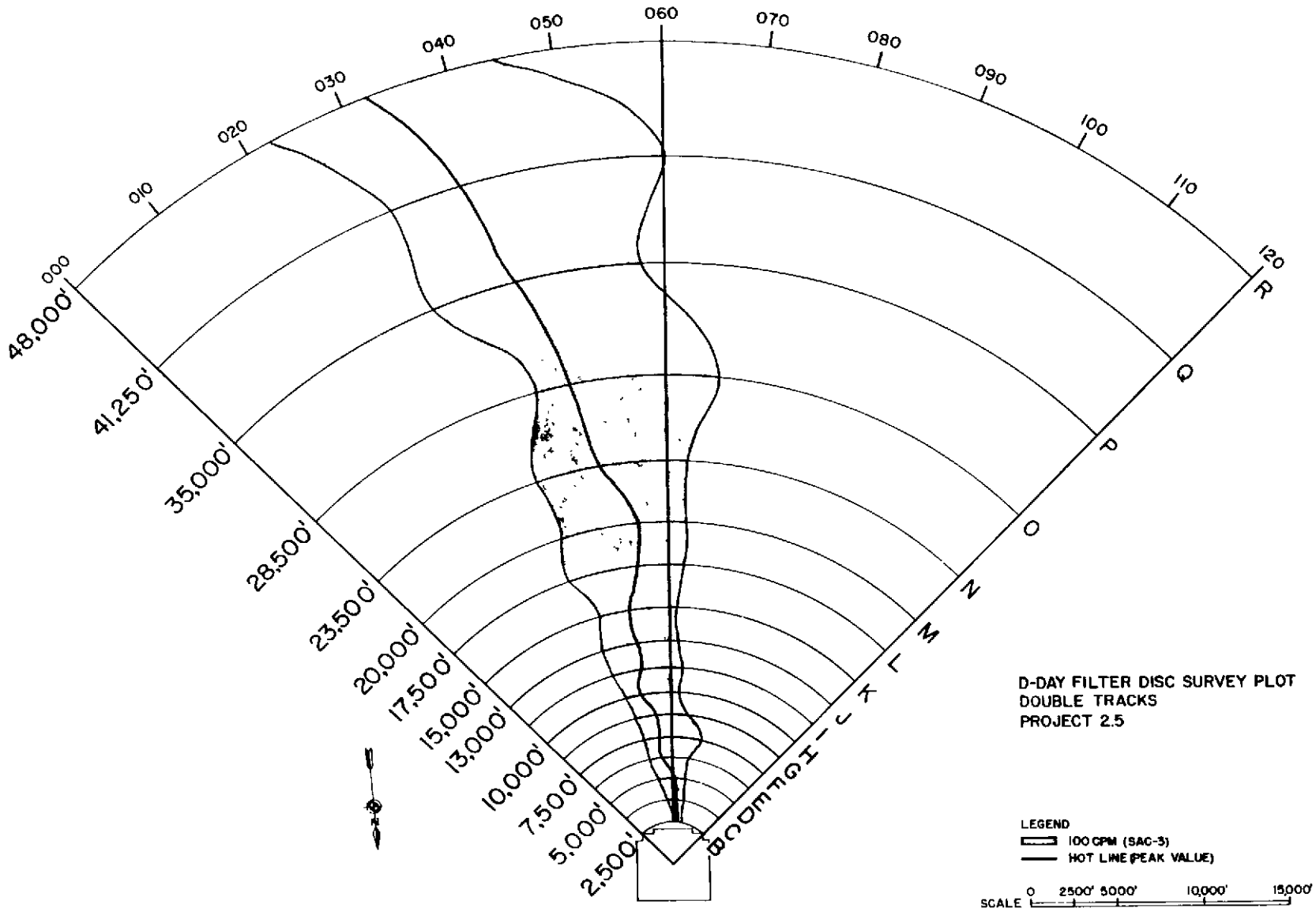


Figure 4.4 Filter disc survey plot, Double Tracks.

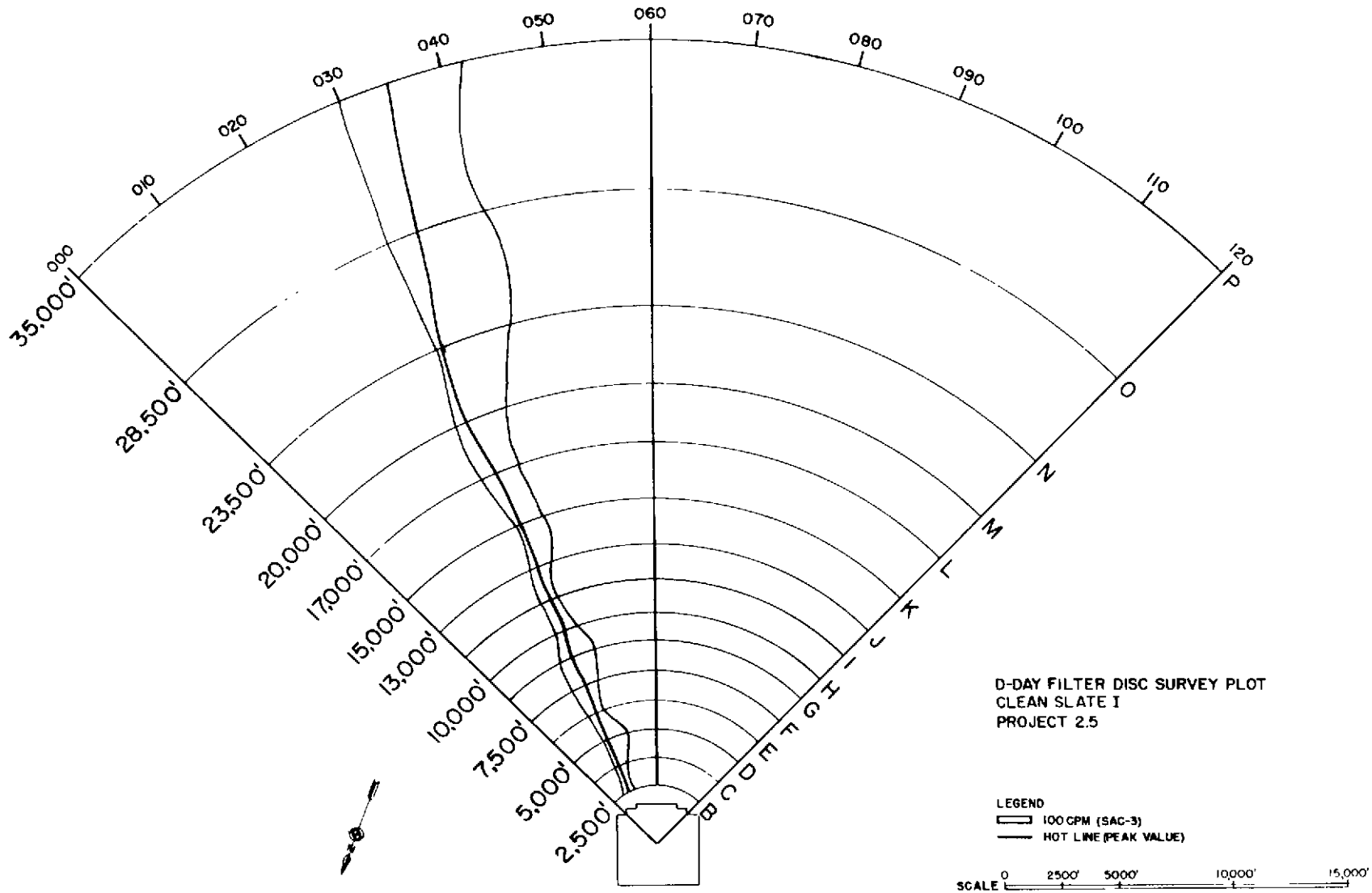


Figure 4.5 Filter disc survey plot, CS I.

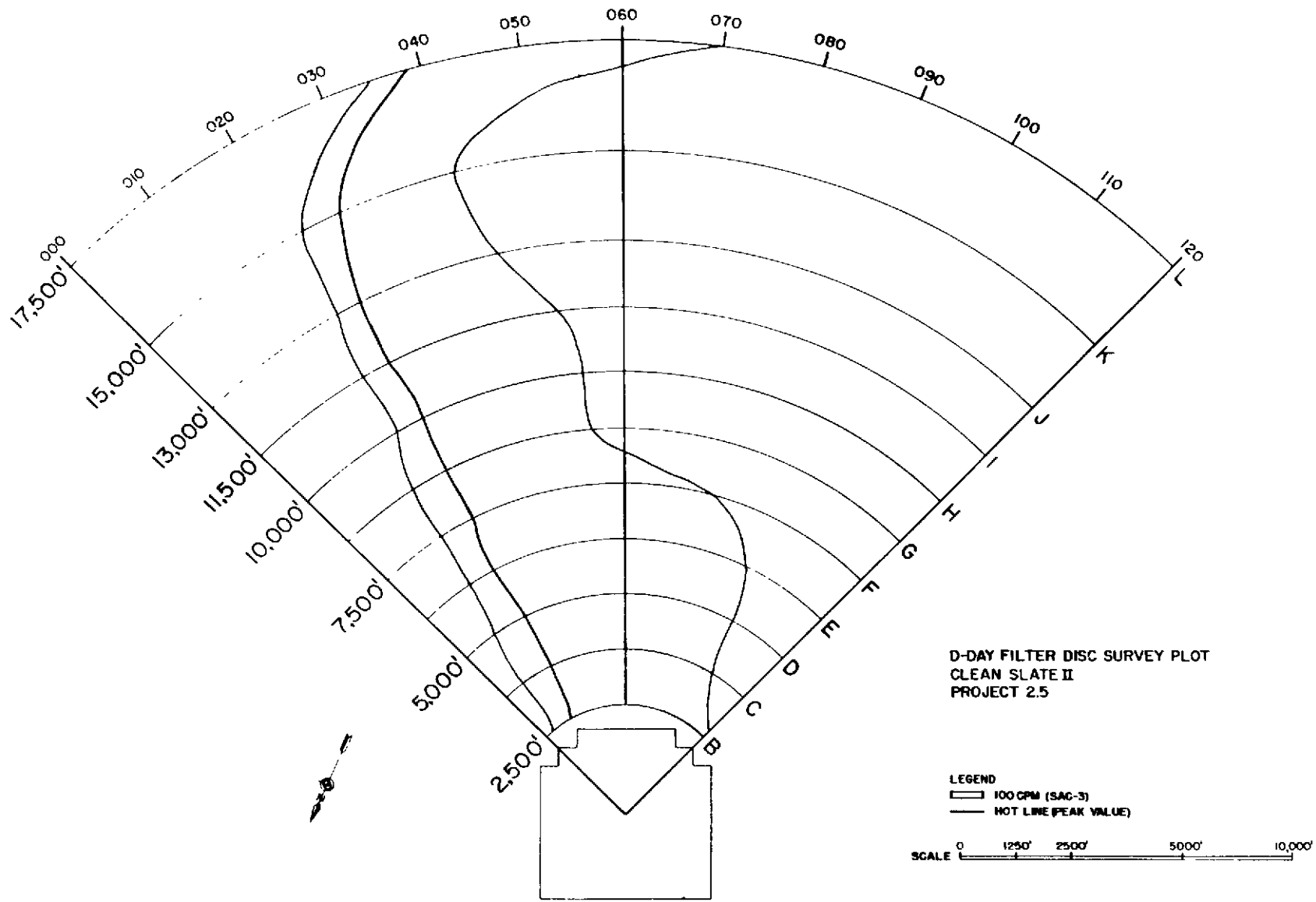


Figure 4.6 Filter disc survey plot, CS II.

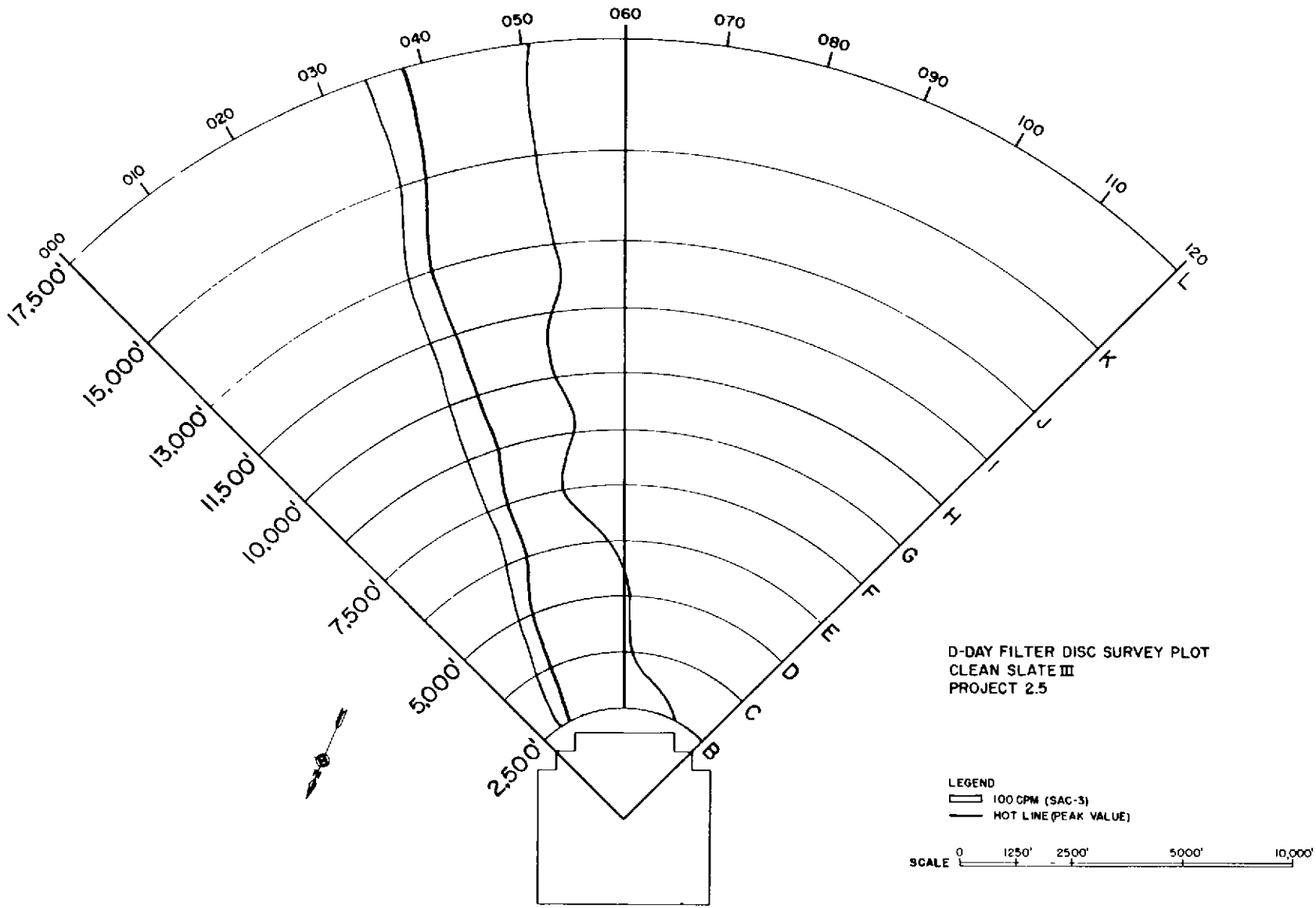


Figure 4.7 Filter disc survey plot, CS III.

CHAPTER 5

CORRELATION, ACCOUNTABILITY, AND DISCUSSION

In a discussion of correlation and accountability of the distribution of the plutonium dispersed in Operation Roller Coaster, one must first appreciate the interrelationship of Projects 2.1, 2.3, and 2.5. The prime objective of Project 2.1 was to determine the amount of plutonium associated with the dirt and debris resulting from igloo destruction near ground zero and was primarily concerned with Clean Slate II and Clean Slate III, although this project supported Project 2.5 in Double Tracks and Clean Slate I. Project 2.3 was to collect soil and fallout samples at specific locations for radiochemical determination of plutonium and uranium concentrations for correlation to 2.5 PAC-3G surveys. Finally, the prime objective of Project 2.5 was to survey the entire grid array downwind with portable alpha counters (PAC-3G) to allow computation of the total amount of plutonium deposited on the grid of each event. A secondary objective of Project 2.5 was to determine the feasibility of a vehicle-mounted gamma scanner as a tool for nuclear accident evaluation. It was decided that the prime objective (alpha survey) of Project 2.5 would be carried out from the

2,500-foot arc (Arc B) to the downwind extent of the array of each event, and that other surveys (near GZ) would be secondary. Thus it can be seen that Project 2.1 and Project 2.5 overlapped in the GZ areas, and both were vitally dependent on Project 2.3 for absolute correlation factors.

Unanticipated events and difficulties further complicated this interrelationship. The massive contamination of the steel plate beneath the DT unit was not anticipated, and yet early estimates indicated that a significant portion of total plutonium was trapped thereon, and that this amount was important to total accountability. To a lesser but real extent, metal igloo debris was contaminated also in the

Clean Slate II and Clean Slate III events. The amount of plutonium again became significant, and steps were taken to re-evaluate both the DT plate and the CS igloo debris. This work is still in progress and is called Roller Coaster Follow-On. Upon completion of radiochemistry, a separate report on the findings and data will be available. These data could change the total accountability by as much as 10 percent.

In regard to soil samples, it was found to be extremely difficult, if not impossible to provide correlative radiochemistry for PAC-3G readings. First, it was found that dry aliquots of samples to make a reasonable size for labora-

tory analysis produced data which was very erratic. Secondly, complete solution of larger soil samples (200 grams) was difficult and time consuming, and yet a 200-gram sample was not truly a representative aliquot. In view of these and many other variables, accountability and correlation results given in this report must be viewed with caution. Because work is still going on to provide a better knowledge of accountability and correlation, all raw data collected by Project 2.5 is tabulated for use in future correlations.

Correlation of instrumentation readings was necessary in order that final accountability be as accurate as possible. This was particularly important for close-in areas where the contamination levels were so high as to cause alpha survey equipment to read off scale. These areas, while not large, still could contain a significant fraction of the plutonium released. During each event, placement of 36 pad clusters was made in hopes that they would be sufficiently contaminated for equipment correlation, which could then be related to actual surface amounts of plutonium by radiochemistry. However, estimates of wind direction and levels of deposition were not always sufficiently accurate; so, at times, specific points were missed. Data was collected at arc locations and other

points and tabulated for future reference and correlation as shown in Tables 3.1 and 3.2.

In the following discussion, abbreviations will be used as indicated: VMGS, vehicle-mounted gamma scanner; PG-1, plutonium gamma probe.

On the Double Tracks event, little correlative data was available due to the low levels and great spread of the contamination. Alpha survey readings which varied on various parts of individual pads by as much as a factor of two to three were a common occurrence.

On CS I, the uniformity of alpha survey measurements on the same pad was better; variations of a factor of two to three were observed, but they were the exceptions. Correlative measurements on the concrete GZ pad of CS I indicated a VMGS to PG-1 ratio of 4:1. Comparison of peak values obtained on each arc at the same location by the PAC-3G and the VMGS gave an average ratio of 15:1 with individual arc averages varying from 10:1 to 25:1. These figures reduced to mean ratios are:

PAC-3G:VMGS - 15:1;
PAC-3G:PG-1 - 60:1.

On CS II, the uniformity of alpha survey measurements was still better. Correlative measurements were also better for alpha and gamma survey. The 36 pad cluster at CP-05 was heavily contaminated and resulted in the

following readings:

PAC-3G	80,000 cpm (average)
VMGS	4,000 cpm (net)

These figures reduced to ratios are:

PAC-3G:VMGS - 20:1,
PAC-3G:PG-1 - 53:1.

The ratio of the peak alpha survey measurements to VMGS peaks varied from 7.5 to 40 over the arcs and averaged 23:1. PAC-3G:PG-1 measurements could be made only on arc B where the ratio was 67:1.

On CS III, measurements and procedures were very similar to CS II. Correlative measurements made on the 36 concrete pads at Stations CP05 and CP06 with a PAC-3G averaged 80,000 cpm and 12,500 cpm respectively. PAC-3G: VMGS ratios were 14:1 and 20:1, respectively. The PAC-3G: PG-1 ratio for Station CP05 was 53:1. Comparison of peak PAC-3G and VMGS levels on each arc of CS III indicated an average ratio of 20:1 with a spread from 10:1 to 30:1 for individual arcs.

Averaging all of the correlative measurements, it is believed that the following ratios are as accurate as can be obtained under the circumstances of Operation Roller Coaster:

PAC-3G:VMGS - 20:1;
PAC-3G:PG-1 - 60:1.

Total accountability figures for the dispersed plutonium from each event must await the final determination of the accepted correlation factor and, therefore, cannot be realistically estimated in this report. Additionally, work is still in progress to further evaluate the total scavenging effect of the DT steel Plate and CS igloo debris. Too, the interrelationship of many projects must be considered. When the final correlation factor for alpha survey is available, then cpm readings in this report may be changed to micrograms of plutonium, and the total plutonium spread over each grid array may be calculated. This, added to the close-in amounts determined by Project 2.1 through mining and other techniques, the Follow-On work, and the amounts trapped in air sampling instrumentation and on animal specimens, should give a more confident estimate of accountability.

A point worthy of further discussion was vividly illustrated on the CS II event. The high density spacing of concrete pads for alpha monitoring on the close-in grid array did not define the true hot line accurately. A traverse with the vehicle-mounted gamma scanner showed that at close-in distances to ground zero (less than 2,000 feet) the true hot line followed a tortuous path and fell between alpha monitoring pads. This hot

line was later verified by intermediate station alpha monitoring. Figure 5.1 is a graphical representation of this occurrence. It is pointed out that pad spacing was 50, 100, and 250 feet on the grid array, and yet only a single alpha monitoring station was actually intersected by the true hot line. Similar observations were made on other events.

The effect of weathering on alpha survey data has already been mentioned and illustrated. A similar effect was noted on gamma scan traverse, although the degradation was not so great, because of the greater penetration ability of the Pu^{239}, X-rays, and Am^{241} gammas. This would be particularly important in an accident situation wherein monitoring could not be accomplished immediately. Over a period of seven days, it is estimated that the gamma scan technique would be degraded by a factor of from 2 to 3 by average weathering, whereas alpha survey monitoring would be degraded by a factor of 6 to 10 or greater in similar conditions. The alpha survey degradation was calculated on the basis of concrete pad monitoring, and it is believed that the degradation occurring on actual soil surfaces would increase by another factor of 2 or 3.

Observing the close-in alpha survey plot (Figure 2.31 for the CS III event, as well as the gamma scan plot (Figure 3.13) for CS III, and comparing these to their counterpart diagrams for CS II (Figures 2.30 and 3.12), one is

led to believe that the igloo with 8-foot earth cover confined the explosive products for a somewhat longer period of time and produced a squirting effect through the door of CS III. This effect was restricted to about 600 feet from ground zero, where prevailing wind conditions dictated direction of downwind travel.

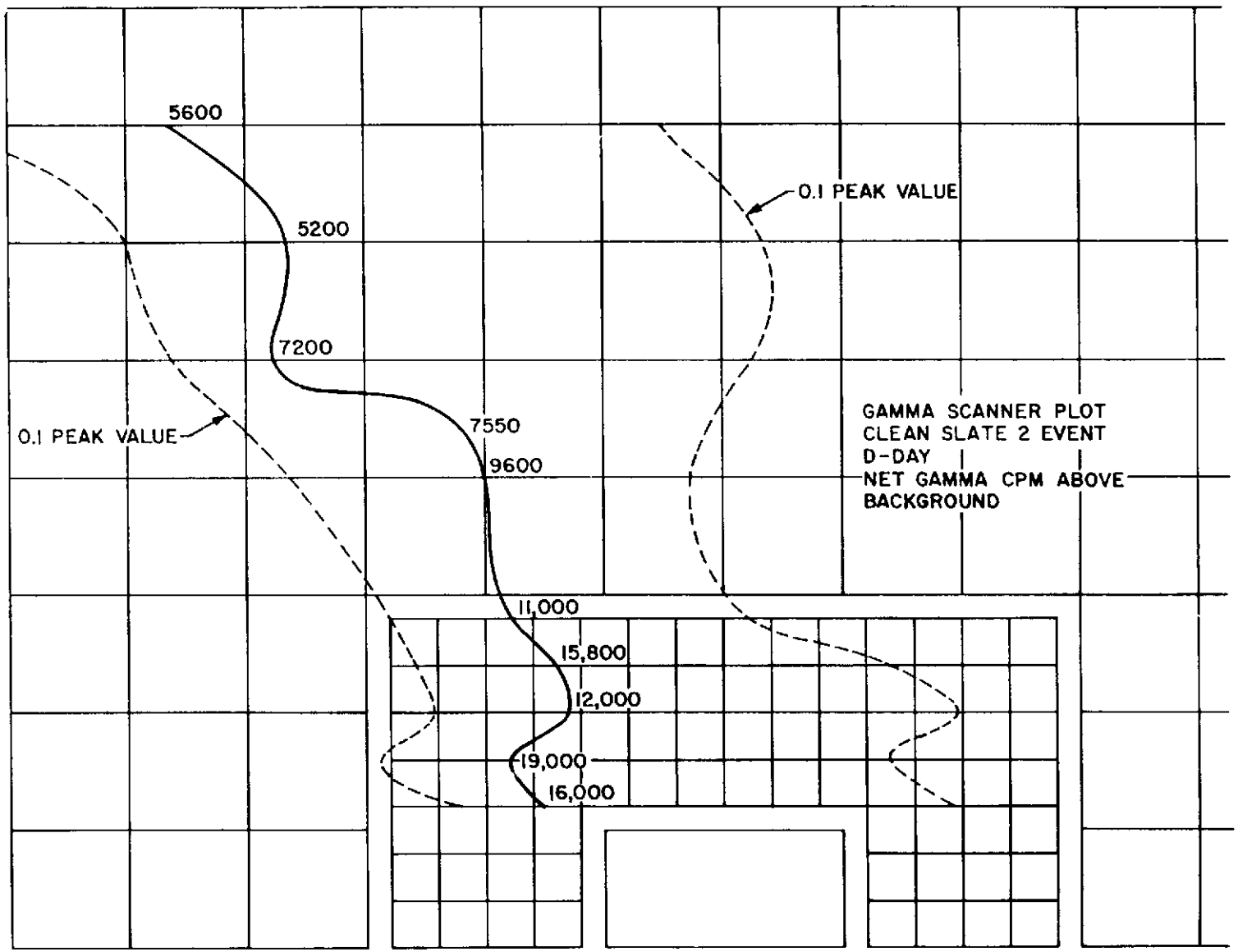


Figure 5.1 Illustration of gamma scan hot line accuracy.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

Considering all four events of Operation Roller Coaster, the following comments and recommendations are made:

1. Alpha surveys on brushed concrete surfaces, with portable instrumentation, proved to be a reliable method for obtaining a preliminary assessment of contamination levels. This fact coupled with the results of the filter disc technique indicates that flat, smooth surfaces should be utilized whenever possible to provide more reliable data.
2. The feasibility of using vehicle-mounted, low-energy gamma detection techniques was demonstrated. Considering the comfort and safety of field personnel and speed and thoroughness of data collection, this method is superior to alpha monitoring where rapid delineation of contamination patterns over large land areas is desirable.
3. There are other situations associated with weapon accidents where gamma detection might be the only means available. (This could occur in inclement weather, heavy vegetation, and forested areas.)

The Am^{241} contribution to the total gamma spectrum of weapon grade Pu^{239} can be utilized reliably in these circumstances.

4. Correlative alpha-to-gamma factors for freshly deposited weapon grade Pu^{239} appear to be:
   a. PAC-3G: vehicle gamma scanner about 20:1.
   b. PAC-3G: PG-1 gamma probe about 60:1.
5. Deposition levels from bunker or covered storage type detonations were about three times higher in the first 10,000 feet downwind than on open shots. Beyond this distance they were about the same under the conditions which obtained during this operation; this observation needs to be normalized to the specific meteorology which prevailed in the individual cases.
6. The U.S. Army mask, protective, field, M-17, was used exclusively by Project 2.5 personnel in contaminated areas. In terms of comfort, speech transmission, and respiratory protection characteristics, this mask is recommended over other models available for similar operations.
7. On the assumption of 200 cpm alpha per PAC-3G probe equivalent to 1 $\mu g/m^2$ Pu (which is reasonable pending refinements of Roller Coaster data), then 200,000 cpm alpha per PAC-3G probe

represents 1,000 $\mu g/m^2$ Pu. The area of contamination of 200,000 cpm extends less than 2,500 feet downwind and very close to the actual GZ point in other directions under the conditions of Roller Coaster detonations.

8. The unit $\mu g/m^2$ based on alpha measurements only, can be misleading in several situations. First, spotty contamination patterns are difficult to assess with the relatively small (60 to 100 cm^2) probe areas of portable radiacs. Roller Coaster demonstrated that much information, especially peak values, could be missed even at high density of monitoring stations. This effect was prominent in close (<2,500 feet) and of less importance further downwind. Low energy gamma techniques offer a means of overcoming these deficiences by permitting continuous monitoring of large areas with either portable or vehicle-mounted equipment. At the same time, the area represented by a given reading more closely approximates that of a square meter. It is highly desirable that Roller Coaster analyses supply reasonable correlation of gamma levels with alpha levels as a tool for field use. This will permit assignment of real meaning to $\mu g/m^2$

values which is missing if only alpha contamination is measured.

9. It appears that the area of immediate concern from an accident similar to the conditions which prevailed during the Roller Coaster events would be close-in to the point of detonation, and thus a gamma scan technique for plutonium contamination would be adequate for preliminary evaluations.

APPENDIX A

SUMMARY OF RAW DATA (ALPHA SURVEY)

This is a compilation of the raw PAC-3G data taken from all four events of Operation Roller Coaster. Three readings were taken on each 12-inch by 12-inch concrete pad and the mean reading gained arithmetically. Originally, it was intended that the mean reading would be transposed so as to be expressed in micrograms per square meter, but the many difficulties encountered in soil sampling, aliquoting, and chemistry have precluded the establishment of a valid conversion factor.

The data forms for each event are arranged so that readings run from the grid arrays (A, B, and C) near ground zero sequentially to the outermost arc, as well as chronologically, where duplicate readings were taken after D-day. These data forms do not include the very close-in (DT plate) data, nor specialized measurements made for particular studies. Although they are really a part of Project 2.1, they are included as a matter of convenience in the main body of the POR.

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION "A" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
AA01-AA11	(Less than 100 cpm)			
AB01-AB09	(Less than 100 cpm)			
AB10	400	400	150	320
AB11	(Less than 100 cpm)			
AC01-AC04	(Less than 100 cpm)			
AC05	300	300	250	280
AC06	(Less than 100 cpm)			
AC07	600	350	400	450
AC08-AC11	(Less than 100 cpm)			
AD01-AD02	(Less than 100 cpm)			
AD03	100	100	100	100
AD04 & AD05	(Less than 100 cpm)			
AD06	150	300	800	420
AD07	No card			
AD08	150	100	100	120
AD09	100	100	125	110
AD10 & AD11	(Less than 100 cpm)			
AE01-AE03	(Less than 100 cpm)			
AE04	200	300	250	250
AE05	300	300	300	300
AE06	800	900	3,500	1,700
AE07	4,750	1,000	1,250	2,300
AE08	100	350	250	230
AE09	100	300	250	220
AE10 & AE11	(Less than 100 cpm)			
AF01-AF03	(Less than 100 cpm)			
AF04	2,000	2,000	2,000	2,000
AF05	Pegged with X20 shield			
AF06	G4			
AF07	130,000	10,000	10,000	50,000
AF08	150	150	200	170
AF09	(Less than 100 cpm)			
AF10	275	200	150	210
AF11	(Less than 100 cpm)			
AG01 & AG02	(Less than 100 cpm)			
AG03	100	100	100	100
AG04	1,000	1,500	5,000	2,500
AG05	800,000	700,000	700,000	733,300
AG06	700,000	[illegible]	1,000,000	833,300
AG07	60,000	50,000	97,000	69,200
AG08	250	225	300	250
AG09	(Less than 100 cpm)			
AG10	450	250	250	320
AG11	150	500	450	370

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION "A" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
AH01-AH03	(Less than 100 cpm)			
AH04	100	100	100	100
AH05	5,000	7,500	3,000	5,200
AH06	100,000	100,000	100,000	100,000
AH07	5,000	50,000	25,000	33,300
AH08	80,000	42,500	15,000	45,800
AH09	150	150	100	130
AH10 & AH11	(Less than 100 cpm)			
AI01	(Less than 100 cpm)			
AI02	150	100	100	120
AI03	100	100	100	100
AI04	250	250	300	270
AI05	1,500	1,500	1,000	1,300
AI06	85,000	75,000	70,000	76,700
AI07	85,000	75,000	75,000	78,300
AI08	500	1,000	750	750
AI09	150	150	900	400
AI10	100	100	150	120
AI11	(Less than 100 cpm)			
AJ01 & AJ02	(Less than 100 cpm)			
AJ03	100	100	100	100
AJ04	100	100	150	120
AJ05	300	300	300	300
AJ06	5,000	3,000	3,000	3,700
AJ07	32,500	35,000	35,000	34,200
AJ08	150	150	250	180
AJ09	75	150	150	130
AJ10	100	100	100	100
AJ11	(Less than 100 cpm)			
AK01 & AK02	(Less than 100 cpm)			
AK03	100	100	100	100
AK04 & AK05	(Less than 100 cpm)			
AK06	200	200	300	230
AK07	90,000	90,000	80,000	86,700
AK08	750	550	450	580
AK09	3,500	1,250	1,250	2,000
AK10	200	250	225	225
AK11	250	225	300	260

EVENT: DOUBLE TRACKS **DATE** 15 MAY 1963 **D-DAY**

LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BA01-BA07	(Less than 100 cpm)			
BA08	500	500	500	500
BA09	100	100	100	100
BA10-BA11	(Less than 100 cpm)			
BB01-BB15	(Less than 100 cpm)			
BC01-BC15	(Less than 100 cpm)			
BD01-BD15	(Less than 100 cpm)			
BE01-BE15	(Less than 100 cpm)			
BF01-BF05	(Less than 100 cpm)			
BF11-BF15	(Less than 100 cpm)			
BG01-BG05	(Less than 100 cpm)			
BG11-BG15	(Less than 100 cpm)			
BH01-BH05	(Less than 100 cpm)			
BH11	100	100	100	100
BH12	100	100	100	100
BH13-BH15	(Less than 100 cpm)			
BI01-BI05	(Less than 100 cpm)			
BI11-BI15	(Less than 100 cpm)			
BJ01-BJ04	(Less than 100 cpm)			
BJ05	100	100	250	150
BJ11-BJ15	(Less than 100 cpm)			
BK01-BK05	(Less than 100 cpm)			
BK06	100	100	150	120
BK07	200	400	250	280
BK08	250	350	400	330
BK09	3,250	32,500	8,000	14,600
BK10-BK15	(Less than 100 cpm)			
BL01-BL06	(Less than 100 cpm)			
BL07	100	150	100	120
BL08	200	200	200	200
BL09	2,000	12,500	20,000	11,500
BL10-BL15	(Less than 100 cpm)			
BM01-BM06	(Less than 100 cpm)			
BM07	150	100	50	100
BM08	150	300	100	180
BM09	37,500	45,000	20,000	34,200
BM10-BM15	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BN01-BN08	(Less than 100 cpm)			
BN09	2,500	3,000	1,500	2,300
BN10-BN15	(Less than 100 cpm)			
B001-B003	(Less than 100 cpm)			
B004	2,000	100	50	720
B005	(Less than 100 cpm)			
B006	50	150	150	120
B007 & B008	(Less than 100 cpm)			
B009	50,000	70,000	55,000	58,300
B010-B015	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
CI01-CI05	(Less than 100 cpm)			
CI13-CI17	(Less than 100 cpm)			
CJ01-CJ05	(Less than 100 cpm)			
CJ13-CJ17	(Less than 100 cpm)			
CK01-CK05	(Less than 100 cpm)			
CK13-CK17	(Less than 100 cpm)			
CL01-CL05	(Less than 100 cpm)			
CL13-CL17	(Less than 100 cpm)			
CM01-CM17	(Less than 100 cpm)			
CN01-CN09	(Less than 100 cpm)			
CN10	2,000	2,000	3,000	2,300
CN11-CN17	(Less than 100 cpm)			
CO01-CO09	(Less than 100 cpm)			
CO10	3,500	5,000	3,500	4,000
CO11-CO17	(Less than 100 cpm)			
CP03-CP09	(Less than 100 cpm)			
CP10	20,000	30,000	15,000	21,700
CP11-CP15	(Less than 100 cpm)			
CQ05-CQ08	(Less than 100 cpm)			
CQ09	500	3,000	2,500	2,000
CQ10	10,000	10,000	15,000	11,700
CQ11-CQ13	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 18 MAY 1963 D+3 DAY

LOCATION "A" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
AG04	5,000	2,500	2,500	3,300
AG05	25,000	25,000	25,500	25,000
AH04	800	750	950	800
AH05	3,000	4,500	5,000	4,100
AI03	800	650	500	650
AI04	---	1,500	---	500
AI05	---	2,000	---	700
AI06	90,000	80,000	75,000	81,700
AI07	85,000	80,000	55,000	73,000
AI08	950	1,250	3,000	1,400
AI09	300	500	750	520
AJ02	350	400	300	350
AJ03	---	2,000	---	700
AJ04	---	450	---	150
AJ05	---	800	---	270
AJ06	7,000	6,000	5,500	6,200
AJ07	25,000	25,000	25,700	25,000
AJ08	100	200	225	180
AJ09	50	300	100	150
AJ10	(Less than 100 cpm)			
AK01	300	550	250	370
AK02	450	450	350	420
AK03	500	450	300	420
AK04	150	250	250	220
AK05	---	900	---	300
AK06	3,000	3,250	4,500	3,580
AK07	82,500	85,000	100,000	89,200
AK08	400	125	100	208
AK09	1,000	8,500	200	3,230
AK10	1,750	---	25	590
AK11	75	50	175	130

EVENT: DOUBLE TRACKS DATE 18 MAY 1963 D+3 DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BA02-BA15	(Less than 100 cpm)			
BB02 & BB03	(Less than 100 cpm)			
BB13-BB15	(Less than 100 cpm)			
BK05	(Less than 100 cpm)			
BK06	150	200	200	180
BK07	300	350	300	320
BK08	700	700	850	750
BK09	3,000	7,500	1,500	4,000
BK10	100	150	200	150
BK11	(Less than 100 cpm)			
BL04	(Less than 100 cpm)			
BL08	(Less than 100 cpm)			
BL09	5,000	15,000	9,000	10,000
BL10-BL12	(Less than 100 cpm)			
BM03	(Less than 100 cpm)			
BM05	(Less than 100 cpm)			
BM06	150	100	50	100
BM07 & BM08	(Less than 100 cpm)			
BM09	---	50,000	---	16,670
BM10-BM13	(Less than 100 cpm)			
BN03-BN05	(Less than 100 cpm)			
BN06	75	200	75	120
BN07 & BN08	(Less than 100 cpm)			
BN09	---	100,000	---	33,333
BN10	---	500	---	170
BN11-BN14	(Less than 100 cpm)			
BO01-BO08	(Less than 100 cpm)			
BO09	65,000	---	---	21,700
BO10	(Less than 100 cpm)			
BO11	125	100	100	100
BO12	(Less than 100 cpm)			
BO13	100	125	100	100
BO14	(Less than 100 cpm)			
BO15	250	100	50	133

EVENT: DOUBLE TRACKS DATE 18 May 1963 D+3 DAY

LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
CM10	250	250	250	250
CM11 & CM12	(Less than 100 cpm)			
CN07 & CN08	(Less than 100 cpm)			
CN10	3,000	3,500	4,000	3,500
CO07	(Less than 100 cpm)			
CO09	7,000	7,000	1,000	5,000
CO10	5,000	6,000	5,000	5,300
CO12 & CO13	(Less than 100 cpm)			
CP09	(Less than 100 cpm)			
CP10	20,000	45,000	30,000	31,700
CQ09	2,000	3,500	1,000	2,170
CQ10	20,000	20,000	15,000	18,300
CQ11	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 24 MAY 1963 D+9 DAY

LOCATION "A" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
AA01	50	---	---	20
AA03	50	---	---	20
AA05	50	---	---	20
AA07	75	---	---	25
AA09	300	50	50	160
AA11	---	---	---	---
AC02	225	25	50	150
AC04	1,250	500	500	700
AC06	1,500	1,500	1,250	1,400
AC08	75	---	---	25
AC10	---	---	---	---
AE01	75	---	---	25
AE03	125	150	25	150
AE05	2,000	2,000	1,500	1,800
AE07	1,000	500	850	850
AE09	150	50	100	150
AE11	75	---	---	25
AG02	150	50	100	80
AG04	300	400	250	300
AG06	75,000	95,000	90,000	80,000
AG08	100	200	100	130
AG10	50	50	100	50
AI01	150	200	100	160
AI03	100	250	150	200
AI05	200	250	150	200
AI07	15,000	5,000	10,000	6,000
AI09	---	---	700	230
AI11	100	200	---	150
AK01	50	75	100	60
AK03	100	225	75	160
AK05	200	100	250	170
AK07	20,000	20,000	9,500	10,000
AK09	250	100	---	320
AK11	100	100	---	60

EVENT: DOUBLE TRACKS DATE 24 MAY 1963 D+9 DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BA02	50	50	50	50
BA04	---	---	---	---
BA08	150	50	100	60
BC01	---	---	50	20
BC03	50	---	---	20
BC05	50	50	50	50
BC07	50	50	50	50
BE02	50	25	---	25
BE04	50	50	50	50
BE06	100	100	50	80
BE08	150	100	150	130
BG03	50	50	50	50
BG05	50	50	50	50
BI02	25	50	25	30
BI04	50	50	25	40
BK01	50	25	50	40
BK03	50	25	25	30
BK05	50	50	50	50
BK07	150	125	50	110
BM02	25	25	---	20
BM06	50	---	25	25
B001	50	50	50	50
B003	75	25	25	40
B005	50	25	50	40
B007	50	50	50	50
B009	8,500	9,000	10,000	9,000
B011	50	50	50	50
B013	50	25	25	40
B015	25	100	100	70

EVENT: DOUBLE TRACKS DATE 24 MAY 1963 D+9 DAY

LOCATION "B" GRID ARRAY & "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BC09	75	75	150	100
BC11	50	25	50	40
BC13	---	---	---	---
BC15	---	---	---	---
BE10	---	---	---	---
BE12	---	50	---	20
BE14	50	50	50	50
BA10	---	---	---	---
BA12	---	---	---	---
BA14	10	10	25	15
BG11	50	50	50	50
BG13	50	50	50	50
BG15	50	50	50	50
BM10	25	75	25	40
BM12	25	25	25	25
CQ10	200	175	150	175
CP10	(Less than 100 cpm)			
CO10	100	200	100	130
CN10	950	600	500	750
CM10	50	50	50	50

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "B"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-050	(Less than 100 cpm)			
051	100	100	150	120
52	(Less than 100cpm)			
53	100	150	150	130
54, 55, 56	(Less than 100 cpm)			
57	200	100	200	170
58	300	300	250	280
59	750	900	900	850
60	1,000	1,000	700	900
61	2,000	2,000	1,000	1,700
62	3,000	4,000	2,000	3,000
63	10,000	10,000	10,000	10,000
64	15,000	15,000	15,000	15,000
65	7,000	5,500	4,000	5,500
66	7,000	9,000	7,000	7,700
67	7,000	10,000	7,000	8,000
68	5,000	5,500	5,000	5,200
69	10,000	10,000	10,000	10,000
70	10,000	10,000	10,000	10,000
71	5,500	7,000	6,500	6,300
72	3,500	4,000	3,500	3,700
73	1,500	2,000	2,000	1,800
74	1,000	2,000	2,000	1,700
75	150	100	100	120
76	100	100	150	120
077-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "C"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-043	(Less than 100 cpm)			
044	250	50	50	120
45	25	300	150	160
046 & 047	(Less than 100 cpm)			
48	50	750	100	300
49	100	500	50	220
50	150	300	300	250
51	500	450	100	350
52	50	50	200	100
53	600	2,500	2,500	1,900
54	6,500	6,000	7,500	6,700
55	20,000	5,000	2,500	9,200
56	4,500	2,500	4,500	3,800
57	2,500	5,000	2,500	3,300
58	2,500	5,000	4,500	4,000
59	4,000	6,000	6,500	5,500
60	2,500	8,000	6,000	5,500
61	5,500	2,500	2,000	3,300
62	4,000	4,500	2,500	3,700
63	6,500	3,500	7,500	5,800
64	4,000	6,000	6,500	5,500
65	3,000	4,000	4,500	3,800
66	4,000	6,000	6,000	5,300
67	2,500	3,500	4,000	3,300
68	5,000	3,500	4,500	4,300
69	4,500	4,500	4,500	4,500
70	5,000	3,500	3,500	4,000
71	2,000	2,500	1,500	2,000
72	500	1,500	1,000	1,000
73	350	300	350	330
74	150	100	100	120
075-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE15 MAY 1963 D-DAY

LOCATION ARC "D"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-039	(Less than 100 cpm)			
040	50	100	1,000	380
041 & 042	(Less than 100 cpm)			
43	900	500	400	600
44	----	850	900	580
45	1,000	50	50	370
46	2,500	2,000	500	1,700
47	950	850	250	680
48	3,500	2,000	2,000	2,500
49	3,500	2,000	6,000	3,800
50	4,000	3,500	2,000	3,200
51	6,000	10,000	3,500	6,500
52	9,000	5,000	20,000	11,300
53	10,000	10,000	7,500	9,200
54	7,000	6,000	5,500	6,200
55	4,500	7,000	9,000	6,800
56	5,500	8,000	6,500	6,700
57	5,000	4,500	1,000	3,500
58	4,500	3,000	7,000	4,800
59	2,000	3,500	2,000	2,500
60	3,000	2,500	5,500	3,700
61	4,500	3,000	3,000	3,500
62	3,500	5,000	1,500	3,300
63	2,500	4,500	3,000	3,300
64	4,500	6,500	4,500	5,200
65	3,000	4,500	4,000	3,800
66	3,000	4,000	4,000	3,700
67	5,500	7,500	6,000	6,300
68	6,500	6,500	6,000	6,300
69	4,000	2,500	4,000	3,500
70	1,000	1,500	2,000	1,500
71	1,500	600	600	900
72	250	200	250	230
073-120	(Less than 100cpm)			

EVENT: DOUBLE TRACKS **DATE** 15 MAY 1963 **D-DAY**

LOCATION ARC "E"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-039	(Less than 100 cpm)			
040	50	300	50	130
41	600	50	50	230
42	50	250	350	220
43	750	1,000	200	650
44	650	2,000	3,000	1,900
45	300	300	1,000	530
46	700	2,000	4,000	2,200
47	3,000	4,000	2,500	3,200
48	3,500	6,000	3,000	4,200
49	15,00	10,000	10,000	11,700
50	6,500	9,500	7,000	7,700
51	5,000	8,500	8,500	7,300
52	8,000	9,000	7,000	8,000
53	7,500	8,000	6,500	7,300
54	6,500	5,500	8,500	6,800
55	3,500	2,500	2,000	2,700
56	3,500	5,000	5,500	4,700
57	3,500	4,000	4,500	4,000
58	1,500	5,500	2,500	3,200
59	3,000	2,500	2,500	2,700
60	2,500	3,000	3,000	2,800
61	2,500	2,500	300	2,700
62	4,000	3,000	3,000	3,300
63	4,000	4,500	7,000	5,200
64	3,500	2,500	3,000	3,000
65	3,000	3,500	2,500	3,000
66	4,500	5,500	6,500	5,500
67	6,500	3,500	5,500	5,200
68	2,500	3,500	3,000	3,000
69	1,000	1,000	1,000	1,000
70	550	650	600	600
71	150	150	150	150
072-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "F"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-035	(Less than 100 cpm)			
036	50	50	250	120
37	(Less than 100 cpm)			
38	350	350	50	250
039 & 040	(Less than 100 cpm)			
41	800	100	650	520
42	1,500	500	600	870
43	3,000	1,500	3,000	2,500
44	1,000	1,000	100	700
45	2,000	7,000	500	3,200
46	8,500	7,000	750	5,400
47	5,000	4,500	4,000	4,500
48	8,000	4,500	400	4,300
49	6,000	8,500	7,000	7,200
50	6,500	9,500	5,500	7,200
51	4,000	5,500	850	3,500
52	15,000	10,000	5,000	10,000
53	5,000	3,5000	3,5000	4,000
54	6,000	5,500	6,000	5,800
55	4,500	3,500	4,000	4,000
56	5,500	3,000	3,000	3,800
57	4,500	1,500	4,000	3,300
58	3,500	4,500	5,000	4,300
59	1,500	4,000	2,500	2,700
60	1,000	1,500	2,000	1,500
61	1,500	2,000	1,000	1,500
62	4,000	1,500	2,000	2,500
63	3,000	3,500	2,000	2,800
64	4,500	5,000	4,500	4,700
65	3,000	3,500	3,000	3,200
66	4,000	2,500	4,500	3,700
67	3,000	3,000	2,000	2,700
68	1,500	1,000	1,000	1,200
69	200	200	200	200
70	200	150	150	170
071-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS **DATE** 15 MAY 1963 **D-DAY**

LOCATION ARC "G"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-031	(Less than 100 cpm)			
032	150	300	400	280
33	200	150	200	180
34	100	100	100	100
35	300	500	700	500
36	(Less than 100 cpm)			
37	100	150	400	220
38	(Less than 100 cpm)			
39	950	400	250	530
40	200	1,500	----	570
41	900	1,500	2,000	1,500
42	900	750	7,000	1,200
43	2,500	1,000	3,000	2,200
44	9,000	5,000	4,500	6,200
45	5,500	4,500	7,500	5,800
46	5,500	5,000	5,000	5,200
47	4,000	6,000	7,000	5,700
48	5,000	4,000	3,500	4,200
49	6,500	7,000	4,500	6,000
50	6,500	5,500	6,500	6,200
51	6,500	7,000	6,000	6,500
52	5,500	3,000	2,500	3,700
53	4,500	3,500	2,500	3,500
54	2,500	2,500	1,500	2,200
55	3,500	2,500	3,000	3,000
56	2,500	1,500	2,000	2,000
57	2,000	1,500	2,500	2,000
58	2,500	2,500	1,000	2,000
59	900	1,500	1,500	1,300
60	3,000	2,500	2,000	2,500
61	800	2,000	700	1,200
62	2,000	2,500	2,500	2,300
63	2,000	2,500	3,500	2,700
64	2,000	2,500	2,000	2,200
65	2,500	1,500	2,500	2,200
66	1,000	1,000	1,000	1,000
67	100	100	250	150
68	100	100	100	100
069-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "H"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-033	(Less than 100 cpm)			
034	1,500	100	150	580
35	750	400	750	630
36	100	450	400	320
37	750	250	200	400
38	450	150	800	470
39	500	500	3,000	1,300
40	500	500	500	500
41	2,000	2,000	2,500	2,200
42	2,000	4,000	3,500	3,200
43	2,500	2,500	4,000	3,000
44	4,500	2,000	7,500	4,700
45	5,000	4,500	9,500	6,300
46	4,000	4,000	9,500	5,800
47	6,000	4,000	4,500	4,800
48	4,500	5,500	5,000	5,000
49	4,000	4,500	5,500	4,700
50	7,500	7,500	7,000	7,300
51	4,500	6,500	6,000	5,700
52	3,500	3,500	5,000	4,000
53	6,000	4,500	3,000	4,500
54	2,500	2,500	5,000	3,300
55	3,000	2,000	3,500	2,800
56	1,000	1,000	2,500	1,500
57	2,000	1,000	1,500	1,500
58	1,500	1,500	2,000	1,700
59	1,500	1,500	1,000	1,300
60	1,500	1,500	2,000	1,700
61	1,500	1,500	2,000	1,700
62	1,000	1,000	1,000	1,000
63	750	750	800	770
64	250	250	200	230
65	250	250	250	250
66	250	250	250	250
67	100	100	100	100
68	100	100	100	100
69	100	100	100	100
70	100	100	100	100
071-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "I"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-001	(Less than 100 cpm)			
002	150	150	200	170
3	100	100	100	100
4	150	150	200	170
5	200	150	150	170
6	150	150	150	150
7	150	150	150	150
8	200	150	200	180
9	150	150	150	150
10	150	150	150	150
11	150	150	150	150
12	150	150	150	150
13	150	100	100	130
14	150	150	100	130
15	100	100	100	100
16	200	100	150	150
17	100	100	150	120
18	(Less than 100 cpm)			
19	100	150	150	120
20	(Less than 100 cpm)			
21	150	150	100	130
22	150	100	100	120
023-033	(Less than 100 cpm)			
34	300	2,000	300	870
35	450	450	950	620
36	200	1,000	500	570
37	1,500	600	500	870
38	650	650	650	650
39	300	750	250	430
40	500	1,500	1,500	1,200
41	2,000	2,500	2,000	2,200
42	2,500	6,000	2,000	3,500
43	5,500	5,500	4,000	5,000
44	2,000	5,000	5,000	4,000
45	3,500	5,000	2,500	3,700
46	4,500	4,500	3,000	4,000
47	5,000	3,500	7,000	5,200
48	4,000	5,500	4,500	4,700
49	4,500	6,000	5,000	5,200
50	10,000	10,000	10,000	10,000
51	9,000	8,500	4,500	7,300
52	6,500	4,500	5,000	5,300
53	2,000	3,500	3,000	2,800
54	1,500	2,000	1,500	1,700
55	1,500	1,500	1,500	1,500
56	1,000	1,000	1,000	1,000
57	1,000	1,500	1,000	1,200
58	1,000	1,000	1,000	1,000
59	1,500	1,000	2,000	1,500

Continued on next page

EVENT: DATE DAY

LOCATION ARC "I" CONTINUTED

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
060	1,500	1,500	1,500	1,500
61	1,500	1,500	1,500	1,500
62	2,000	1,000	1,000	1,300
63	1,500	1,000	1,000	1,200
64	1,000	1,000	1,000	1,000
65	300	300	200	270
66	100	100	100	
067-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "J"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-033	(Less than 100 cpm)			
034	50	1,000	150	400
35	350	1,500	1,500	1,100
36	2,000	500	1,000	1,200
37	550	1,500	1,500	1,200
38	750	750	750	750
39	450	250	800	500
40	1,500	1,500	2,000	1,700
41	1,500	1,500	550	1,200
42	2,000	2,000	1,000	1,700
43	4,500	4,500	4,000	4,300
44	7,000	7,000	3,000	5,700
45	4,000	7,000	4,000	5,000
46	5,000	4,000	5,000	4,700
47	4,500	3,500	5,00	4,300
48	2,500	2,500	2,000	2,300
49	2,000	4,000	2,500	2,800
50	4,000	4,000	4,000	4,000
51	4,500	3,500	3,500	3,800
52	4,500	4,500	2,500	3,800
53	5,500	4,000	4,000	4,500
54	3,500	4,000	4,500	4,000
55	3,000	2,500	2,500	2,700
56	2,000	1,500	2,000	1,800
57	1,000	1,500	2,000	1,800
58	1,500	2,000	1,500	1,700
59	500	1,000	1,000	830
60	1,500	1,000	1,500	1,300
61	1,000	1,000	1,500	1,200
62	500	1,000	500	670
63	750	750	600	700
64	300	350	550	400
65	450	500	500	480
66	250	300	200	250
067-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "K"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-032	(Less than 100 cpm)			
033	400	100	100	200
34	1,500	150	700	780
35	600	1,500	400	830
36	900	600	450	650
37	200	650	550	470
38	500	400	2,500	1,100
39	1,500	700	2,000	1,400
40	350	3,000	450	1,300
41	2,000	1,500	1,500	1,700
42	4,500	2,000	1,500	2,700
43	2,500	4,000	4,000	3,500
44	4,000	4,000	5,000	4,300
45	4,000	5,000	4,000	4,300
46	1,500	3,500	3,500	2,800
47	4,000	4,500	4,500	4,300
48	5,500	3,000	3,500	4,000
49	2,000	2,000	3,500	2,500
50	1,500	1,500	2,000	1,700
51	2,500	2,500	2,500	2,500
52	2,500	3,500	2,500	2,800
53	2,000	2,000	2,000	2,000
54	1,500	1,500	1,500	1,500
55	1,500	1,000	500	1,000
56	1,500	1,000	25,00	1,700
57	2,500	3,500	3,000	3,000
58	1,500	1,500	1,500	1,500
59	1,500	1,500	1,500	1,500
60	900	550	950	800
61	950	750	750	820
62	750	2,000	850	1,200
63	700	700	550	650
64	650	500	700	620
65	200	250	200	220
66	150	150	150	150
67	100	100	100	100
068-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "L"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-031	(Less than 100 cpm)			
032	100	150	300	180
33	100	100	200	130
34	100	250	350	230
35	1,000	1,500	350	950
36	100	250	200	180
37	100	100	100	100
38	450	900	750	700
39	450	550	1,000	670
40	450	700	700	620
41	2,000	2,500	2,000	2,200
42	1,000	3,000	2,000	2,000
43	1,000	2,500	1,000	1,500
44	800	2,500	900	1,400
45	1,000	1,000	2,500	1,500
46	1,000	1,500	2,000	1,500
47	850	2,000	2,000	1,600
48	3,000	4,000	3,500	3,500
49	1,000	2,000	1,500	1,500
50	3,000	4,000	4,000	3,700
51	3,000	1,500	1,500	1,800
52	2,500	1,500	1,500	1,800
53	2,000	3,000	4,000	3,000
54	3,000	2,500	3,500	3,000
55	3,000	2,500	2,000	2,500
56	2,500	2,000	2,500	2,300
57	2,500	2,500	1,500	2,200
58	1,500	1,000	2,000	1,500
59	1,000	1,000	1,000	1,000
60	1,000	1,500	2,000	1,500
61	2,000	1,000	1,000	1,300
62	300	1,500	450	750
63	400	450	450	430
64	650	600	500	580
65	200	250	500	320
66	300	600	250	380
67	200	200	250	220
68	150	50	100	100
69	75	250	100	140
070-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS **DATE** 15 MAY 1963 D- DAY

LOCATION ARC "M"

STATION NUMBER	PAC-3G READINGS (CPM) 1	2	3	MEAN READING
000-031	(Less than 100 cpm)			
032	----	----	400	130
33	350	350	2,000	900
34	2,500	500	1,500	1,500
35	500	1,000	1,500	1,000
36	700	1,500	2,000	1,400
37	300	250	200	250
38	200	500	850	520
39	1,000	500	500	670
40	850	950	900	900
41	750	1,500	500	920
42	500	550	750	600
43	1,000	1,000	500	830
44	1,000	2,500	2,500	2,000
45	1,000	1,500	1,500	1,300
46	1,000	1,000	500	830
47	1,000	1,500	1,500	1,300
48	500	3,000	2,000	1,800
49	2,000	1,500	2,500	2,000
50	1,000	2,500	2,500	2,000
51	3,000	2,000	1,500	2,200
52	750	2,000	1,000	1,300
53	1,500	1,500	3,500	2,200
54	3,000	1,500	3,000	2,500
55	1,000	1,000	1,000	1,000
56	900	900	650	820
57	800	1,500	2,500	1,600
58	2,500	1,000	500	1,300
59	1,000	1,000	1,000	1,000
60	500	500	500	500
61	750	1,500	500	920
62	850	750	750	780
63	1,000	1,000	1,000	1,000
64	500	500	500	500
65	750	750	800	770
66	200	500	700	470
67	1,000	750	600	780
68	100	200	200	170
69	(Less than 100 cpm)			
70	100	100	150	120
071-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS **DATE** 15 MAY 1963 **D-DAY**

LOCATION ARC "N"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-029	(Less than 100 cpm)			
030	250	100	100	150
31	450	150	150	250
32	350	700	650	570
33	1,500	1,000	2,000	1,500
34	600	550	400	520
35	600	550	600	580
36	600	550	500	550
37	150	700	700	520
38	400	900	2,500	1,300
39	300	2,500	500	1,100
40	550	900	1,500	980
41	1,500	3,500	2,000	2,300
42	2,500	2,500	1,500	2,200
43	1,500	1,500	2,000	1,700
44	1,500	1,500	2,000	1,700
45	2,500	2,500	1,500	2,200
46	2,000	3,500	2,500	2,700
47	1,500	1,500	1,000	1,300
48	1,000	2,000	1,500	1,500
49	1,500	1,500	3,000	2,000
50	700	650	800	720
51	2,000	3,000	3,000	2,700
52	1,500	1,500	1,500	1,500
53	1,500	2,500	2,500	2,200
54	700	850	1,500	1,000
55	1,500	2,000	750	1,400
56	150	450	750	450
57	1,500	1,500	1,500	1,500
58	250	100	650	330
59	1,500	1,500	2,000	1,700
60	800	800	850	820
61	750	900	500	720
62	550	450	800	600
63	800	550	600	650
64	350	300	400	350
65	400	400	550	450
66	450	350	250	350
67	400	100	150	220
068-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "O"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000 & 001	(Less than 100 cpm)			
002	100	100	100	100
003-030	(Less than 100 cpm)			
031	100	300	250	220
32	200	150	50	130
33	850	300	350	500
34	----	500	550	350
35	100	100	100	100
36	400	450	800	550
37	600	350	1,500	820
38	1,500	1,500	650	1,200
39	450	600	600	550
40	950	350	1,000	770
41	2,500	2,500	2,500	2,500
42	1,500	1,000	500	1,000
43	2,000	1,500	1,500	1,700
44	2,500	3,000	2,000	2,800
45	1,500	1,500	2,000	1,700
46	2,000	2,000	1,500	1,800
47	1,000	1,000	1,500	1,200
48	2,000	1,500	1,000	1,500
49	700	800	950	820
50	650	1,000	900	850
51	2,000	1,000	1,000	1,300
52	1,000	1,500	1,500	1,300
53	1,000	700	2,000	1,200
54	400	850	900	720
55	650	750	650	680
56	900	400	650	650
57	500	600	650	580
58	750	350	500	530
59	800	350	750	630
60	300	500	300	370
61	600	300	600	500
62	400	400	650	480
63	400	300	250	320
64	650	400	400	480
65	300	500	400	400
66	250	300	250	270
67	450	200	150	270
68	200	200	350	250
69	100	250	150	170
70	150	250	250	220
71	200	200	250	220
72	200	250	250	230
73	200	200	250	220
74	250	200	150	200
75	200	200	250	220
76	200	200	150	170
077-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "P"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-026	(Less than 100 cpm)			
027	100	450	150	230
28	150	100	250	170
29	50	150	100	100
30	(Less than 100 cpm)			
31	150	200	250	200
32	150	200	300	220
33	200	200	300	220
34	500	500	500	500
35	1,000	1,000	1,000	1,000
36	2,500	2,000	2,500	2,300
37	1,000	1,500	1,000	1,200
38	1,500	2,000	1,000	1,500
39	1,000	1,500	1,000	1,200
40	2,500	1,500	2,000	2,000
41	2,500	500	1,500	1,500
42	1,500	2,000	500	1,300
43	1,000	1,500	1,000	1,200
44	1,000	1,000	2,000	1,300
45	400	900	1,000	770
46	700	950	650	770
47	500	750	500	580
48	400	700	950	680
49	750	950	950	880
50	1,500	1,000	1,500	1,300
51	650	750	950	780
52	650	750	950	780
53	750	700	650	700
54	650	700	350	570
55	500	500	350	450
56	100	450	500	350
57	150	200	200	180
58	200	300	600	370
59	750	500	250	500
60	350	450	550	450
61	300	350	500	380
62	650	600	600	620
63	150	500	300	320
64	200	150	500	280
65	400	250	200	280
66	350	250	100	230
67	100	150	200	150
68	150	200	150	180
69	(Less than 100 cpm)			
70	100	200	50	100
071-073	(Less than 100 cpm)			
074	50	200	50	100
075-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "Q"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-022	(Less than 100 cpm)			
023	100	350	100	180
24	150	300	250	230
25	250	200	950	470
26	100	100	500	230
27	900	1,500	850	1,100
28	750	750	1,000	830
29	250	200	350	270
30	400	200	750	450
31	400	750	2,000	1,100
32	1,000	1,000	800	930
33	800	1,500	850	1,100
34	3,000	2,500	2,000	2,500
35	300	300	200	270
36	2,000	2,000	2,500	2,200
37	1,250	2,250	1,500	1,700
38	1,750	1,500	2,500	1,900
39	2,000	2,000	2,500	2,200
40	2,000	3,000	2,500	2,500
41	2,000	3,000	2,000	2,300
42	2,500	2,000	1,000	1,800
43	1,500	750	1,000	1,100
44	850	1,000	1,250	1,000
45	550	750	500	600
46	850	650	950	820
47	400	450	450	430
48	700	700	550	650
49	500	500	200	400
50	400	350	350	370
51	350	250	400	330
52	500	300	300	370
53	200	550	350	370
54	500	350	350	400
55	350	200	400	320
56	600	700	200	500
57	300	200	150	220
58	200	300	300	270
59	250	350	550	380
60	250	500	350	370
61	400	500	400	430
62	400	400	200	330
63	200	300	500	330
64	100	400	550	350
65	100	100	250	150
66	125	125	150	130
67	100	100	250	150
68	100	200	100	130

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EVENT: DATE DAY

LOCATION ARC "Q" CONTINUED

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
069	200	200	100	170
070 & 071	(Less than 100 cpm)			
72	----	150	----	150
73	----	250	----	250
74	----	150	----	150
075-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION ARC "R"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-005	(Less than 100 cpm)			
006	100	100	100	100
007-011	(Less than 100 cpm)			
012	100	100	100	100
013-015	(Less than 100 cpm)			
016	150	150	150	150
17	100	100	50	100
18	400	50	50	170
19	150	500	150	270
20	50	50	200	100
21	(Less than 100 cpm)			
22	150	450	100	230
23	350	750	350	480
24	650	200	600	480
25	100	100	150	120
26	350	450	350	380
27	700	750	750	730
28	550	550	1,900	1,000
29	500	500	2,500	1,200
30	1,500	1,500	2,500	1,800
31	250	700	550	500
32	700	700	800	780
33	400	400	400	400
34	450	450	750	550
35	400	200	500	370
36	1,000	1,500	1,000	1,200
37	1,000	1,000	500	830
38	1,500	350	350	730
39	1,500	600	900	1,000
40	700	650	900	750
41	600	1,000	850	820
42	600	600	950	720
43	350	600	600	520
44	900	800	600	770
45	300	300	600	400
46	500	500	500	500
47	550	250	500	430
48	250	250	400	300
49	300	250	400	320
50	250	100	300	220
51	200	250	250	230
52	150	150	150	150
53	200	100	100	130
54	150	150	200	170
55	(Less than 100 cpm)			
56	100	100	100	100
57	200	100	200	170
58	50	50	200	100
59	100	100	150	120

Continued on next page

EVENT: DATE DAY

LOCATION ARC "R" CONTINUED

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
060	150	100	100	120
61	(Less than 100 cpm)			
62	200	150	150	170
63	200	100	100	130
064-070	(Less than 100 cpm)			
071	100	100	100	100
072-088	(Less than 100 cpm)			
089	100	100	100	100
90	150	150	150	150
91	(Less than 100 cpm)			
92	100	100	100	100
093-120	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 18 MAY 1963 D+3 DAY

LOCATION ARC "B" THROUGH ARC "H"

STATION NUMBER	PAC-3G READINGS (CPM) 1	2	3	MEAN READING
ARC "B"				
030	(Less than 100 cpm)			
037	(Less than 100 cpm)			
042	(Less than 100 cpm)			
045	Missing			
051	350	150	100	167
056	150	300	350	267
060	450	650	150	433
065	8,500	5,500	4,000	6,000
070	8,000	12,500	6,000	8,833
ARC "D"				
030	No Rad			
035	No Rad			
040	(Less than 100 cpm)			
045	(Less than 100 cpm)			
050	4,000	4,500	3,000	3,830
055	6,000	7,000	6,500	6,500
060	3,000	3,500	4,000	3,500
065	2,000	2,500	3,000	2,500
070	550	750	2,500	1,267
ARC "F"				
030	(Less than 100 cpm)			
035	(Less then 100 cpm)			
040	(Less than 100 cpm)			
045	4,500	5,500	4,500	4,833
050	4,500	6,500	5,000	5,333
055	3,500	4,500	3,000	3,667
060	700	750	850	767
065	2,500	2,500	1,000	2,000
070	100	100	100	100
ARC "H"				
030	(Less than 100 cpm)			
035	150	200	350	250
040	1,500	1,500	2,000	1,650
045	5,000	3,500	9,500	6,000
050	3,500	5,000	5,000	4,500
055	2,000	2,500	1,500	2,000
060	1,000	2,500	1,000	1,500
065	250	250	300	260
070	100	100	150	120

EVENT: DOUBLE TRACKS DATE 18 MAY 1963 D+3 DAY

LOCATION ARC "J" THROUGH ARC "P"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
ARC "J"				
030	(Less than 100 cpm)			
035	100	100	100	100
040	750	850	750	783
045	4,000	350	3,500	2,617
050	3,000	1,500	3,000	2,617
055	2,500	2,000	2,500	2,333
060	800	800	800	800
065	150	150	150	150
070	(Less than 100 cpm)			
ARC "L"				
030	(Less than 100 cpm)			
035	750	1,000	1,500	1,080
040	150	150	400	233
045	600	550	100	420
050	2,500	3,000	5,000	3,500
055	1,000	1,000	1,000	1,000
060	300	500	1,500	767
065	250	350	500	367
070	(Less than 100 cpm)			
ARC "M"				
030	50	150	50	(Less than 100 cpm)
035	250	650	550	480
040	500	1,500	500	830
045	200	1,000	1,500	900
050	600	1,000	2,000	1,200
055	750	900	700	780
060	650	500	300	480
065	350	500	150	333
070	300	100	100	167
ARC "P"				
030	(Less than 100 cpm)			
035	350	350	150	280
040	350	400	650	470
045	200	250	350	267
050	50	100	150	100
055	(Less than 100 cpm)			
060	100	150	50	100
065	150	(Less than 100 cpm)		
070	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 18 MAY 1963 D+3 DAY

LOCATION ARC "R"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
030	3,000	2,000	1,500	2,170
035	350	200	450	333
040	800	550	450	600
045	150	150	300	200
050	200	100	100	133
055	100	150	200	150
060	200	250	150	200
065	150	150	150	150
070	75	150	250	160

EVENT: DOUBLE TRACKS DATE 24 MAY 1963 D+9 DAY

LOCATION ARC "B" - ARC "H"

STATION NUMBER	PAC-3G READINGS (CPM) 1	2	3	MEAN READING
B-020	(Less than 100 cpm)			
25		"	"	
30		"	"	
35		"	"	
40		"	"	
45		"	"	
50		"	"	
55		"	"	
60		"	"	
65	2,000	1,500	250	900
70	50	1,500	500	1,000
75	100	150	100	100
D-035	(Less than 100 cpm)			
40	(Less than 100 cpm)			
45	(Less than 100 cpm)			
50	300	300	250	290
55	850	950	800	860
60	250	200	450	300
65	350	200	800	450
70	150	300	250	230
75	(Less than 100 cpm)			
80	(Less than 100 cpm)			
F-035	(Less than 100 cpm)			
40	(Less than 100 cpm)			
45	200	500	500	400
50	100	400	150	220
55	100	100	300	160
60	(Less than 100 cpm)			
65	550	200	250	330
70	(Less than 100 cpm)			
75	(Less than 100 cpm)			
H-032	(Less than 100 cpm)			
35	(Less than 100 cpm)			
40	(Less than 100 cpm)			
45	150	950	150	400
51	50	600	600	420
55	300	400	250	320
60	200	100	150	150
65	(Less than 100 cpm)			
70	(Less than 100 cpm)			
75	(Less than 100 cpm)			
80	(Less than 100 cpm)			

EVENT: DOUBLE TRACKS DATE 24 MAY 1963 D+9 DAY

LOCATION ARC "J" - ARC "P"

STATION NUMBER	PAC-3G READINGS (CPM) 1	2	3	MEAN READING
J-025	(Less than 100 cpm)			
30		"	"	
35		"	"	
40		"	"	
45	200	650	400	450
50	(Less than 100 cpm)			
55	600	50	600	420
60	50	200	500	250
65	(Less than 100 cpm			
70		"	"	
75		"	"	
80		"	"	
85		"	"	
L-035	(Less than 100 cpm)			
40		"	"	
45		"	"	
50	100	150	400	220
55	(Less than 100 cpm)			
60	(Less than 100 cpm)			
65	100	100	100	100
70	(Less than 100 cpm)			
75	(Less than 100 cpm)			
N-030	(Less than 100 cpm)			
35	50	50	75	55
40	(Less than 100 cpm)			
45	100	100	300	160
50	(Less than 100 cpm)			
55	100	100	150	120
60	(Less than 100 cpm)			
65		"	"	
70		"	"	
P-030	(Less than 100 cpm)			
35		"	"	
40		"	"	
45		"	"	
50		"	"	
55		"	"	
60		"	"	
65		"	"	
70		"	"	
75		"	"	
80		"	"	

EVENT: DOUBLE TRACKS DATE 24 MAY 1963 D+9 DAY

LOCATION ARC "R"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
020	(Less than 100 cpm)			
25	(Less than 100 cpm)			
30	750	100	50	300
35	200	75	220	160
40	200	260	100	180
45	(Less than 100 cpm)			
50		" "		
55		" "		
60		" "		
65		" "		
70		" "		
75		" "		
80		" "		

EVENT: CLEAN SLATE I DATE 25 MAY 1963 D-DAY

LOCATION "A" ARRAY

STATION NUMBER	PAC-3G READINGS (CPM) 1	2	3	MEAN READING
AA01-AA02	(Less than 100 cpm)			
AA03	50	400	50	170
AA04-AA11	(Less than 100 cpm)			
AB01-AB06	(Less than 100 cpm)			
AB07	50	50	325	150
AB08-AB11	(Less than 100 cpm)			
AC01	300	200	125	210
AC02	100	150	100	120
AC03	4,500	225	200	1,700
AC04	100	100	150	120
AC05	150	600	100	280
AC06	150	100	150	130
AC07-AC11	(Less than 100 cpm)			
AD01	(Less than 100 cpm)			
AD02	50	400	600	350
AD03	50	50	75	60
AD04	(Less than 100 cpm)			
AD05	200	5,000	150	1,760
AD06	200	200	150	180
AD07	300	200	100	200
AD08-AD11	(Less than 100 cpm)			
AE01-AE02	(Less than 100 cpm)			
AE03	100	300	500	300
AE04	250	100	150	160
AE05	2,500	3,000	3,000	2,800
AE06	500	600	650	600
AE07	6,500	15,000	400	7,300
AE08-AE11	(Less than 100 cpm)			
AF01	300	125	100	180
AF02	20,000	2,500	500	7,500
AF03	200	250	250	240
AF04	7,000	3,500	8,000	6,200
AF05	350,000	350,000	250,000	316,000
AF06	(Less than 100 cpm)			
AF07	12,500	10,000	15,000	12,300
AF08	100	125	50	100
AF09-AF11	(Less than 100 cpm)			
AG01	(Less than 100 cpm)			
AG02	150	4,500	1,500	2,050
AG03	175	200	300	225
AG04	2,000	5,000	3,500	3,500
AG05	15,000	25,000	20,000	20,000
AG06	45,000	200,000	80,000	108,000

EVENT: CLEAN SLATE I DATE 25 MAY 1963 D-DAY

LOCATION "A" ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
AG07	30,000	40,000	37,500	35,000
AG08	5,500	150	250	2,000
AG09-AG11	(Less than 100 cpm)			
AH01	100	700	100	300
AH02	100	100	100	100
AH03	200	150	100	150
AH04	4,000	3,500	7,500	5,000
AH05	20,000	25,000	20,000	21,600
AH06	30,000	40,000	45,000	38,000
AH07	40,000	50,000	47,500	46,000
AH08	500	750	750	700
AH09	200	125	100	150
AH10-AH11	(Less than 100 cpm)			
AI01	150	100	150	130
AI02	150	100	1,000	420
AI03	200	250	300	250
AI04	8,500	25,000	6,500	13,300
AI05	65,000	100,000	95,000	86,600
AI06	70,000	90,000	65,000	73,000
AI07	60,000	80,000	65,000	68,000
AI08	750	500	750	670
AI09	75	125	100	100
AI10-AI11	(Less than 100 cpm)			
AJ01	(Less than 100 cpm)			
AJ02	100	100	100	100
AJ03	1,500	2,500	1,000	1,830
AJ04	7,500	25,000	25,000	19,000
AJ05	70,000	70,000	90,000	76,000
AJ06	80,000	100,000	80,000	87,000
AJ07	35,000	55,000	40,000	43,000
AJ08	2,000	1,250	1,500	1,560
AJ09	9,000	1,000	3,250	4,550
AJ10	75	100	125	100
AJ11	(Less than 100 cpm)			
AK01	(Less than 100 cpm)			
AK02	500	400	550	500
AK03	4,500	8,500	6,000	6,300
AK04	90,000	35,000	30,000	51,600
AK05	65,000	100,000	90,000	82,000
AK06	50,000	85,000	65,000	66,000
AK07	30,000	35,000	27,500	30,100
AK08	4,500	4,000	1,750	3,100
AK09	1,500	1,000	1,500	1,300
AK10	200	75	100	120
AK11	(Less than 100 cpm)			

EVENT: CLEAN SLATE I DATE 25 MAY 1963 D-DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM) 1	2	3	MEAN READING
BA01-BA15	(Less than 100 cpm)			
BB01-BB15	(Less than 100 cpm)			
BC01-BC15	(Less than 100 cpm)			
BD01-BD08	(Less than 100 cpm			
BD09	50	50	50	50
BD10	---	50	50	30
BD11-BD15	(Less than 100 cpm)			
BE01-BE04	(Less than 100 cpm)			
BE05	25	25	25	25
BE06	50	25	25	30
BE07	25	50	50	40
BE08	---	25	25	20
BE09	50	25	25	30
BE10	25	50	25	30
BE11	50	25	25	30
BE12-BE15	(Less than 100 cpm)			
BF01-BF04	(Less than 100 cpm)			
BF05	25	25	25	25
BF06-BF10	(Less than 100 cpm)			
BF11	25	25	25	25
BF12	100	50	50	70
BF13	50	50	25	40
BG01-BG15	(Less than 100 cpm)			
BH01-BH15	(Less than 100 cpm)			
BI01-BI04	(Less than 100 cpm)			
BIo5	25	25	500	180
BI06-BI15	(Less than 100 cpm)			
BJ01-BJ04	(Less than 100 cpm)			
BJ05	150	25	25	60
BJ06-BJ10	(Less than 100 cpm)			
BJ11	---	50	100	50
BJ12	50	50	50	50
BJ13-BJ15	(Less than 100 cpm)			
BK01-BK05	(Less than 100 cpm)			
BK06	7,000	5,000	4,500	4,160
BK07	35,000	45,000	40,000	40,000
BK08	40,000	50,000	50,000	48,800
BK09	2,700	5,000	5,000	4,250
BK10	600	500	450	520

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LOCATION "B"GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BK11	100	50	50	70
BK12	100	50	50	70
BK13	50	25	50	40
BK14-BK15	(Less than 100 cpm)			
BL01-BL03	(Less than 100 cpm)			
BL04	100	100	50	80
BL05	100	50	100	80
BL06	15,000	15,000	20,000	18,800
BL07	47,500	45,000	37,500	42,000
BL08	15,000	20,000	25,000	20,000
BL09	2,500	3,000	1,250	2,250
BL10	500	275	250	330
BL11	125	175	200	170
BL12	50	25	75	50
BL13-BL15	(Less than 100 cpm)			
BM01-BM02	(Less than 100 cpm)			
BM03	50	50	50	50
BM04	75	50	50	60
BM05	7,000	5,000	4,500	5,500
BM06	35,000	65,000	55,000	51,000
BM07	10,000	20,000	15,000	15,000
BM08	6,000	6,500	6,500	6,300
BM09	1,750	1,000	1,000	1,250
BM10	250	350	175	250
BM11	125	250	200	190
BM12	125	100	75	100
BM13-BM15	(Less than 100 cpm)			
BN01	75	50	75	60
BN02	100	50	75	80
BN03	75	100	75	80
BN04	50	2,000	150	730
BN05	35,000	35,000	35,000	35,000
BN06	20,000	30,000	35,000	28,000
BN07	6,000	8,000	6,000	6,600
BN08	2,500	2,000	2,500	2,300
BN09	350	600	575	500
BN10	400	225	275	300
BN11	100	100	250	150
BN12	175	50	150	120
BN13	75	50	50	60
BN14-BN15	(Less than 100 cpm)			

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LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
B001	75	50	75	60
B002	50	50	75	60
B003	50	100	75	70
B004	6,500	9,500	10,00	8,080
B005	55,000	60,000	60,000	57,000
B006	55,000	20,000	15,000	30,000
B007	2,500	2,000	1,500	2,000
B008	2,000	2,000	2,500	2,180
B009	150	400	200	250
B010	200	100	50	120
B011	75	100	175	120
B012	450	375	200	320
B013	25	50	50	40
B014-B015	(Less than 100 cpm)			

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LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
CA01-CA17	(Less than 100 cpm)			
CB01-CB17	(Less than 100 cpm)			
CC01-CC17	(Less than 100 cpm)			
CD01-CD17	(Less than 100 cpm)			
CE01-CE17	(Less than 100 cpm)			
CF01-CF17	(Less than 100 cpm)			
CG01-CG17	(Less than 100 cpm)			
CH01-CH17	(Less than 100 cpm)			
CI01-CI17	(Less than 100 cpm)			
CJ01-CJ17	(Less than 100 cpm)			
CK01-CK17	(Less than 100 cpm)			
CL01-CL17	(Less than 100 cpm)			
CM01-CM06	(Less than 100 cpm)			
CM07	35,000	45,000	35,000	38,000
CM08	3,000	2,000	1,500	2,500
CM09	300	300	400	330
CM10	50	25	125	70
CM11	50	250	800	330
CM12	50	50	25	40
CM13	25	25	25	25
CM14-CM17	(Less than 100 cpm)			
CN01-CN04	(Less than 100 cpm)			
CN05	---	---	---	---
CN06	2,250	300	350	970
CN07	6,500	6,000	5,250	6,000
CN08	350	300	550	400
CN09	325	175	200	220
CN10	150	50	75	90
CN11	125	75	200	130
CN12	50	75	75	70
CN13-CN17	(Less than 100 cpm)			

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LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
C001-C004	(Less than 100 cpm)			
C005	---	---	---	---
C006	30,000	35,000	20,000	28,000
C007	450	850	300	530
C008	200	350	275	275
C009	100	100	400	200
C010	75	75	125	90
C011	50	25	100	58
C012	25	25	25	25
C013-C017	(Less than 100 cpm)			
CP03-CP04	(Less than 100 cpm)			
CP05	15,000	20,000	15,000	17,000
CP06	9,500	5,000	10,000	8,100
CP07	500	300	250	350
CP08	150	200	275	210
CP09	75	50	75	70
CP10	125	100	200	140
CP11	25	50	25	30
CP12-CP15	(Less than 100 cpm)			
CQ05	25,000	30,000	25,000	27,000
CQ06	200	500	700	470
CQ07	300	200	300	270
CQ08	100	250	150	170
CQ09	75	75	75	75
CQ10	50	25	50	40
CQ11-CQ13	(Less than 100 cpm)			

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LOCATION "A" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
AA02	150	100	200	150
AA04	150	150	150	150
AA07	100	100	150	120
AA09	50	75	75	60
AA11	50	100	350	170
AC01	250	200	350	270
AC03	250	200	3,000	1,150
AC05	400	450	350	400
AC08	100	100	50	80
AC10	50	---	---	20
AE02	200	100	150	150
AE04	325	350	550	410
AE07	600	450	400	480
AE09	150	200	125	160
AE11	150	200	150	170
AF04	2,250	750	1,000	1,340
AF08	700	575	575	620
AF10	250	225	100	190
AG02	75	1,750	175	670
AG04	450	1,250	1,000	900
AG07	1,200	1,700	1,450	1,450
AG09	75	100	125	100
AG11	75	75	50	70
AI03	150	50	100	100
AI05	6,000	20,000	25,000	17,000
AI08	125	125	100	120
AI10	25	50	50	40
AK04	6,000	3,500	2,250	3,920
AK07	5,500	5,000	1,500	4,000
AK09	100	100	100	100
AK11	100	50	50	

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LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BA02	(Less than 100 cpm)			
BA04	"	"		
BA06	"	"		
BA08	"	"		
BA09	"	"		
BA11	"	"		
BA12	"	"		
BA13	"	"		
BA15	"	"		
BB01	(Less than 100 cpm)			
BB03	"	"		
BB05	"	"		
BB06	"	"		
BB07	"	"		
BB08	300	200	200	230
BB10	(Less than 100 cpm)			
BB14	(Less than 100 cpm)			
BC07	(Less than 100 cpm)			
BC08	300	100	150	180
BC09	(Less than 100 cpm)			
BC11	(Less than100 cpm)			
BC13	(Less than 100 cpm)			
BC15	(Less than 100 cpm)			
BD02	(Less than 100 cpm)			
BD05	(Less than 100 cpm)			
BD07	(Less than 100 cpm)			
BD08	300	250	200	250
BE06	50	50	50	50
BE08	300	300	400	330
BE10	50	50	---	30
BE12	(Less than 100 cpm)			
BE14	(Less than 100 cpm)			
BF01	(Less than 100 cpm)			
BF03	(Less than 100 cpm)			
BF05	(Less than 100 cpm)			
BG05	(Less than 100 cpm)			
BG11	"	"		
BG13	"	"		
BG15	"	"		

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LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BH02	(Less than 100 cpm)			
BH04	"	"		
BI12	(Less than 100 cpm)			
BI14	"	"		
BJ01	(Less than 100 cpm)			
BJ03	"	"		
BJ05	550	500	---	350
BK02	(Less than 100 cpm)			
BK04	"	"		
BK05	"	"		
BK06	3,500	750	2,000	2,080
BK07	2,500	7,250	25,000	13,250
BK08	2,000	2,000	1,250	1,750
BK09	150	400	600	380
BK10	50	50	125	75
BK11	(Less than 100 cpm)			
BK13	"	"		
BK15	"	"		
BL02	(Less than 100 cpm)			
BL04	"	"		
BL05	"	"		
BL06	3,000	3,000	2,500	2,830
BL07	3,000	5,000	20,000	9,330
BL08	450	1,500	1,500	1,150
BL09	150	100	75	110
BL10	150	100	125	125
BL11	50	50	350	130
BL12	(Less than 100 cpm)			
BL14	"	"		
BM01-BM04	(Less than 100 cpm)			
BM05	550	400	500	480
BM06	7,500	9,500	20,000	12,330
BMC7	850	5,000	4,500	3,450
BM08	150	250	400	270
BM09	200	300	400	230
BM10	100	50	75	75
BM11	(Less than 100 cpm)			
BN03-BN04	(Less than 100 cpm)			
BN05	20,000	20,000	15,000	18,330
BN06	6,000	8,000	5,000	6,330
BN07	250	550	950	580
BN08	550	350	550	450
BN09-BN15	(Less than 100 cpm)			

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LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
B001	(Less than 100 cpm)			
B003	"	"		
B004	2,500	2,500	1,500	2,170
B005	4,000	8,000	5,000	5,670
B006	1,000	3,500	5,000	3,170
B007	250	250	150	220
B008	350	200	150	230
B009	(Less than 100 cpm)			
B010	"	"		

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LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
CB09	(Less than 100 cpm)			
CD09	25	225	150	130
CM06	(Less than 100 cpm)			
CM07	6,000	7,500	5,000	6,170
CM08	550	450	250	420
CM11	50	200	25	90
CN05	(Less than 100 cpm)			
CN06	250	200	50	170
CN07	700	450	200	450
CN08	(Less than 100 cpm)			
CN10	"	"		
CO04	(Less than 100 cpm)			
CO05	"	"		
CO06	5,500	3,500	1,500	3,500
CO07	50	150	50	120
CO08	50	100	200	120
CO10	25	25	150	70
CP04	(Less than 100 cpm)			
CP05	400	5,000	1,250	2,380
CP06	225	300	250	260
CP07	(Less than 100 cpm)			
CP08	"	"		
CQ05	1,500	1,250	2,500	1,750
CQ06	(Less than 100 cpm)			
CQ07	"	"		
CQ08	"	"		
CQ09	25	500	50	190

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LOCATION ARC "B"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-008	(Less than 100 cpm)			
009	150	125	100	125
010-018	(Less than 100 cpm)			
019	500	550	650	
020	2,500	3,500	6,500	4,200
021	9,500	10,000	15,000	11,500
022	20,000	20,000	18,000	19,400
023	25,000	25,000	22,000	24,000
024	15,000	15,000	17,000	15,800
025	17,000	18,000	18,000	17,500
026	12,000	12,000	12,000	12,000
027	7,500	8,500	8,000	8,000
028	8,000	8,500	8,500	8,400
029	5,000	9,500	7,500	7,400
030	2,500	2,500	4,000	3,000
031	1,000	500	1,000	830
032	200	200	400	275
033	100	100	100	100
034-035	(Less than 100 cpm)			
036	200	200	250	220
037	100	100	100	100
038-120	(Less than 100 cpm)			

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LOCATION ARC "C"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-001	(Less than 100 cpm)			
002	150	150	150	150
003-004	(Less than 100 cpm)			
005	125	125	125	125
006	100	150	100	120
007	125	150	150	140
008	150	150	150	150
009	100	125	100	100
010	150	125	150	140
011-013	(Less than 100 cpm)			
014	100	125	150	125
015	150	125	75	120
016-019	(Less than 100 cpm)			
020	150	400	400	330
021	2,000	2,500	3,500	2,700
022	6,000	6,000	4,500	5,500
023	12,500	10,000	7,500	10,000
024	8,500	7,000	7,000	7,500
025	9,500	9,000	8,500	9,000
026	15,000	15,000	12,500	14,200
027	7,500	8,000	9,000	8,200
028	7,500	6,500	6,500	7,000
029	7,500	8,500	7,000	7,600
030	6,000	8,000	4,500	6,200
031	3,000	2,000	1,500	2,200
032	950	700	1,500	1,050
033	200	150	350	240
034	250	200	175	200
035	100	125	200	150
036	200	50	200	150
037-040	(Less than 100 cpm)			
041	125	75	150	110
042	125	125	100	110
043-120	(Less than 100 cpm)			

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LOCATION ARC "D"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-019	(Less than 100 cpm)			
020	50	200	150	130
021	500	100	400	330
022	1,000	1,000	1,000	1,000
023	1,500	2,000	1,000	1,500
024	3,500	3,500	3,500	3,500
025	6,000	5,500	5,500	5,660
026	8,500	8,500	7,500	8,200
027	7,500	6,500	7,500	7,200
028	7,000	7,500	8,000	7,500
029	6,500	6,000	4,500	6,300
030	8,500	10,000	6,000	8,160
031	5,500	4,000	3,000	4,160
032	400	150	350	300
033	150	150	200	170
034	100	100	250	150
035	300	100	200	200
036	250	200	250	240
037	100	150	100	120
038	200	100	50	110
039	300	100	150	180
040-047	(Less than 100 cpm)			
048	300	100	50	150
049-120	(Less than 100 cpm)			

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LOCATION ARC "E"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000	150	150	175	160
001	175	125	150	150
002	100	100	150	100
003-006	(Less than 100 cpm)			
007	125	100	125	120
008	125	150	100	125
009	200	200	150	180
010	(Less than 100 cpm)			
011	125	150	150	140
012	200	125	100	150
013	(Less than 100 cpm)			
014	125	100	100	110
015	(Less than 100 cpm)			
016	100	100	100	100
017	125	100	150	125
018	(Less than 100 cpm)			
019	125	75	125	110
020	(Less than 100 cpm)			
021	250	150	100	180
022	350	700	700	600
023	750	350	800	630
024	600	900	700	730
025	2,500	2,000	2,000	2,150
026	4,000	4,000	4,500	4,100
027	5,000	5,000	6,000	5,300
028	4,500	4,000	5,000	4,500
029	6,500	5,500	5,500	5,800
030	10,000	7,500	6,500	8,000
031	2,500	4,000	2,000	2,800
032	200	200	400	280
033	50	200	150	130
034	---	200	100	100
035	100	100	100	100
036	(Less than 100 cpm)			
037	100	100	100	100
038-120	(Less than 100 cpm)			

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LOCATION ARC "F"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000	100	100	150	120
001	125	150	125	130
002	100	100	100	100
003	200	150	150	170
004-021	(Less than 100 cpm)			
022	300	800	700	600
023	450	600	300	450
024	550	1,000	600	720
025	1,500	1,000	1,250	1,250
026	2,000	1,500	1,500	1,670
027	4,500	4,000	4,000	4,170
028	2,500	3,500	3,000	3,000
029	5,000	7,000	6,000	6,000
030	10,000	10,000	7,500	9,170
031	1,250	1,250	1,500	1,300
032	250	150	350	250
033-036	(Less than 100 cpm)			
037	150	75	100	110
038-120	(Less than 100 cpM)			

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LOCATION ARC "G"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-018	(Less than 100 cpm)			
019				
020-022	(Less than 100 cpm)			
023	250	250	200	230
024	500	450	350	430
025	300	1,250	550	700
026	1,000	2,000	2,000	1,760
027	3,500	2,500	4,500	3,500
028	4,000	5,000	6,500	5,200
029	7,000	8,500	5,000	6,800
030	10,000	15,000	12,500	12,500
031	2,000	2,500	3,000	2,500
032	300	400	250	310
033	250	300	100	220
034	150	100	50	100
035	(Less than 100 cpm)			
036	75	300	100	150
037	(Less than 100 cpm)			
038	(Less than 100 cpm)			
039		150		150
040		200		200
041		150		150
042	(Less than 100 cpm)			
043		100		100
044	(Less than 100 cpm)			
045		100		100
046		100		100
047		100		100
048-049	(less than 100 cpm)			
050		100		100
051-057	(Less than 100 cpm)			
058		100		100
059-120	(Less than 100 cpm)			

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LOCATION ARC "H" THROUGH ARC "J"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
ARC "H"				
000-023	(Less than 100 cpm)			
024	150	100	100	120
025	550	500	300	450
026	500	2,000	1,000	1,170
027	2,500	4,500	2,500	3,170
028	4,500	4,500	4,000	4,300
029	5,500	5,000	6,000	5,500
030	7,500	7,000	7,000	7,170
031	2,500	2,500	1,500	2,170
032	250	100	350	230
033	250	150	300	230
034-036	(Less than 100 cpm)			
037	50	50	250	120
038-120	(Less than 100 cpm)			
ARC "I"				
000-024	(Less than 100 cpm)			
025	50	350	---	135
026	500	1,000	1,000	835
027	2,000	5,500	3,000	3,500
028	7,500	9,500	6,000	7,650
029	8,000	7,000	5,500	7,000
030	5,000	6,500	1,000	4,000
031	2,500	2,000	3,000	2,500
032	500	500	500	500
033	150	200	150	160
034	200	250	100	180
035	150	150	---	100
036-120	(Less than 100 cpm)			
ARC "J"				
000-025	(Less than 100 cpm)			
026	600	600	650	600
027	2,500	1,000	1,500	1,650
028	5,500	6,300	5,000	5,700
029	7,500	6,500	8,500	7,500
030	6,000	4,500	6,500	5,700
031	5,000	4,000	4,500	4,500
032	500	500	600	540
033	300	250	300	280
034	100	100	150	115
035	100	100	100	100
036	100	100	100	100
037	(Less than 100 cpm)			
038	100	150	50	100
039	(Less than 100 cpm)			
040	100	150	100	115
041	50	50	300	135
042-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE I DATE 25 MAY 1963 D-DAY

LOCATION ARC"K"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-024	(Less than 100 cpm)			
025	125	100	100	110
026	950	600	700	750
027	3,000	3,500	3,000	3,170
028	3,500	5,500	4,500	4,500
029	5,000	5,500	7,500	6,000
030	3,500	3,500	3,500	3,500
031	2,500	3,000	2,750	2,750
032	1,500	1,500	2,000	1,750
033	700	850	600	720
034	300	250	200	250
035	100	100	200	130
036-037	(Less than 100 cpm)			
038	25	150	100	100
039	100	150	50	120
040-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE I DATE 25 MAY 1963 D-DAY

LOCATION ARC "L"

STATION NUMBER	PAC-3G READINGS (CPM) 1	2	3	MEAN READING
000-001	(Less than 100 cpm)			
002	100	150	150	120
003	(Less than 100 cpm)			
004	100	150	150	130
005	(Less than 100 cpm)			
006	100	100	100	100
007	(Less than 100 cpm)			
008	100	200	200	170
009	100	150	250	170
010	150	200	200	180
011	(Less than 100 cpm)			
012	100	150	100	120
013	150	150	250	180
014	200	200	250	220
015	200	200	150	180
016	200	200	150	180
017-018	(Less than 100 cpm)			
019	200	200	200	200
020	150	200	150	170
021-024	(Less than 100 cpm)			
025	100	100	150	120
026	1,000	1,500	3,000	1,830
027	4,000	3,000	2,500	3,170
028	5,000	5,000	4,500	4,500
029	6,000	6,500	8,000	7,000
030	6,[illegible]00	5,500	5,500	6,000
031	2,500	2,500	2,000	2,200
032	2,500	2,500	4,000	3,000
033	1,500	1,500	2,000	1,170
034	350	650	700	560
035	400	400	500	420
036	100	100	200	130
037	(Less than 100 cpm)			
038	150	100	100	120
039	100	100	100	100
040	150	100	100	150
041	150	100	100	120
042-048	(Less than 100 cpm)			
049	200	150	100	150
050-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE I DATE 25 MAY 1963 D-DAY

LOCATION ARC "M"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000		100		100
001			100	100
002		100		100
003			100	100
004			100	100
005-006	(Less than 100 cpm)			
007			100	100
008			100	100
009		200		200
010		150		150
011			200	200
012			150	150
013		200		200
014		200		200
015	200			200
016			150	150
017		200		200
018			150	150
019		200		200
020-025	(Less than 100 cpm)			
026	300	700	500	500
027	1,500	1,500	1,650	1,550
028	1,500	4,500	4,000	3,500
029	4,500	1,650	5,000	3,670
030	2,000	2,000	2,000	2,000
031	2,000	2,500	2,000	2,200
032	800	800	1,500	1,300
033	1,500	2,000	1,500	1,700
034	2,000	1,500	2,000	1,800
035	550	550	900	680
036	200	300	300	270
037	50	100	150	100
038	(Less than 100 cpm)			
039	150	150	100	130
040	(Less than 100 cpm)			
041	200	100	100	130
042	150	50	100	100
043-047	(Less than 100 cpm)			
048	150			150
049	250			250
050	200	200	200	200
051	150	150	150	150
052	150	150	150	150
053	150	150	150	150
054	150	150	150	150
055	100	100	100	100
056	100	100	120	110
057	100	100	100	100
058	100	100	100	100
059-120	(Less than 100 cpm)			

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LOCATION ARC "N"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-027	(Less than 100 cpm)			
028	1,000	1,000	1,500	1,770
029	2,500	2,000	1,500	2,000
030	3,000	3,000	3,000	3,000
031	2,000	2,500	2,000	2,170
032	1,000	1,000	1,500	1,170
033	1,000	1,000	1,500	1,170
034	500	500	500	500
035	1,000	1,000	1,000	1,000
036	1,000	1,500	1,000	1,170
037	550	550	600	570
038	150	250	300	230
039	100	150	50	100
040-044	(Less than 100 cpm)			
045	100	100	100	100
046	150	150	150	150
047	150	200	200	180
048	(Less than 100 cpm)			
049	150	150	150	150
050	100	100	100	100
051-057	(Less than 100 cpm)			
058	100	100	100	100
059-120	(Less than 100 cpm)			

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LOCATION ARC "O"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000	200	250	350	270
001	400	300	350	350
002	250	300	300	280
003	300	350	300	280
004	300	300	300	300
005	300	250	250	280
006	250	250	250	250
007	350	200	200	250
008	250	200	200	210
009	150	200	200	180
010	150	150	200	170
011	150	150	200	170
012	150	150	200	170
013	1 0	200	200	180
014	150	150	150	150
015	100	150	150	130
016	100	100	100	100
017	100	100	100	100
018	100	100	150	150
019	150	100	100	110
020-027	(Less than 100 cpm)			
028	250	250	250	250
029	2,000	2,000	2,500	2,170
030	3,500	3,000	4,000	3,500
031	5,000	4,000	5,000	4,670
032	5,000	4,000	3,500	4,170
033	550	600	600	580
034	550	550	650	580
035	400	300	250	320
036	300	300	450	320
037	300	400	600	430
038	750	850	800	800
039	700	850	800	800
040	650	450	400	500
041	300	250	250	250
042	100	150	200	150
043	150	150	200	150
044	100	100	250	150
045-021	(Less than 100 cpm)			

EVENT: CLEAN SLATE DATE 25 MAY 1963 D-DAY

LOCATION ARC "P"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-004	(Less than 100 cpm)			
005		100		100
006-008	(Less than 100 cpm)			
009		100		100
010		100		100
011		150		150
012		100		100
013		100		100
014		100		100
015		150		150
016-029	(Less than 100 cpm)			
030	500	1,000	1,000	800
031	2,500	2,000	3,500	2,700
032	4,000	4,000	4,000	4,000
033	3,500	2,500	2,500	2,800
034	3,000	2,500	2,500	2,700
035	750	600	350	570
036	850	550	550	650
037	450	750	550	600
038	300	600	250	400
039	400	400	500	440
040	850	450	550	600
041	450	500	750	560
042	250	500	500	400
043	250	300	500	350
044	100	150	400	220
045-046	(Less than 100 cpm)			
047		250		250
048		250		250
049		250		250
050		150		150
051		250		250
052		200		200
053		250		250
054		100		100
055		200		200
056		250		250
057		200		200
058		250		250
059		300		300
060		200		200
061-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE I DATE 28 MAY 1963 D+3 DAY

LOCATION ARC "B" AND ARC "C"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
ARC "B"	1	2	3	
000	---	---	---	---
005	---	---	---	---
008-013	(Less than 100 cpm)			
017	50	---	---	20
018	---	---	---	---
019	100	300	50	150
020	200	550	1,700	820
021	300	300	300	300
022	2,500	2,500	1,200	2,100
023	3,500	6,500	5,500	5,200
024	2,000	2,000	600	1,500
025	4,000	3,500	3,000	3,500
026	3,000	2,000	1,500	2,200
027	550	2,000	800	1,100
028	2,000	550	900	1,150
029	250	250	400	300
030	150	150	300	200
031-042	(Less than 100 cpm)			
045	50	---	50	70
050	---	---	50	20
055	---	50	---	20
060	---	---	---	---
ARC "C"				
000-020	(Less than 100 cpm)			
021	100	450	100	220
022	300	300	200	270
023	800	850	2,000	1,270
024	550	700	800	680
025	450	700	750	630
026	2,000	1,750	1,250	1,700
027	300	850	700	620
028	800	800	950	850
029	450	850	600	630
030	1,250	1,000	500	920
031	950	350	200	500
032-042	(Less than 100 cpm)			
045	25	---	---	---
050	---	---	---	---
055	---	---	---	---
060	---	---	---	---
061-077	(Less than 100 cpm)			

EVENT: CLEAN SLATE I DATE 28 MAY 1963 D-3 DAY

LOCATION ARC "D" AND ARC "E"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
ARC "D"	1	2	3	
021	50	---	100	50
022	150	100	100	120
023	100	150	100	120
024	450	600	650	570
025	750	950	500	730
026	750	450	1,000	730
027	1,000	1,500	700	1,070
028	1,000	2,000	2,500	1,830
029	1,000	1,500	1,000	1,170
030	750	1,500	600	950
031	100	200	200	170
032-034	(Less than 100 cpm)			
036	100	---	---	30
038	50	---	---	20
046	---	100	50	50
ARC "E"				
000	---	---	---	---
005	---	---	---	---
010	---	---	---	---
015	---	---	---	---
020	50	100	50	70
021	100	50	50	70
022	50	100	50	70
023	150	100	200	150
024	200	100	200	170
025	200	200	200	200
026	450	650	450	520
027	1,000	2,000	750	1,250
028	900	1,000	950	950
029	2,000	2,500	1,000	1,830
030	700	500	850	680
031	350	600	400	450
032	100	150	250	170
033-040	(Less than 100 cpm)			
045	---	---	---	---
050	---	---	---	---
055	---	---	---	---
060	---	---	---	---

EVENT: CLEAN SLATE I DATE 28 MAY 1963 D+3 DAY

LOCATION ARC "F" AND ARC "G"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
ARC "F"				
000-006	(Less than 100 cpm)			
010	---	---	---	---
015	---	---	---	---
020	---	---	---	---
021	50	75	50	60
022	75	2,000	75	720
023	---	75	50	40
024	150	75	75	100
025	200	150	75	100
026	200	400	100	230
027	450	700	1,500	880
028	300	1,500	700	830
029	750	600	1,500	950
030	300	200	125	210
031	150	500	200	280
032-042	(Less than 100 cpm)			
043-074	---	---	---	---
ARC "G"				
000	---	---	---	---
005	---	---	---	---
010	---	---	---	---
015	---	---	---	---
020-023	(Less than 100 cpm)			
024	100	150	100	120
025	100	150	100	120
026	350	300	600	420
027	1,500	1,500	2,000	1,670
028	2,000	2,000	1,500	1,830
029	2,500	4,000	2,000	2,830
030	2,000	2,000	1,500	1,830
031	300	350	300	320
032-050	(Less than 100 cpm)			
055	---	---	---	---
060	50	50	---	30

EVENT: CLEAN SLATE I DATE 28 MAY 1963 D+3 DAY

LOCATION ARC "H" AND ARC "I"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
ARC "H"				
000	---	---	---	---
005	25	---	---	---
010	---	---	---	---
015	---	---	---	---
020-026	(Less than 100 cpm)			
027	500	400	400	430
028	100	200	300	200
029	300	250	300	200
030	50	50	100	70
031	150	50	150	120
032-035	(Less than 100 cpm)			
036-059	---	---	---	---
060	25	---	---	---
061-079	---	---	---	---
ARC "I"				
000	---	---	---	---
005	---	---	---	---
010	---	---	---	---
015	---	---	---	---
020-026	(Less than 100 cpm)			
027	100	300	100	170
028	500	300	200	330
029	350	600	350	430
030	200	200	200	200
031	150	100	200	150
032-036	(Less than 100 cpm)			
037-078	---	---	---	---

EVENT: CLEAN SLATE I DATE 28 MAY 1963 D+3 DAY

LOCATION ARC "J" AND ARC "K"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
ARC "J"				
000	---	---	---	---
005	---	---	---	---
010	---	---	---	---
015	---	---	---	---
020-025	(Less than 100 cpm)			
026	150	100	175	140
027	250	200	250	230
028	2,000	2,000	2,000	2,000
029	1,500	1,500	1,500	1,500
030	2,000	1,750	2,000	1,920
031	1,500	1,250	1,000	1,250
032	100	100	200	130
033-037	(Less than 100 cpm)			
039	---	---	---	---
040	---	---	---	---
045	---	---	---	---
050	---	---	---	---
055	---	---	---	---
060	---	---	---	---
ARC "K"				
000	25	50	25	30
005	25	25	25	25
010	---	---	---	---
015	25	25	25	25
020-024	(Less than 100 cpm)			
025	200	100	50	120
026	900	500	500	630
027	650	650	750	680
028	1,000	2,000	2,000	1,670
029	2,000	2,000	2,000	2,000
030	2,000	2,000	2,000	2,000
031	1,500	1,500	1,000	1,330
032	500	1,000	1,000	830
033	250	350	250	280
034	100	50	150	100
035	150	100	100	120
036-040	(Less than 100 cpm)			
045	50	50	100	70
050	25	25	25	25
055	---	---	---	---
060	---	---	---	---

EVENT: CLEAN SLATE I DATE 28 MAY 1963 D+3 DAY

LOCATION ARC "L" AND ARC "M"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
ARC "L"				
000-024	---	---	---	---
025	50	50	50	50
026	50	100	150	100
027	150	250	300	230
028	150	150	250	180
029	500	1,000	1,000	830
030	250	250	400	300
031	200	150	150	170
032	350	300	600	420
033	500	400	300	400
034	50	100	200	120
035	---	50	50	30
036-039	---	---	---	---
041	(Less than 100 cpm)			
042	"	"		
045	"	"		
048	"	"		
049	50	50	50	50
050	---	---	---	---
051	50	50	---	30
052-060	---	---	---	---
ARC "M"				
000-005	---	---	---	---
006	50	50	---	30
007	50	50	50	50
008-010	---	---	---	---
011	50	50	50	50
012-016	---	---	---	---
017	---	50	---	---
018-020	---	---	---	---
021	---	50	---	20
022	50	---	50	30
023	50	---	---	20
024	---	50	50	30
025	---	50	50	30
026	50	100	50	70
027	450	400	350	400
028	150	650	150	320
029	300	450	550	430
030	100	150	150	130
031	100	500	300	300
032	350	600	200	380
033	400	700	500	530
034	200	250	350	270
035	250	150	200	200
036-050	(Less than 100 cpm)			
051-060	---	---	---	---

EVENT: CLEAN SLATE I DATE 28 MAY 1963 D+3 DAY

LOCATION ARC "N" THROUGH ARC "P"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
ARC "N"				
000	(Less than 100 cpm)			
005	"	"		
010	"	"		
015	"	"		
020	"	"		
021	"	"		
022	"	"		
023	"	"		
024	"	"		
025	"	"		
026	"	"		
027	50	50	50	50
028	350	350	350	350
029	100	200	100	130
030	500	500	500	500
031	500	500	500	500
032	50	---	---	---
033	100	50	50	70
034	50	100	100	80
035	200	200	200	200
036	100	100	150	120
037	150	100	100	120
038	50	50	50	50
039	50	50	50	50
040	---	---	---	---
045	50	50	50	50
050	---	---	---	---
055	---	---	---	---
ARC "O"				
000-028	---	---	---	---
029	50	---	---	---
030	75	---	---	25
031-050	(Less than 100 cpm)			
051-054	---	---	---	---
055	25	---	---	---
056-059	---	---	---	---
060	25	---	---	---
ARC "P"				
000-025	(Less than 100 cpm)			
026	---	---	25	---
027-029	---	---	---	---
030	50	50	25	40
031	50	350	150	180
032-051	(Less than 100 cpm)			
052-060	---	---	---	---

EVENT: CLEAN SLATE II DATE 31 MAY 1963 D-DAY

LOCATION ''B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BA01-BA08	---	---	---	---
BA09	(Less than 100 cpm)			
BA10	(Less than 100 cpm)			
BA11-BA15	---	---	---	---
BB01-BB05	---	---	---	---
BB06-BB09	(Less than 100 cpm)			
BB10	150	100	50	100
BB11	(Less than 100 cpm)			
BB12-BB13	---	---	---	---
BB14	(Less than 100 cpm)			
BB15	---	---	---	---
BC01-BC04	---	---	---	---
BC05	)Less than 100 cpm(			
BC06	550	300	350	400
BC07	550	600	550	570
BC08	2,000	2,000	2,000	2,000
BC09	2,000	2,000	2,000	2,000
BC10	2,250	1,500	1,500	1,750
BC11	3,750	4,250	4,000	4,000
BC12	5,000	4,000	3,750	4,250
BC13	4,000	3,000	4,000	3,700
BC14	2,000	2,000	1,500	1,800
BC15	650	650	650	650
BD01	(Less than 100 cpm)			
BD02	150	150	00	170
BD03	(Less than 100 cpm)			
BD04	150	150	100	130
BD05	3,000	2,750	3,000	2,900
BD06	6,000	6,000	6,750	6,250
BD07	5,500	5,000	5,000	5,200
BD08	3,000	3,500	2,500	3,000
BD09	3,500	5,000	5,000	4,500
BD10	4,000	5,500	5,500	5,000
BD11	4,500	5,500	6,000	5,300
BD12	2,000	2,000	2,500	2,200
BD13	1,500	1,500	1,500	1,500
BD14	2,500	1,500	2,000	2,000
BD15	900	850	900	880
BE01	150	150	50	125
BE02	300	450	400	380
BE03	500	550	650	570
BE04	1,500	1,500	1,500	1,500
BE05	7,500	7,500	8,000	7,700

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LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BE06	6,500	8,000	8,500	7,700
BE07	3,500	4,000	4,000	3,800
BE08	4,500	5,000	5,500	5,200
BE09	3,500	5,000	4,250	4,250
BE10	2,500	4,000	5,500	4,000
BE11	2,000	3,750	3,750	3,200
BE12	3,000	2,500	3,000	2,800
BE13	1,500	1,750	1,000	1,400
BE14	750	850	750	700
BE15	400	300	700	650
BF01	1,250	1,250	950	1,150
BF02	500	450	900	600
BF03	6,500	7,000	7,000	6,800
BF04	9,000	9,500	9,000	9,200
BF05	9,000	9,000	8,500	8,800
BF11	3,500	6,000	6,000	5,200
BF12	3,750	4,000	3,250	3,700
BF13	3,500	3,000	3,000	3,200
BF14	1,250	1,000	1,000	1,100
BF15	550	650	600	600
BG01	700	700	800	730
BG02	9,000	9,000	8,500	8,800
BG03	15,000	10,000	10,000	11,700
BG04	10,000	10,000	10,000	10,000
BG05	10,000	10,000	10,000	10,000
BG11	20,000	17,500	15,000	17,500
BG12	15,000	15,000	15,000	15,000
BG13	7,500	7,500	7,500	7,500
BG14	4,500	5,000	4,500	4,700
BG15	2,000	2,000	2,000	2,000
BH01	3,000	3,500	2,500	3,000
BH02	3,500	3,500	3,000	3,300
BH03	10,000	15,000	10,000	11,700
BH04	15,000	10,000	15,000	13,300
BH05	20,000	15,000	12,500	15,800
BH11	72,500	70,000	60,000	67,500
BH12	60,000	55,000	42,500	52,500
BH13	40,000	40,000	35,000	38,300
BH14	25,000	27,500	25,000	25,800
BH15	10,000	10,000	10,000	10,000
BI01	12,500	12,500	10,000	11,700
BI02	22,500	22,500	20,000	21,700
BI03	20,000	20,000	20,000	20,000
BI04	12,500	12,500	12,500	12,500
BI05	15,000	25,000	30,000	23,300

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LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BI11	75,000	80,000	90,000	81,700
BI12	85,000	85,000	85,000	85,000
BI13	40,000	40,000	40,000	40,000
BI14	30,000	27,500	90,000	49,200
BI15	15,000	15,000	15,000	15,000
BJ01	2,000	1,500	900	1,500
BJ02	40,000	35,000	35,000	36,700
BJ03	55,000	55,000	60,000	56,700
BJ04	25,000	35,000	45,000	35,000
BJ05	15,000	20,000	20,000	18,300
BJ11	100,000	95,000	85,000	93,300
BJ12	80,000	80,000	80,000	80,000
BJ13	32,500	35,000	35,000	34,200
BJ14	25,000	37,500	30,000	30,800
BJ15	20,000	20,000	20,000	20,000
BK01-BK10	(Less than 100 cpm)			
BK11	500,000	500,000	500,000	500,000
BK12	100,000	100,000	100,000	100,000
BK13-BK15	(Less than 100 cpm)			
BL01-BL15	(Less than 100 cpm)			
BM01-BM15	(Less than 100 cpm)			
BN01-BN15	(Less than 100 cpm)			
BO01-BO15	(Less than 100 cpm)			

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LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM) 1	2	3	MEAN READING
CA01--				
CF17	(Less than 100 cpm)			
CG13-CG14	(Less than 100 cpm)			
CH03	(Less than 100 cpm)			
CH04	100	100	100	100
CH05	350	350	325	340
CH13	225	275	250	250
CH14	100	150	150	140
CH15-CH17	(Less than 100 cpm)			
CI02	(Less than 100 cpm)			
CI03	125	125	125	125
CI04	350	300	300	320
CI05	350	400	300	350
CI13	400	350	550	430
CI14	125	150	125	130
CI15	125	125	125	125
CI16	100	100	100	100
CI17	75	100	75	80
CJ01	(Less than 100 cpm)			
CJ02	100	175	100	125
CJ03	150	150	150	150
CJ04	100	125	125	120
CJ05	1,000	900	450	800
CJ13	3,500	4,500	4,750	4,250
CJ14	675	925	750	770
CJ15	150	275	300	230
CJ16	125	125	125	125
CJ17	100	75	125	100
CK01	700	450	375	500
CK02	200	250	250	230
CK03	200	150	150	170
CK04	150	150	125	140
CK05	475	350	400	400
CK13	4,000	4,000	3,750	3,900
CK14	2,500	2,250	2,500	2,400
CK15	725	725	850	760
CK16	300	275	250	270
CK17	150	150	125	140
CL01-CL02	(Less than 100 cpm)			
CL03	450	500	500	480
CL04	(Less than 100 cpm)			
CL05	400	350	300	350

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LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
CL13	6250	5,750	5m750	5,900
CL14	2,500	2,250	2,250	2,350
CL15	750	800	900	820
CL16	575	475	550	550
CL17	300	350	250	300
CM01-CM04	(Less than 100 cpm)			
CM05	10,000	12,500	12,500	11,700
CM06	100,000	100,000	95,000	98,300
CM07	4,500	4,500	4,500	4,500
CM08	70,000	67,500	67,500	68,300
CM09	35,000	40,000	35,000	36,700
CM10	12,500	15,000	12,500	14,200
CM11	15,000	15,000	12,500	14,200
CM12	6,500	6,000	6,500	6,350
CM13	3,500	3,500	3,500	3,500
CM14	3,250	3,000	3,000	3,100
CM15	2,500	2,250	2,000	2,250
CM16	775	825	825	810
CM17	400	350	400	380
CN01-CN02	(Less than 100 cpm)			
CN03	550	500	500	520
CN04	2,000	1,500	1,500	1,700
CN05	100,000	95,000	100,000	98,000
CN06	100,000	90,000	100,000	96,700
CN07	95,000	95,000	90,000	93,300
CN08	70,000	55,000	70,000	65,000
CN09	35,000	27,500	35,000	32,500
CN10	10,000	10,000	10,000	10,000
CN11	6,250	6,000	6,500	6,250
CN12	4,000	4,500	4,000	4,200
CN13	3,000	3,000	3,250	3,100
CN14	2,000	2,500	2,500	2,300
CN15	2,000	1,500	1,500	1,700
CN16	1,500	1,250	1,500	1,450
CN17	600	600	600	600
CO01-CO17	(Less than 100 cpm)			
CP01-CP17	(Less than 100 cpm)			
CQ01-CQ17	(Less than 100 cpm)			

EVENT: CLEAN SLATE II DATE 31 MAY 1963 D-DAY

LOCATION ARC "B"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-003	(Less than 100 cpm)			
004	200	250	300	250
005	950	350	50	450
006	600	950	850	800
007	1,500	2,000	2,500	2,000
008	5,000	6,500	6,000	5,800
009	15,000	15,000	15,000	15,000
010	25,000	25,000	27,000	25,700
011	35,000	30,000	30,000	31,700
012	40,000	40,000	40,000	40,000
013	35,000	40,000	40,000	38,300
014	50,000	55,000	55,000	53,300
015	55,000	50,000	55,000	53,300
016	70,000	65,000	65,000	66,700
017	85,000	85,000	90,000	86,700
018	90,000	90,000	95,000	91,700
019	95,000	95,000	95,000	95,000
020	100,000	100,000	100,000	100,000
021	100,000	100,000	100,000	100,000
022	95,000	95,000	95,000	95,000
023	90,000	90,000	90,000	90,000
024	90,000	90,000	90,000	90,000
025	85,000	90,000	85,000	86,700
030	60,000	55,000	55,000	56,700
035	40,000	42,000	40,000	40,630
040	25,000	25,000	25,000	25,000
045	25,000	25,000	25,000	25,000
050	18,000	18,000	20,000	18,700
055	15,000	15,000	17,000	15,700
060	15,000	14,000	15,000	14,700
065	9,000	9,000	9,000	9,000
070	6,000	6,000	6,500	6,170
075	5,000	5,000	5,000	5,000
080	4,000	3,500	4,000	3,700
085	2,500	3,000	3,000	2,700
090	2,000	2,000	2,500	2,170
095	1,400	1,500	1,400	1,430
100	950	1,000	1,000	970
105	700	650	850	730
110	500	700	600	600
115	600	700	650	650
120	500	650	600	600

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LOCATION ARC "C"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-004	(Less than 100 cpm)			
005	150	450	125	240
006	500	1,500	500	830
007	1,500	1,500	1,000	1,300
008	2,500	2,000	2,500	2,300
009	1,500	2,000	1,500	1,700
010	5,500	4,000	4,000	4,500
011	5,000	7,500	2,500	5,000
012	10,000	10,000	5,000	8,170
013	12,500	12,500	10,000	11,700
014	15,000	15,000	12,500	14,170
015	17,500	17,500	15,000	16,700
016	25,000	25,000	20,000	23,300
017	25,000	27,500	30,000	27,500
018	35,000	35,000	35,000	35,000
019	30,000	30,000	25,000	28,300
020	35,000	27,500	35,000	32,500
021	45,000	40,000	45,000	43,300
022	52,500	50,000	50,000	50,800
023	50,000	52,500	50,000	50,800
024	52,500	55,000	50,000	52,500
025	45,000	45,000	45,000	45,000
026	40,000	37,500	40,000	39,200
027	32,500	35,000	35,000	34,200
028	30,000	30,000	25,000	28,300
029	30,000	27,500	27,500	28,300
030	25,000	25,000	20,000	23,300
035	20,000	20,000	20,000	20,000
040	15,000	17,500	17,500	16,700
045	12,500	10,000	12,500	11,700
050	7,500	7,500	8,000	7,670
055	6,500	7,000	7,000	6,830
060	6,000	6,000	6,500	6,170
065	5,000	5,000	5,000	5,000
070	4,500	4,500	4,500	4,500
080	3,000	3,000	3,000	3,000
081	3,000	3,000	3,000	3,000
082	3,000	3,000	3,000	3,000
083	2,500	3,000	2,750	2,750
084	2,500	2,500	2,250	2,400
085	2,500	2,750	2,750	2,600
086	2,500	2,500	2,500	2,500
087	2,500	2,000	2,750	2,400
088	2,000	2,250	2,750	2,400
089	2,250	2,000	2,250	2,200

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LOCATION ARC "C"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
090	2,000	2,000	2,000	2,000
091	1,750	2,000	2,000	1,900
092	1,500	2,000	1,500	1,700
093	1,500	1,750	1,500	1,550
094	1,500	1,500	1,500	1,500
095	1,500	1,500	1,500	1,500
096	1,500	1,500	1,500	1,500
097	1,250	1,500	1,250	1,300
098	1,250	1,500	1,500	1,400
099	1,000	1,000	1,250	1,100
100	1,000	1,000	1,000	1,000
101	800	850	900	850
102	800	850	800	820
103	750	700	700	720
104	700	700	700	700
105	750	700	650	700
110	500	500	450	480
120	250	250	250	250

EVENT: CLEAN SLATE II DATE 31 MAY 1963 D-DAY

LOCATION ARC "D"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-008	(Less than 100 cpm)			
009	650	150	250	350
010	950	950	1,500	1,130
011	2,000	2,500	2,500	2,300
012	4,000	4,500	3,500	4,000
013	7,500	7,500	7,500	7,500
014	15,000	15,000	15,000	15,000
015	20,000	20,000	15,000	18,300
016	20,000	20,000	15,000	18,300
017	20,000	25,000	20,000	21,700
018	20,000	25,000	20,000	21,700
019	25,000	25,000	25,000	25,000
020	25,000	20,000	25,000	23,300
021	20,000	25,000	25,000	23,000
022	25,000	25,000	20,000	23,000
023	25,000	30,000	25,000	26,700
024	25,000	30,000	25,000	26,700
025	25,000	25,000	25,000	25,000
026	20,000	20,000	20,000	20,000
027	20,000	20,000	,000	18,300
028	15,000	15,000	10,000	13,300
029	15,000	15,000	15,000	15,000
030	8,500	8,500	8,500	8,500
035	8,000	7,500	7,000	7,500
040	5,000	5,500	5,000	5,170
045	4,500	5,000	4,500	4,670
050	4,000	4,000	3,500	3,800
055	3,000	3,500	3,500	3,300
060	3,000	3,000	3,500	3,170
065	3,000	2,500	3,000	2,800
070	2,000	2,000	2,500	2,170
075	2,500	2,500	2,500	2,500
080	2,000	2,000	2,000	2,000
085	2,000	2,000	2,000	2,000
090	2,000	1,500	1,500	1,700
095	1,500	1,000	1,500	1,300
100	750	850	900	830
104	700	650	600	650
110	400	550	600	620
115	400	400	400	400
116	450	450	400	430
117	350	250	350	300
118	350	450	300	370
119	350	300	200	270
120	350	350	250	320

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LOCATION ARC "E"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-011	(Less than 100 cpm)			
012	350	200	250	270
013	900	1,500	1,250	1,200
014	2,500	2,500	2,000	2,330
015	6,000	6,000	6,000	6,000
016	15,000	15,000	15,000	15,000
017	20,000	25,000	20,000	21,700
018	25,000	25,000	25,000	25,000
019	25,000	20,000	25,000	23,300
020	20,000	25,000	25,000	23,300
021	30,000	25,000	30,000	28,300
022	30,000	35,000	30,000	31,700
023	35,000	35,000	30,000	33,300
024	30,000	30,000	25,000	28,300
025	25,000	25,000	25,000	25,000
026	20,000	20,000	15,000	18,300
027	15,000	15,000	15,000	15,000
028	10,000	10,000	10,000	10,000
029	8,000	9,000	8,000	8,300
030	7,500	7,500	7,000	7,300
035	5,000	5,500	5,500	5,300
040	4,000	4,000	4,500	4,170
045	4,000	4,000	4,000	4,000
050	3,000	3,500	3,000	3,170
055	2,500	2,500	2,500	2,500
060	2,000	2,000	2,000	2,000
066	1,250	1,500	1,500	1,400
067	1,500	1,250	1,500	1,400
068	1,500	1,250	1,250	1,350
069	1,000	1,000	1,000	1,000
070	1,250	1,250	1,000	1,200
071	1,000	1,000	1,250	1,080
072	950	1,000	900	950
073	900	1,000	1,000	970
074	900	900	850	880
075	850	800	750	800
076	800	500	600	630
077	500	700	800	670
078	950	950	850	920
079	900	800	800	830
080	750	800	800	770
081	900	900	800	870
082	850	1,000	750	830
083	650	750	700	770
084	750	900	800	820
085	650	750	700	700

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LOCATION ARC "E"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
086	700	850	800	770
087	750	800	700	750
088	700	800	600	700
089	600	800	700	700
090	750	700	600	670
095	750	750	800	770
100	700	850	800	770
105	700	650	650	670
110	450	600	550	530
115	450	400	450	430
120	350	400	400	380

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LOCATION ARC "F"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-006	(Less than 100 cpm)			
007	100	150	100	120
008	(Less than 100 cpm)			
009	"	"		
010	125	125	150	130
011	125	125	125	125
012	100	100	100	100
013	200	150	175	175
014	700	1,500	1,000	1,070
015	400	500	400	430
016	1,000	1,000	1,000	1,000
017	2,000	2,000	1,500	1,830
018	4,500	5,000	4,500	4,670
019	6,000	6,000	5,500	5,800
020	7,500	7,500	7,500	7,500
021	10,000	5,000	5,000	6,870
022	6,000	6,000	6,000	6,000
023	7,000	7,000	7,500	7,170
024	8,500	15,000	15,000	12,800
025	7,000	7,000	7,000	7,000
026	6,000	6,500	7,000	6,500
027	9,500	9,500	9,500	9,500
028	4,000	4,000	4,000	4,000
029	3,500	3,500	3,500	3,500
030	2,500	2,500	2,500	2,500
031	2,500	2,500	2,500	2,500
032	1,500	2,000	2,000	1,800
033	1,500	2,000	2,000	1,800
034	1,500	1,500	1,500	1,500
035	1,500	1,500	1,500	1,500
036	1,000	1,000	1,000	1,000
037	1,000	1,000	1,000	1,000
038	1,000	1,000	1,000	1,000
039	800	1,000	1,000	900
040	1,000	1,000	1,000	1,000
041	1,000	1,000	1,000	1,000
042	800	750	800	780
043	950	950	950	950
044	1,000	1,000	1,000	1,000
045	950	1,000	1,000	980
046	700	700	850	760
047	850	850	850	850
048	800	800	750	780
049	850	900	950	900
050	1,500	1,500	1,500	1,500
051	1,500	1,500	1,500	1,500
052	15,00	1,500	1,500	1,500
053	1,500	1,500	1,000	1,300
054	1,000	1,500	1,500	1,300
055	1,500	1,500	1,500	1,500

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LOCATION ARC "F"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
056	1,500	1,500	1,500	1,500
057	1,500	1,500	1,000	1,300
058	1,000	1,000	1,000	1,000
059	1,000	1,500	1,000	1,170
060	1,000	1,500	1,000	1,170
061	1,000	1,500	1,000	1,170
062	1,000	1,000	1,000	1,000
063	1,000	1,000	1,000	1,000
064	1,000	1,000	1,000	1,000
065	1,000	1,000	1,000	1,000
066	1,000	1,000	1,000	1,000
067	1,000	1,000	1,000	1,000
068	1,000	1,000	1,000	1,000
069	750	800	850	800
070	600	750	650	620
071	750	750	700	730
072	600	600	500	570
073	700	600	650	650
074	550	650	600	600
075	600	550	600	580
076	800	650	750	730
077	500	500	450	480
078	550	600	550	580
079	650	650	600	630
080	450	450	500	470
085	400	400	450	420
090	500	450	450	470
095	400	450	350	400
100	350	350	350	350
105	450	300	300	350
110	300	350	250	300
115	400	300	300	330
120	250	250	250	250

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LOCATION ARC "G"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-014	(Less than 100 cpm)			
015	150	150	200	165
016	650	650	700	670
017	1,000	1,000	1,000	1,000
018	4,500	3,500	3,500	3,850
019	8,000	7,500	7,000	7,500
020	15,000	15,000	15,000	15,000
021	20,000	20,000	20,000	20,000
022	20,000	20,000	20,000	20,000
023	20,000	25,000	25,000	23,350
024	20,000	20,000	20,000	20,000
025	20,000	20,000	20,000	20,000
026	15,000	15,000	15,000	15,000
027	15,000	15,000	15,000	15,000
028	9,500	9,500	9,500	9,500
029	8,000	8,000	7,500	7,850
030	5,500	5,500	4,500	5,175
031	4,000	3,500	4,000	3,750
032	3,500	3,500	3,500	3,500
033	3,000	3,000	2,500	2,850
034	3,000	3,000	2,500	2,850
035	2,500	2,000	2,500	2,350
036	2,000	2,000	2,000	2,000
037	2,000	2,000	2,000	2,000
038	2,000	1,500	2,000	1,800
039	1,500	2,000	1,500	1,800
040	1,000	1,500	1,000	1,200
041	1,500	1,500	1,500	1,500
042	1,500	1,500	1,500	1,500
043	1,500	1,500	1,500	1,500
044	1,500	1,500	1,500	1,500
045	1,500	1,000	1,000	1,200
046	1,000	1,500	1,000	1,200
047	1,000	1,000	1,000	1,000
048	1,000	1,000	1,500	1,200
049	950	1,000	950	980
050	950	850	950	925
055	700	850	700	750
060	700	750	800	750
065	700	650	750	700
070	550	550	600	570
075	400	450	550	470
080	350	450	400	400
085	250	300	350	300
090	300	300	300	300
095	250	300	250	270
100	200	250	200	215
105	200	200	300	230
110	200	200	250	220
115	250	250	250	250
120	300	250	300	280

EVENT: CLEAN SLATE II DATE 31 MAY 1963 D-DAY

LOCATION ARC "H"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-015	(Less than 100 cpm)			
016	100	100	100	100
017	150	250	200	200
018	500	500	550	520
019	2,500	3,500	2,000	2,700
020	5,000	5,000	5,000	5,000
021	10,000	10,000	10,000	10,000
022	15,000	10,000	10,000	11,700
023	10,000	10,000	10,000	10,000
024	15,000	15,000	15,000	15,000
025	20,000	20,000	20,000	20,000
026	15,000	15,000	15,000	15,000
027	7,500	8,500	7,500	7,800
028	5,500	6,500	5,500	5,800
029	4,000	4,000	3,500	3,850
030	3,500	3,500	3,000	3,300
035	2,500	2,000	2,000	2,170
040	1,500	1,500	1,500	1,500
045	1,500	1,000	1,000	1,170
050	1,000	1,000	1,500	1,170
055	800	700	700	730
060	850	800	650	770
065	750	600	600	650
070	550	600	650	600
075	550	500	500	520
080	400	400	400	400
085	500	550	500	520
090	400	450	500	450
095	350	350	400	360
100	400	450	350	400
105	200	200	250	220
110	300	300	300	300
115	200	200	200	200
120	150	200	300	220

EVENT: CLEAN SLATE II DATE 31 MAY 1963 D-DAY

LOCATION ARC "I"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-017	(Less than 100 cpm)			
018	350	200	---	170
019	950	850	700	840
020	1,500	1,000	2,000	1,500
021	3,000	3,500	4,000	3,500
022	4,000	3,500	3,500	3,670
023	5,000	4,500	5,000	4,850
024	4,000	4,500	5,000	4,500
025	5,000	4,500	5,000	4,800
026	3,500	4,000	3,500	3,670
027	2,500	2,000	2,000	2,170
028	1,500	1,500	1,500	1,500
029	1,000	1,500	1,000	1,170
030	1,000	1,000	1,000	1,000
035	500	550	500	520
040	1,000	1,000	500	830
045	500	1,000	1,000	830
050	500	400	600	500
055	450	300	350	370
060	250	300	400	320
070	200	150	150	170
080	150	100	100	120
090	150	50	150	120
100	50	150	50	70
110	100	150	50	100
120	200	200	200	200

EVENT: CLEAN SLATE II DATE 31 MAY 1963 D- DAY

LOCATION ARC "J"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-007	(Less than 100 cpm)			
008	100	100	100	100
009-018	(Less than 100 cpm)			
019	1,500	1,500	1,500	1,500
020	5,000	5,500	5,000	5,200
021	1,500	1,500	1,500	1,500
022	4,500	4,500	4,500	4,500
023	5,000	5,000	5,000	5,000
024	5,000	5,000	10,000	6,670
025	10,000	10,000	10,000	10,000
026	10,000	10,000	10,000	10,000
027	,000	6,000	5,500	5,800
028	3,000	3,000	3,000	3,000
029	3,000	3,500	3,000	3,200
030	2,000	2,000	2,000	2,000
035	1,000	1,000	1,000	1,000
040	700	700	700	700
045	700	700	700	700
050	300	600	500	430
051	450	550	500	530
052	450	400	500	450
053	300	300	250	280
054	500	500	500	500
055	300	300	250	280
056	400	400	400	400
057	400	400	400	400
058	400	450	250	360
059	250	250	250	250
060	300	250	250	270
061	350	350	350	350
062	400	250	150	270
063	350	200	200	250
064	200	200	200	200
065	300	250	200	270
066	200	150	150	170
067	150	150	150	150
068	300	300	250	285
070	250	250	250	250
071	200	200	200	200
072	150	150	150	150
073	150	150	150	150
074	250	250	250	250
075	250	200	200	220
076	300	300	300	300
077	200	200	150	180
078	250	250	250	250
079	250	200	150	200

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LOCATION ARC "J"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
080	200	150	150	170
081	200	150	150	170
082	150	150	150	150
083	150	150	150	150
084	200	200	200	200
085	100	100	150	120
086	100	150	100	120
087	100	100	100	100
088	150	100	100	120
089	150	100	100	120
090	200	200	200	200
091	100	100	100	100
092	100	100	100	100
093	100	150	100	120
094	200	200	200	00
095	200	100	200	170
096	150	100	100	120
097	150	150	100	150
098	200	200	200	200
099	200	200	200	200
100	100	100	100	100
101-104	(Less than 100 cpm)			
105	150	150	150	150
106-109	(Less than 100 cpm)			
110-114	(Less than 100 cpm)			
115	150	150	150	150
116-119	(Less than 100 cpm)			
120	150	150	150	150

EVENT: CLEAN SLATE II DATE 31 MAY 1963 D-DAY

LOCATION ARC "K"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-019	(Less than 100 cpm)			
020	75	150	100	100
021	350	250	300	300
022	1,250	1,500	1,000	1,250
023	2,000	2,500	2,000	2,170
024	3,500	4,000	3,500	3,700
025	5,250	5,500	4,750	5,170
026	6,000	6,500	7,000	6,500
027	6,500	7,000	7,500	7,000
028	4,000	4,500	5,000	4,500
029	3,500	3,500	3,500	3,500
030	2,000	1,500	2,000	1,850
031	950	1,250	1,250	1,150
032	1,000	1,500	1,000	1,170
033	950	950	1,000	970
034	650	850	650	720
035	750	750	700	730
036	500	550	550	530
037-039	(Less than 100 cpm)			
040	400	400	450	420
041-044	(Less than 100 cpm)			
045	450	450	400	430
046-049	(Less than 100 cpm)			
050	300	300	350	320
051-054	(Less than 100 cpm)			
055	350	400	350	370
056-059	(Less than 100 cpm)			
060	250	350	400	330
065	400	400	350	380
070	300	300	250	280
075	300	250	250	280
080	150	250	250	220
085	150	150	150	150
090	100	50	100	100
095	100	100	50	100
105	100	100	100	100
110	100	100	50	100
115	50	100	100	100

EVENT: CLEAN SLATE II DATE 31 MAY 1963 D-DAY

LOCATION ARC "L"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-024	(Less than 100 cpm)			
025	3,500	3,000	3,500	3,300
030	600	850	800	750
033	600	850	800	750
034	500	500	500	500
035	650	550	500	570
036	500	550	550	530
037	500	600	500	530
038	750	700	750	730
039	800	700	750	750
040	700	800	800	770
041	1,000	1,500	1,500	1,300
042	900	950	900	920
043	900	800	850	850
045	900	850	700	820
046	500	450	500	480
047	700	550	450	550
048	600	600	350	500
049	550	400	350	420
050	450	400	450	430
051	250	300	450	330
052	300	250	300	300
053	250	250	250	250
054	250	250	200	230
055	250	150	250	220
056	150	150	150	150
057	100	100	150	120
058	100	50	100	100
059	100	150	100	120
060	150	100	100	120
065	100	150	150	130
070	150	150	100	130
075	150	100	100	120
080	200	200	200	200
085-120	(Less than 100 cpm)			

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LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BE12	150	100	100	120
BE13	50	100	100	90
BE14-BE15	(Less than 100 cpm)			
BF01	400	400	350	390
BF02	1,000	1,000	1,000	1,000
BF03	1,000	1,000	1,000	1,000
BF04	5,000	5,000	5,000	5,000
BF05	7,000	8,5000	7,500	7,700
BF11	200	175	175	180
BF12	100	125	100	110
BF13	100	50	100	80
BF14-BF15	(Less than 100 cpm)			
BG01	150	400	200	250
BG02	100	250	200	180
BG03	450	350	300	360
BG04	6,000	6,500	6,000	6,200
BG05	8,000	7,000	8,500	7,800
BG11	45,000	45,000	40,000	43,300
BG12	37,500	35,000	32,500	35,000
BG13	400	425	450	425
BG14	125	100	125	120
BG15	150	125	100	120
BH01	250	450	500	400
BH02	10,000	10,000	20,000	13,300
BH03	20,000	20,000	25,000	21,700
BH04	9,000	20,000	8,000	12,300
BH05	20,000	20,000	15,000	18,600
BH11	40,000	40,000	40,000	40,000
BH12	47,500	50,000	50,000	49,200
BH13	25,000	25,000	25,000	25,000
BH14	75	125	125	110
BH15	100	125	100	110
BI01	9,500	9,500	9,500	9,500
BI02	25,000	25,000	20,000	23,300
BI03	50,000	30,000	45,000	41,700
BI04	25,000	30,000	20,000	25,000
BI05	7,000	20,000	25,000	17,300
BI11	35,000	35,000	32,500	34,200
BI12	40,000	40,000	40,000	40,000
BI13	25,000	40,000	40,000	35,000
BI14	2,500	2,750	2,000	2,310
BI15	100	100	100	100
BJ01	10,000	9,500	10,000	9,800
BJ02	25,000	30,000	25,000	26,700
BJ03	45,000	45,000	40,000	43,300

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BE12	150	100	100	120
BE13	50	100	100	90
BE14-BE15	(Less than 100 cpm)			
BF01	400	400	350	390
BF02	1,000	1,000	1,000	1,000
BF03	1,000	1,000	1,000	1,000
BF04	5,000	5,000	5,000	5,000
BF05	7,000	8,5000	7,500	7,700
BF11	200	175	175	180
BF12	100	125	100	110
BF13	100	50	100	80
BF14-BF15	(Less than 100 cpm)			
BG01	150	400	200	250
BG02	100	250	200	180
BG03	450	350	300	360
BG04	6,000	6,500	6,000	6,200
BG05	8,000	7,000	8,500	7,800
BG11	45,000	45,000	40,000	43,300
BG12	37,500	35,000	32,500	35,000
BG13	400	425	450	425
BG14	125	100	125	120
BG15	150	125	100	120
BH01	250	450	500	400
BH02	10,000	10,000	20,000	13,300
BH03	20,000	20,000	25,000	21,700
BH04	9,000	20,000	8,000	12,300
BH05	20,000	20,000	15,000	18,600
BH11	40,000	40,000	40,000	40,000
BH12	47,500	50,000	50,000	49,200
BH13	25,000	25,000	25,000	25,000
BH14	75	125	125	110
BH15	100	125	100	110
BI01	9,500	9,500	9,500	9,500
BI02	25,000	25,000	20,000	23,300
BI03	50,000	30,000	45,000	41,700
BI04	25,000	30,000	20,000	25,000
BI05	7,000	20,000	25,000	17,300
BI11	35,000	35,000	32,500	34,200
BI12	40,000	40,000	40,000	40,000
BI13	25,000	40,000	40,000	35,000
BI14	2,500	2,750	2,000	2,310
BI15	100	100	100	100
BJ01	10,000	9,500	10,000	9,800
BJ02	25,000	30,000	25,000	26,700
BJ03	45,000	45,000	40,000	43,300

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BJ04	8,000	8,000	20,000	12,000
BJ05	6,000	7,500	7,000	6,800
BJ11	30,000	32,500	30,000	30,800
BJ12	35,000	35,000	35,000	35,000
BJ13	30,000	32,500	27,500	30,000
BJ14	1,500	1,500	1,000	1,300
BJ15	350	375	350	360
BK01	40,000	45,000	40,000	41,000
BK02	50,000	60,000	70,000	60,000
BK03	60,000	55,000	50,000	55,000
BK04	9,500	9,000	8,000	8,850
BK05	6,500	7,500	5,000	6,300
BK06	6,000	6,000	6,500	6,200
BK07	3,000	4,500	5,000	4,200
BK08	6,000	7,000	5,000	6,000
BK09	10,000	20,000	20,000	16,700
BK10	10,000	15,000	15,000	13,300
BK11	20,000	25,000	27,500	24,200
BK12	30,000	30,000	30,000	30,000
BK13	25,000	25,000	25,000	25,000
BK14	8,750	8,000	7,500	8,400
BK15	1,000	300	400	470
BL01	50,000	50,000	45,000	48,300
BL02	55,000	45,000	40,000	46,700
BL03	55,000	65,000	60,000	60,000
BL04	7,500	6,500	6,000	6,700
BL05	3,500	7,000	7,500	6,000
BL06	4,000	4,500	5,000	4,500
BL07	2,000	4,000	4,000	3,300
BL08	7,500	8,000	6,000	7,200
BL09	7,500	5,000	2,500	5,000
BL10	7,000	7,750	5,000	6,580
BL11	20,000	20,000	12,500	17,500
BL12	22,500	15,000	15,000	17,500
BL13	20,000	20,000	20,000	20,000
BL14	5,750	5,750	6,500	6,000
BL15	1,500	1,500	1,250	1,400
BM01	40,000	50,000	60,000	50,000
BM02	35,000	30,000	35,000	33,300
BM03	90,000	70,000	55,000	71,700
BM04	8,500	9,000	8,000	8,500
BM05	4,500	5,000	4,500	4,700
BM06	4,000	4,500	4,500	4,300
BM07	5,000	5,500	4,500	5,000

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D- DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
BM08	4,000	7,500	7,000	6,200
BM09	5,500	7,000	7,000	6,500
BM10	7,250	6,500	7,500	7,400
BM11	12,500	12,500	12,500	12,500
BM12	15,000	17,500	22,500	18,300
BM13	25m000	20,000	20,000	21,700
BM14	6,750	7,000	7,000	6,900
BM15	2,000	2,500	2,000	2,200
BN01	80,000	85,000	80,000	81,700
BN02	60,000	95,000	95,000	83,300
BN03	30,000	35,000	35,000	33,300
BN04	6,000	7,500	8,500	7,300
BN05	5,000	5,500	5,000	5,200
BN06	5,500	6,000	6,000	5,800
BN07	5,500	6,000	7,000	6,200
BN08	7,750	7,000	7,500	7,350
BN09	4,500	4,750	3,500	4,250
BN10	5,750	6,500	5,250	5,850
BN11	7,500	7,000	6,500	7,000
BN12	15,000	15,000	12,500	14,200
BN13	17,500	17,500	17,500	17,500
BN14	9,000	12,500	10,000	10,300
BN15	3,000	2,500	2,500	2,700
BO01	100,000	100,000	100,000	100,000
BO02	55,000	60,000	55,000	56,700
BO03	25,000	25,000	20,000	23,300
BO04	8,000	7,000	6,000	7,000
BO05	4,500	4,500	4,000	4,300
BO06	6,000	6,500	7,000	6,500
BO07	6,000	5,500	5,500	5,700
BO08	4,500	5,000	5,000	4,800
BO09	3,750	3,750	3,500	3,700
BO10	4,500	5,000	5,500	5,000
BO11	5,500	5,000	6,000	5,500
BO12	12,500	12,500	12,500	12,500
BO13	9,500	9,750	15,000	11,400
BO14	15,000	15,000	15,000	15,000
BO15	3,250	3,500	4,000	3,600

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LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
CA01-CA17	(Less than 100 cpm)			
CB01-CB17	(Less than 100 cpm)			
CC01-CC17	(Less than 100 cpm)			
CD01-CD17	(Less than 100 cpm)			
CE01-CE17	(Less than 100 cpm)			
CF01-CF17	(Less than 100 cpm)			
CG01-CG12	(Less than 100 cpm)			
CG13	100	150	100	120
CG14-CG17	(Less than 100 cpm)			
CH01-CH12	(Less than 100 cpm)			
CH13	100	100	200	130
CH14	50	150	100	150
CH15-CH17	(Less than 100 cpm)			
CI01-CI02	(Less than 100 cpm)			
CI03	50	50	75	60
CI04	550	450	250	420
CI05-CI12	(Less than 100 cpm)			
CI13	125	100	150	125
CI14	100	150	100	120
CI15	100	150	50	100
CI16-CI17	(Less than 100 cpm)			
CJ01-CJ03	(Less than 100 cpm)			
CJ04	450	300	200	320
CJ05	650	750	650	680
CJ06-CJ12	(Less than 100 cpm)			
CJ13	100	150	100	120
CJ14-CJ17	(Less than 100 cpm)			
CK01-CK04	(Less than 100 cpm)			
CK05	6,500	6,750	7,250	6,800
CK13	150	75	100	120
CK14	100	100	100	100
CK15-CK17	(Less than 100 cpm)			
CL01	(Less than 100 cpm)			
CL02	200	200	175	190
CL03	150	150	150	150
CL04	150	300	150	200
CL05	15,000	15,000	12,500	14,200
CL13	150	100	150	130
CL14	100	150	100	120

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LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
CL15-CL17	(Less than 100 cpm)			
CM01-CM03	(Less than 100 cpm)			
CM04	100	100	100	100
CM05	20,000	20,000	20,000	20,000
CM06	55,000	60,000	55,000	56,700
CM07	6,000	4,750	6,000	5,660
CM08	6,000	5,500	7,000	6,300
CM09	6,000	5,500	5,500	5,800
CM10	2,500	2,500	2,500	2,500
CM11	5,000	5,000	5,000	5,000
CM12	3,000	2,750	3,750	3,200
CM13	150	150	100	130
M14	100	50	50	70
CM15-CM17	(Less than 100 cpm)			
CN01	150	100	100	120
CN02	100	100	100	100
CN03	100	125	75	100
CN04	100	50	100	90
CN05	40,000	37,500	40,000	39,200
CN06	30,000	30,000	25,000	28,300
CN07	7,500	7,000	8,250	7,600
CN08	5,000	4,750	4,500	4,750
CN09	3,000	3,000	3,250	3,100
CN10	1,750	1,750	2,000	1,800
CN11	3,500	3,500	3,500	3,500
CN12	1,500	1,500	1,500	1,500
CN13	450	500	550	500
CN14-CN17	(Less than 100 cpm)			
CO01-CO04	(Less than 100 cpm)			
CO05	65,000	65,000	65,000	65,000
CO06	55,000	60,000	60,000	58,300
CO07	50,000	50,000	50,000	50,000
CO08	4,000	4,250	4,000	4,100
CO09	2,000	1,750	2,000	1,900
CO10	1,500	1,500	1,750	1,600
CO11	2,250	2,500	2,500	2,400
CO12	725	950	1,500	1,050
CO13	500	500	575	520
CO14	100	150	150	130
CO15-CO17	(Less than 100 cpm)			
CP01-CP03	(Less than 100 cpm)			
CP04	850	350	75	260
CP05	80,000	82,500	80,000	80,800
CP06	10,000	12,500	10,000	10,800
CP07	6,250	7,250	6,750	6,750
CP08	4,000	3,250	4,000	3,750

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION "C" GRID ARRAY

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
CP09	2,500	2,000	2, 00	2,300
CP10	1,500	1,750	2,000	1,750
CP11	2,500	2,000	2,000	2,100
CP12	750	750	900	800
CP13	350	500	450	440
CP14	250	350	250	280
CP15	100	75	150	110
CP16-CP17	(Less than 100 cpm)			
CQ01	100	100	100	100
CQ02	150	100	125	125
CQ03-CQ04	(Less than 100 cpm)			
CQ05	50,000	50,000	45,000	48,300
CQ06	6,500	5,500	5,500	5,800
CQ07	5,000	5,000	4,500	4,800
CQ08	3,500	3,000	3,500	3,300
CQ09	2,500	2,500	2,500	2,500
CQ10	1,500	2,000	1,500	1,700
BQ11	1,500	2,000	1,500	1,700
CQ12	900	950	900	920
CQ13	400	450	550	470
CQ14-CQ17	(Less than 100 cpm)			

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION ARC "B"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
001-012	(Less than 100 cpm)			
013	250	200	150	200
014	500	2,000	500	1,000
015	9,500	8,500	6,000	8,000
016	20,000	20,000	20,000	20,000
017	30,000	30,000	30,000	30,000
018	30,000	30,000	30,000	30,000
019	45,000	45,000	45,000	45,000
020	50,000	50,000	45,000	48,300
021	55,000	55,000	60,000	56,700
022	55,000	55,000	60,000	56,700
023	50,000	50,000	50,000	50,000
024	35,000	35,000	40,000	36,700
025	30,000	30,000	35,000	31,700
026	25,000	25,000	25,000	25,000
027	15,000	15,000	15,000	15,000
028	15,000	20,000	20,000	18,300
029	9,000	15,000	10,000	11,300
030	5,000	7,500	8,500	7,000
031	6,500	7,000	6,000	6,500
032	4,500	4,500	5,000	4,700
033	3,500	3,500	4,000	3,700
034	3,500	3,000	4,000	3,500
035	3,000	3,000	3,000	3,000
036	3,000	2,500	3,000	2,800
037	2,500	2,500	2,500	2,500
038	2,500	3,500	3,000	3,000
039	3,000	2,500	2,500	2,700
040	3,000	3,000	2,500	2,800
045	2,500	2,500	2,500	2,500
050	2,000	2,000	2,500	2,200
055	1,500	1,500	1,500	1,500
060	2,000	1,000	1,000	1,300
065	1,500	1,000	1,000	1,000
070	900	1,500	1,500	1,300
075	700	900	800	800
080	950	950	750	880
085	800	750	750	770
090	400	650	500	520
095	200	200	250	220
100	150	150	150	150
105	100	50	150	100
110	---	---	---	---
115	---	---	---	---
120	---	---	---	---

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D- DAY

LOCATION ARC "C"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-016	(Less than 100 cpm)			
017	50	200	125	125
018	700	100	100	300
019	1,250	1,250	1,250	1,250
020	7,500	9,000	7,500	8,000
021	22,500	20,000	20,000	20,800
022	30,000	25,000	30,000	28,300
023	50,000	45,000	45,000	46,700
024	50,000	55,000	50,000	51,700
025	65,000	65,000	65,000	65,000
026	60,000	65,000	60,000	61,700
027	60,000	65,000	60,000	61,700
028	55,000	50,000	50,000	51,700
029	40,000	45,000	40,000	41,700
030	22,500	25,000	25,000	24,200
031	20,000	20,000	20,000	20,000
032	22,500	20,000	20,000	20,800
033	15,000	15,000	9,000	13,000
034	7,000	7,000	7,000	7,000
035	5,000	5,500	5,500	5,300
040	450	450	550	480
045	650	600	550	600
050	700	750	700	720
055	800	800	800	800
060	600	750	700	680
065	400	500	550	480
070	400	450	500	450
075	450	450	450	450
080	450	500	450	470
085	450	450	450	450
090	250	250	250	250
095	100	100	150	120
100	---	---	---	---
105	---	---	---	---
110	---	---	---	---
115	---	---	---	---
120	---	---	---	---

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION ARC "D"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
001-020	(Less than 100 cpm)			
021	400	200	200	260
022	3,000	2,500	2,500	2,700
023	4,500	5,000	4,500	4,700
024	6,500	7,000	7,500	7,000
025	15,000	10,000	10,000	11,700
026	20,000	20,000	15,000	18,300
027	30,000	35,000	30,000	31,700
028	50,000	45,000	45,000	46,700
029	60,000	55,000	50,000	55,000
030	50,000	55,000	50,000	51,700
031	50,000	50,000	45,000	48,300
032	45,000	45,000	40,000	43,300
033	35,000	45,000	35,000	38,300
034	35,000	30,000	30,000	31,700
035	25,000	25,000	25,000	25,000
036	25,000	20,000	20,000	21,700
037	10,000	10,000	10,000	10,000
038	6,000	6,500	6,000	6,200
039	5,500	4,500	5,000	5,000
040	3,000	2,500	3,500	3,000
045	1,500	1,500	700	930
050	300	250	250	270
055	300	150	300	250
060	350	200	200	250
065	300	250	350	300
070	300	500	400	400
075	400	350	450	400
080	250	250	300	270
085	200	150	200	180
090	100	150	100	120
095	100	100	100	100
100	50	50	50	50
105	50	50	---	30
110	---	---	---	---
115	---	---	---	---
120	---	---	---	---

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION ARC "E"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
001-023	(Less than 100 cpm)			
024	450	350	600	
025	2,000	2,000	1,500	1,800
026	3,500	4,000	4,000	5,800
027	6,500	6,000	6,000	6,180
028	9,000	9,000	9,500	9,180
029	20,000	20,000	20,000	20,000
030	35,000	30,000	35,000	33,300
031	25,000	25,000	25,000	25,000
032	30,000	30,000	30,000	30,000
033	20,000	15,000	20,000	18,300
034	25,000	25,000	25,000	25,000
035	30,000	30,000	25,000	28,300
036	25,000	27,500	25,000	25,800
037	15,000	17,500	17,500	16,700
038	8,000	8,000	9,500	8,500
039	4,500	5,500	5,000	5,000
040	4,000	3,000	4,000	3,700
041-043	(Less than 100 cpm)			
044	1,500	1,500	1,500	1,500
045	750	1,000	800	850
050	250	350	350	320
055	100	150	200	150
060	150	150	175	160
065	150	200	200	180
070	200	250	150	200
075	150	150	150	150
080	200	200	150	180
085	125	100	150	120
090	150	100	100	110
091-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D- DAY

LOCATION ARC "F"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-026	(Less than 100 cpm)			
027	250	250	250	250
028	1,250	1,250	1,500	1,340
029	5,000	5,000	5,000	5,000
030	15,000	15,000	12,500	14,200
031	25,000	22,500	20,000	22,500
032	35,000	35,000	35,000	35,000
033	35,000	30,000	30,000	31,700
034	35,000	35,000	30,000	33,300
035	35,000	35,000	30,000	33,300
036	30,000	30,000	35,000	31,700
037	30,000	35,000	35,000	33,300
038	25,000	22,500	22,500	23,300
039	9,500	15,000	15,000	13,200
040	7,500	7,500	7,500	7,500
041	55,500	6,000	6,000	5,800
042	3,000	3,000	3,000	3,000
043	3,500	3,500	3,500	3,500
045	1,500	1,500	1,500	1,500
050	700	650	700	680
055	200	200	150	180
060	100	200	150	150
065	200	250	200	220
070	200	300	300	270
075	200	200	200	200
080	100	150	150	130
085	100	100	100	100
090-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION ARC "G"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-026	(Less than 100 cpm)			
027	100	100	100	100
028	300	300	250	280
029	1,500	1,500	1,500	1,500
030	4,500	5,000	4,000	4,500
031	10,000	10,000	10,000	10,000
032	15,000	15,000	15,000	15,000
033	20,000	25,000	25,000	23,300
034	20,000	20,000	20,000	20,000
035	20,000	20,000	25,000	21,700
036	20,000	20,000	20,000	20,000
037	20,000	15,000	20,000	18,300
038	15,000	15,000	15,000	15,000
039	9,500	9,000	9,500	9,300
040	5,500	6,000	5,500	5,800
045	2,000	2,000	2,000	2,000
050	500	500	600	530
055	100	100	100	100
060	100	100	100	100
065	100	100	150	120
070	125	125	125	125
075	100	100	100	100
080	100	100	100	100
085-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D- DAY

LOCATION ARC "H"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-028	(Less than 100 cpm)			
029	450	450	500	470
030	2,000	2,000	2,000	2,000
031	5,000	5,000	4,500	4,800
032	9,000	8,500	7,000	8,170
033	15,000	15,000	15,000	15,000
034	25,000	25,000	20,000	23,300
035	15,000	15,000	15,000	15,000
036	15,000	15,000	15,000	15,000
037	15,000	15,000	15,000	15,000
038	15,000	10,000	10,000	11,700
039	6,500	7,000	7,500	7,000
040	6,500	6,000	6,000	6,200
041	5,000	5,000	5,000	5,000
042	4,500	4,000	4,500	4,300
043	3,000	4,000	4,000	3,700
044	2,500	2,500	3,000	2,670
045	2,000	2,500	2,500	2,300
046	1,500	1,500	1,500	1,500
047	1,000	1,000	1,000	1,000
048	850	950	950	920
049	800	650	650	760
050	450	550	500	500
055-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D- DAY

LOCATION ARC "I"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-028	(Less than 100 cpm)			
029	200	300	190	230
030	700	650	575	640
031	1,250	1,100	1,100	1,150
032	3,000	3,400	2,750	3,050
033	8,250	7,500	7,000	7,600
034	11,500	11,500	12,000	11,800
035	14,500	15,000	14,000	14,500
036	15,000	15,000	14,500	14,800
037	13,500	13,500	14,500	13,800
038	12,000	12,000	12,000	12,000
039	8,250	8,000	7,800	8,000
040	6,250	7,250	7,500	7,000
041	5,000	6,000	6,800	5,900
042	5,000	4,600	6,500	5,400
043	3,500	4,250	4,700	4,150
044	3,250	3,500	3,400	3,400
045	2,550	3,000	3,000	2,800
050	650	570	650	625
055	125	175	175	125
060-069	(Less than 100 cpm)			
070	110	90	100	100
071-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D- DAY

LOCATION ARC "J"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-026	(Less than 100 cpm)			
027	100	100	100	100
028	50	50	50	50
029	50	50	50	50
030	250	300	250	270
031	500	500	500	500
032	1,000	1,500	1,500	1,330
033	3,000	3,000	3,000	3,000
034	10,000	10,000	10,000	10,000
035	10,000	10,000	10,000	10,000
036	9,000	9,000	8,500	8,700
037	4,500	4,500	4,000	4,300
038	8,500	8,500	8,500	8,500
039	6,000	6,000	6,000	6,000
040	6,000	6,000	6,000	6,000
041	4,000	4,500	4,500	4,300
042	3,500	3,500	4,000	3,800
043	3,500	3,500	3,500	3,500
044	3,000	3,000	2,500	2,700
045	2,000	2,000	2,000	2,000
050	600	450	500	520
055	150	150	150	150
056-120	(Less than 100 cpm)			

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION ARC "K"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000-029	(Less than 100 cpm)			
030	100	100	100	100
031	450	450	500	470
032	1,500	2,000	1,500	1,700
033	4,500	5,500	5,500	5,160
034	7,000	8,000	8,000	7,600
035	7,500	8,000	8,000	7,730
036	7,500	7,000	7,000	7,160
037	7,500	7,500	7,500	7,500
038	6,500	6,000	6,000	6,700
039	5,000	5,000	5,000	5,000
040	5,000	4,000	4,000	4,300
041	4,000	3,000	3,000	3,300
042	2,500	2,500	3,000	2,660
043	2,500	2,500	2,000	2,300
044	2,000	2,000	2,000	2,000
045	1,500	1,500	1,500	1,500
046	850	800	800	820
047	700	700	700	700
048	450	600	650	570
049	450	450	500	470
050	200	300	300	260
051	200	200	200	200
052	150	150	150	150
053-120	(Less than 100 cpM)			

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D- DAY

LOCATION ARC "L"

STATION NUMBER	PAC-3G READINGS (CPM)			MEAN READING
	1	2	3	
000- 031	(Less than 100 cpm)			
032	500	250	350	360
033	1,250	1,000	1,000	1,090
034	3,000	3,000	2,500	2,900
035	5,250	5,500	5,000	5,250
036	5,250	5,750	5,000	5,300
037	4,500	5,250	4,750	4,850
038	4,250	4,000	4,000	4,100
039	3,750	3,750	3,500	3,600
040	3,750	3,750	3,500	3,600
041	2,750	3,500	3,500	3,300
042	4,000	3,000	3,000	3,300
043	2,500	2,000	2,000	2,170
044	2,000	1,500	1,750	1,750
045	1,500	1,750	1,250	1,500
046	800	900	825	840
047	450	600	650	560
048	500	575	575	550
049	500	400	400	430
050	500	325	400	400
055	100	150	100	120
060-120	(Less than 100 cpm)			

APPENDIX B

SUMMARY OF RAW DATA (FILTER DISC SURVEY)

This is a compilation of data resulting from filter disc survey procedures. Each filter disc that was recovered was counted for one minute in the Eberline SAC-3 as a cross checking procedure for alpha survey. The close correlation of this data with alpha survey, and the added interest in determination of an adequate fallout sample size, has prompted the inclusion of this data for further evaluation, if desired.

FILTER DISC SURVEY DATA

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D- DAY

LOCATION "A" GRID ARRAY

STATION NUMBER	SAC-3 CPM
AA-01	3
02	0
03	7
04	3
05	1
06	2
07	4
08	5
09	7
10	2
11	3
AB-01	3
02	5
03	3
04	6
05	4
06	4
07	5
08	6
09	3
10	20
11	2
AC-01	4
02	4
03	6
04	6
05	4
06	7
07	5
08	4
09	5
10	2
11	2
AD-01	1
02	1
03	3
04	0
05	1866
06	8
07	0
08	6
09	7
10	3
11	5

STATION NUMBER	SAC-3 CPM
AE-01	3
02	4
03	5
04	6
05	15
06	63
07	32
08	6
09	4858
10	8
11	3
AF-01	83
02	285
03	308
04	1263
05	1831803
06	GZ
07	1859
08	9
09	8
10	13
11	3
AG-01	31
02	4
03	271
04	37
05	162646
06	15420
07	640
08	16
09	0
10	93
11	39
AH-01	104
02	85
03	3
04	3
05	188
06	22905
07	322
08	4
09	1
10	19
11	51

STATION NUMBER	SAC-3 CPM
AI-01	6
02	9
03	849
04	0
05	83
06	8782
07	388
08	15
09	0
10	1
11	4
AF-01	106
02	0
03	65
04	6
05	10
06	534
07	487
08	99
09	2
10	0
11	4
AK-01	0
02	0
03	4
04	4
05	77
06	207
07	3045
08	20
09	8
10	29
11	2

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D- DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	SAC-3 CPM
BA-01	1
02	1
03	1
04	1
05	2
06	1
07	0
08	3
09	1
10	0
11	3
12	1
13	1
14	1
15	2
BB-01	3
02	0
03	0
04	3
05	0
06	0
07	3
08	1
09	1
10	1
11	1
12	1
13	1
14	4
15	3
BC-01	2
02	8
03	3
04	1
05	4
06	4
07	1
08	1
09	5
10	6
11	4
12	4
13	3
14	0
15	8

STATION NUMBER	SAC-3 CPM
BD-01	1
02	0
03	3
04	2
05	2
06	2
07	1
08	1
09	2
10	1
11	2
12	2
13	2
14	3
15	4
BE-01	1
02	0
03	1
04	5
05	2
06	3
07	1
08	0
09	0
10	2
11	1
12	1
13	4
14	4
15	2
BF-01	1
02	3
03	1
04	3
05	1
11	2
12	2
13	0
14	3
15	3
	12

STATION NUMBER	SAC-3 CPM
BG-01	3
02	1
03	4
04	3
05	5
11	2
12	2
13	4
14	2
15	1
BH-01	3
02	3
03	1
04	4
05	1
11	2
12	2
13	1
14	2
15	4
BK-01	1
02	4
03	1
04	0
05	4
06	3
07	46
08	12
09	246
10	3
11	1
12	757
13	2
14	2
15	3
BL-01	1
02	3
03	0
04	1
05	0
11	1
1	
13	2
14	0
15	3

EVENT: DOUBLE TRACKS D-DAY DATE 15 MAY 1963

LOCATION "B" GRID ARRAY (Cont.)

STATION NUMBER	SAC-3 CPM
BJ-01	5
02	3
03	1
04	1
05	2
11	3
12	1
13	1
14	2
15	4
BL-01	1
02	2
03	0
04	2
05	18
06	2
07	28
08	19
09	134
10	0
11	2
12	4
13	1
14	0
15	1
BM-01	1
02	4
03	2
04	4
05	0
06	3
07	8
08	0
09	1430
10	0
11	2
12	3
13	3
14	1

STATION NUMBER	SAC-3 CPM
BN-01	2
02	1
03	5
04	1
05	2
06	4
07	18
08	4
09	1088
10	4
11	1
12	3
13	2
14	1
15	0
BO-01	1
02	5
03	7
04	1
05	2
06	3
07	5
08	5
09	872
10	4
11	5
12	3
13	2
14	5
15	3

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D- DAY

LOCATION "C" GRID ARRAY

STATION NUMBER	SAC-3 CPM
CI-01	0
02	0
03	0
04	0
05	0
13	0
14	0
15	0
16	0
17	0
CJ-01	0
02	0
03	0
04	1
05	11
13	15
14	12
15	11
16	5
17	0
CK-01	2
02	7
03	6
04	6
05	0
13	60
14	2
15	4
16	1
17	0
CL-01	27
02	15
03	4
04	5
05	0
13	2
14	2
15	4
16	0
17	3

STATION NUMBER	SAC-3 CPM
CM-01	9
02	4
03	4
04	0
05	2
06	0
07	6
08	2
09	3
10	68
11	8
12	8
13	1
14	3
15	15
16	1
17	5
CN-01	3
02	8
03	5
04	6
05	2
06	1
07	10
08	1
09	1
10	80
11	1
12	5
13	3
14	34
15	6
16	3
17	4
CO-01	2
02	7
03	443
04	13
05	6
06	0
07	2
08	4
09	14
10	427
11	5
12	4

STATION NUMBER	SAC-3 CPM
CO-13	2
14	2
15	2
16	2
17	2
CP-03	1
04	4
05	5
06	3
07	6
08	4
09	243
10	857
11	1
12	0
13	2
14	1
15	2
CQ-05	4
06	6
07	2
08	1
09	7
10	355
11	3
12	3
13	3

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D- DAY

LOCATION "B" ARC

STATION NUMBER	SAC-3 CPM
000	0
01	7
02	0
03	5
04	0
05	9
06	0
07	3
08	0
09	2
10	0
11	4
12	0
13	3
14	4
15	3
16	0
17	2
18	0
19	5
20	0
21	3
22	0
23	1
24	0
25	3
26	0
27	1
28	0
29	1
30	0
31	1
32	3
33	6
34	0
35	1
36	0
37	4
38	0
39	2
40	0
41	4
42	0
43	3
44	0
45	7
46	1
47	1
48	0

STATION NUMBER	SAC-3 CPM
49	4
50	0
51	0
52	5
53	0
54	7
55	3
56	4
57	2
58	0
59	20
60	5
61	103
62	45
63	539
64	149
65	200
66	149
67	1399
68	394
69	1
70	464
71	474
72	423
73	225
74	77
75	109
76	7
77	8
78	0
79	2
80	0
81	5
82	0
83	5
84	0
85	2
86	0
87	4
88	15
89	0
90	0
91	4
92	7
93	0
94	4
95	0
96	0
97	0

STATION NUMBER	SAC-3 CPM
98	0
99	0
100	0
101	19
102	2
103	0
104	0
105	7
106	4
107	0
108	3
109	0
110	0
111	3
112	0
113	0
114	3
115	0
116	2
117	5
118	0
119	0
120	0

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LOCATION "C" ARC

STATION NUMBER	SAC-3 CPM
000	0
01	0
02	0
03	0
04	0
05	3
06	4
07	1
08	0
09	3
10	4
11	2
12	2
13	0
14	2
15	0
16	3
17	3
18	4
19	4
20	0
21	0
22	1
23	0
24	0
25	0
26	3
27	0
28	6
29	0
30	4
31	4
32	2
33	2
34	2
35	35
36	3
37	2
38	4
39	2
40	3
41	2
42	4
43	1
44	50
45	49
46	58
47	1
48	1
49	2

STATION NUMBER	SAC-3 CPM
50	36
51	197
52	18
53	60
54	158
55	217
56	81
57	10
58	176
59	35
60	145
61	163
62	569
63	190
64	56
65	181
66	32
67	115
68	128
69	236
70	494
71	112
72	38
73	31
74	9
75	10
76	1
77	2
78	0
79	0
80	3
81	0
82	0
83	0
84	0
85	0
86	6
87	0
88	0
89	0
90	0
91	0
92	0
93	0
94	0
95	0
96	0
97	0
98	0
99	4

STATION NUMBER	SAC-3 CPM
100	0
101	0
102	0
103	0
104	0
105	0
106	0
107	0
108	0
109	0
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	0

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LOCATION "D" ARC

STATION NUMBER	SAC-3 CPM
000	6
1	4
2	0
3	6
4	5
5	8
6	0
7	5
8	6
9	5
10	0
11	3
12	8
13	8
14	6
15	0
16	5
17	5
18	6
19	4
20	6
21	6
22	4
23	7
24	4
25	9
26	9
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	2
35	2
36	0
37	3
38	5
39	2
40	5
41	2
42	2
43	3
44	4
45	28
46	4
47	1
48	183

STATION NUMBER	SAC-3 CPM
49	161
50	61
51	90
52	186
53	314
54	70
55	96
56	6
57	162
58	194
59	279
60	260
61	54
62	500
63	57
64	390
65	593
66	480
67	172
68	132
69	184
70	169
71	147
72	52
73	54
74	43
75	46
76	48
77	44
78	0
79	2
80	0
81	0
82	0
83	0
84	2
85	0
86	3
87	2
88	1
89	3
90	0
91	0
92	0
93	3
94	3
95	0
96	0
97	0
98	0

STATION NUMBER	SAC-3 CPM
99	3
100	0
101	0
102	0
103	2
104	0
105	1
106	0
107	0
108	0
109	0
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	0

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D- DAY

LOCATION "E" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	1
2	0
3	1
4	0
5	1
6	0
7	0
8	0
9	2
10	0
11	0
12	0
13	1
14	2
15	1
16	2
17	0
18	1
19	0
20	0
21	0
22	0
23	1
24	1
25	1
26	1
27	0
28	1
29	0
30	0
31	0
32	0
33	1
34	0
35	3
36	0
37	0
38	0
39	1
40	1
41	3
42	0
43	148
44	122
45	244
46	97
47	102

STATION NUMBER	SAC-3 CPM
48	660
49	1224
50	780
51	56
52	653
53	76
54	1177
55	205
56	0
57	403
58	149
59	304
60	2
61	77
62	387
63	177
64	192
65	533
66	309
67	598
68	460
69	201
70	237
71	13
72	2
73	1
74	1
75	0
76	0
77	2
78	0
79	0
80	0
81	0
82	0
83	0
84	0
85	1
86	0
87	1
88	0
89	0
90	0
91	1
92	0
93	0
94	0
95	0

STATION NUMBER	SAC-3 CPM
96	0
97	0
98	0
99	0
100	0
101	1
102	0
103	0
104	1
105	1
106	0
107	0
108	0
109	0
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	2

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LOCATION "F" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	0
35	0
36	0
37	4
38	0
39	0
40	0
41	0
42	25
43	189
44	8
45	232
46	57
47	88
48	109

STATION NUMBER	SAC-3 CPM
49	339
50	429
51	1526
52	13
53	283
54	27
55	50
56	1914
57	1402
58	336
59	18
60	83
61	121
62	63
63	34
64	130
65	449
66	418
67	667
68	131
69	26
70	10
71	8
72	5
73	4
74	0
75	0
76	0
77	0
78	0
79	0
80	0
81	0
82	0
83	0
84	0
85	0
86	0
87	0
88	0
89	0
90	0
91	0
92	0
93	0
94	0
95	0
96	0
97	0
98	0

STATION NUMBER	SAC-3 CPM
99	0
100	0
101	0
102	0
103	0
104	0
105	0
106	0
107	3
108	0
109	0
110	4
111	0
112	1
113	1
114	1
115	1
116	0
117	0
118	1
119	1
120	1

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LOCATION "G" ARC

STATION NUMBER	SAC-3 CPM
000	1
1	0
2	0
3	1
4	0
5	0
6	0
7	1
8	0
9	0
10	0
11	1
12	0
13	0
14	0
15	0
16	0
17	1
18	0
19	0
20	0
21	0
22	1
23	0
24	2
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	1
35	2
36	89
37	53
38	3
39	4
40	7
41	140
42	17
43	26
44	883
45	138
46	330
47	452
48	268

STATION NUMBER	SAC-3 CPM
49	353
50	126
51	706
52	1038
53	584
54	359
55	464
56	400
57	161
58	122
59	87
60	29
61	67
62	462
63	472
64	275
65	283
66	587
67	31
68	9
69	6
70	16
71	32
72	48
73	38
74	3
75	1
76	27
77	3
78	2
79	0
80	1
81	7
82	0
83	0
84	0
85	27
86	0
87	5
88	0
89	4
90	0
91	0
92	0
93	0
94	0
95	0
96	0
97	2

STATION NUMBER	SAC-3 CPM
98	0
99	0
100	0
101	4
102	6
103	0
104	6
105	7
106	5
107	1
108	1
109	0
110	4
111	0
112	3
113	0
114	1
115	0
116	0
117	0
118	0
119	0
120	0

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LOCATION "H" ARC

STATION NUMBER	SAC-3 CPM
000	2
1	1
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	3
32	4
33	0
34	1
35	2
36	1
37	0
38	1
39	0
40	173
41	20
42	657
43	139
44	62
45	237
46	2515
47	341
48	214

STATION NUMBER	SAC-3 CPM
49	269
50	684
51	17
52	830
53	325
54	295
55	387
56	34
57	316
58	95
59	58
60	55
61	78
62	97
63	87
64	6
65	17
66	21
67	5
68	54
69	6
70	7
71	0
72	0
73	0
74	0
75	0
76	0
77	0
78	0
79	0
80	0
81	0
82	0
83	0
84	0
85	0
86	0
87	0
88	0
89	0
90	0
91	4
92	4
93	2
94	1
95	3
96	6
97	0

STATION NUMBER	SAC-3 CPM
98	6
99	2
100	4
101	0
102	2
103	0
104	0
105	8
106	0
107	0
108	0
109	0
110	1
111	0
112	4
113	4
114	1
115	5
116	3
117	3
118	7
119	5
120	2

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LOCATION "I" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	5
11	0
12	0
13	0
14	0
15	4
16	0
17	0
18	0
19	3
20	0
21	0
22	1
23	0
24	0
25	0
26	0
27	0
28	0
29	1
30	1
31	0
32	2
33	0
34	3
35	1
36	1
37	175
38	0
39	35
40	3
41	106
42	101
43	144
44	340
45	228
46	40
47	759
48	2215
49	474

STATION NUMBER	SAC-3 CPM
50	1942
51	716
52	440
53	453
54	424
55	826
56	304
57	444
58	569
59	493
60	63
61	504
62	304
63	70
64	48
65	7
66	31
67	5
68	0
69	0
70	0
71	1
72	0
73	00
74	21
75	0
76	0
77	0
78	0
79	0
80	0
81	0
82	1
83	0
84	1
85	0
86	2
87	0
88	1
89	0
90	0
91	0
92	0
93	3
94	1
95	0
96	0
97	0
98	0
99	1

STATION NUMBER	SAC-3 CPM
100	3
101	0
102	1
103	0
104	0
105	5
106	0
107	0
108	0
109	0
110	1
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	0

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LOCATION "J" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	2
3	0
4	0
5	0
6	1
7	0
8	1
9	0
10	3
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	2
19	0
20	0
21	0
22	0
23	1
24	0
25	2
26	2
27	3
28	4
29	4
30	1
31	4
32	1
33	1
34	2
35	18
36	3
37	492
38	54
39	8
40	3
41	25
42	67
43	279
44	1797
45	117
46	781
47	360
48	463

STATION NUMBER	SAC-3 CPM
49	33
50	543
51	1054
52	1093
53	289
54	353
55	313
56	251
57	413
58	142
59	121
60	530
61	221
62	175
63	50
64	8
65	19
66	20
67	10
68	2
69	0
70	0
71	3
72	5
73	0
74	3
75	8
76	9
77	16
78	13
79	0
80	0
81	1
82	11
83	0
84	8
85	0
86	0
87	18
88	0
89	20
90	0
91	1
92	2
93	16
94	6
95	0
96	1

STATION NUMBER	SAC-3 CPM
97	4
98	2
99	0
100	15
101	0
102	0
103	2
104	0
105	12
106	10
107	2
108	8
109	1
110	0
111	3
112	0
113	114
114	0
115	16
116	2
117	0
118	0
119	0
120	12

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LOCATION "K" ARC

STATION NUMBER	SAC-3 CPM
000	6
1	0
2	0
3	0
4	4
5	2
6	1
7	0
8	5
9	5
10	0
11	0
12	2
13	0
14	3
15	7
16	0
17	0
18	0
19	2
20	0
21	0
22	6
23	3
24	3
25	1
26	0
27	0
28	0
29	4
30	4
31	4
32	0
33	5
34	7
35	3
36	1
37	1
38	3
39	60
40	33
41	2
42	45
43	0
44	214
45	6
46	199
47	1184
48	201

STATION NUMBER	SAC-3 CPM
49	1162
50	2
51	158
52	49
53	483
54	677
55	5
56	149
57	84
58	31
59	541
60	24
61	121
62	175
63	40
64	15
65	31
66	10
67	17
68	4
69	0
70	0
71	0
72	0
73	0
74	0
75	0
76	0
77	0
78	0
79	0
80	0
81	2
82	3
83	2
84	0
85	0
86	2
87	4
88	3
89	0
90	0
91	0
92	0
93	0
94	2
95	0
96	0

STATION NUMBER	SAC-3 CPM
97	0
98	0
99	2
100	6
101	0
102	0
103	2
104	4
105	0
106	1
107	0
108	3
109	0
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	3

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D- DAY

LOCATION "L" ARC

STATION NUMBER	SAC-3 CPM
000	6
1	9
2	0
3	7
4	10
5	5
6	10
7	15
8	5
9	3
10	1
11	6
12	4
13	5
14	3
15	0
16	152
17	0
18	10
19	0
20	1
21	2
22	1
23	8
24	0
25	0
26	8
27	0
28	8
29	0
30	0
31	5
32	5
33	1
34	126
35	4
36	7
37	9
38	5
39	502
40	0
41	67
42	265
43	348
44	3
45	5
46	874
47	349
48	802

STATION NUMBER	SAC-3 CPM
49	35
50	2575
51	1180
52	61
53	23
54	1841
55	781
56	241
57	956
58	85
59	0
60	106
61	111
62	0
63	0
64	113
65	12
66	77
67	20
68	12
69	18
70	2
71	0
72	0
73	5
74	3
75	2
76	0
77	11
78	0
79	4
80	3
81	0
82	4
83	0
84	4
85	0
86	2
87	5
88	3
89	16
90	5
91	7
92	7
93	6
94	0
95	3
96	0

STATION NUMBER	SAC-3 CPM
97	1
98	5
99	2
100	5
101	0
102	6
103	1
104	0
105	3
106	1
107	11
108	0
109	0
110	5
111	0
112	2
113	1
114	4
115	0
116	0
117	0
118	0
119	7
120	6

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D-DAY

LOCATION "M" ARC

STATION NUMBER	SAC-3 CPM
000	3
1	1
2	3
3	34
4	1
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	18
19	0
20	0
21	0
22	0
23	0
24	0
25	1
26	4
27	0
28	59
29	0
30	0
31	0
32	0
33	6
34	38
35	18
36	125
37	1144
38	12
39	60
40	4
41	1
42	110
43	0
44	0
45	2
46	0
47	77

STATION NUMBER	SAC-3 CPM
48	693
49	51
50	276
51	728
52	1
53	119
54	1328
55	2
56	2
57	440
58	19
59	4
60	0
61	1
62	710
63	171
64	0
65	13
66	88
67	0
68	14
69	2
70	2
71	21
72	65
73	1
74	3
75	0
76	1
77	1
78	0
79	7
80	1
81	1
82	0
83	0
84	0
85	0
86	2
87	0
88	0
89	0
90	0
91	0
92	0
93	0
94	0
95	0

STATION NUMBER	SAC-3 CPM
96	0
97	1
98	0
99	0
100	0
101	0
102	0
103	1
104	2
105	0
106	0
107	0
108	0
109	1
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	1

EVENT: DOUBLE TRACKS DATE 15 MAY 1963 D- DAY

LOCATION "N" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	1
12	1
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	3
35	154
36	0
37	0
38	0
39	650
40	199
41	154
42	417
43	763
44	306
45	880
46	231
47	1330
48	0

STATION NUMBER	SAC-3 CPM
49	274
50	122
51	451
52	271
53	0
54	194
55	19
56	0
57	376
58	0
59	158
60	0
61	0
62	82
63	108
64	0
65	30
66	57
67	7
68	2
69	1
70	54
71	8
72	44
73	4
74	9
75	9
76	6
77	0
78	4
79	3
80	4
81	1
82	0
83	0
84	0
85	0
86	0
87	0
88	0
89	0
90	0
91	0
92	0
93	0
94	0
95	0
96	0
97	0

STATION NUMBER	SAC-3 CPM
98	0
99	0
100	0
101	0
102	0
103	0
104	0
105	0
106	0
107	0
108	0
109	0
110	0
111	0
112	0
113	0
114	4
115	3
116	0
117	1
118	0
119	0
120	0

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LOCATION "O" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	1
2	0
3	0
4	0
5	2
6	0
7	2
8	0
9	0
10	0
11	0
12	3
13	0
14	0
15	3
16	0
17	0
18	0
19	0
20	0
21	12
22	3
23	4
24	2
25	6
26	0
27	3
28	0
29	5
30	5
31	3
32	0
33	0
34	0
35	2
36	3
37	51
38	8
39	5
40	406
41	12
42	482
43	139
44	9
45	753
46	137
47	4
48	201

STATION NUMBER	SAC-3 CPM
49	2
50	74
51	150
52	16
53	0
54	369
55	11
56	41
57	49
58	91
59	0
60	0
61	0
62	1
63	33
64	24
65	4
66	58
67	4
68	140
69	29
70	0
71	34
72	7
73	2
74	0
75	5
76	0
77	0
78	1
79	0
80	3
81	0
82	0
83	0
84	0
85	3
86	0
87	0
88	0
89	0
90	2
91	0
92	0
93	0
94	22
95	0
96	4
97	3

STATION NUMBER	SAC-3 CPM
98	0
99	2
100	3
101	0
102	0
103	0
104	0
105	0
106	1
107	0
108	0
109	0
110	1
111	0
112	1
113	1
114	0
115	3
116	0
117	0
118	2
119	0
120	0

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LOCATION "P" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	5
14	0
15	5
16	3
17	3
18	2
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	434
32	0
33	0
34	0
35	75
36	0
37	99
38	0
39	10
40	177
41	931
42	140
43	323
44	239
45	257
46	5
47	6
48	4

STATION NUMBER	SAC-3 CPM
49	3
50	40
51	0
52	33
53	53
54	19
55	11
56	36
57	107
58	104
59	0
60	28
61	51
62	10
63	25
64	89
65	96
66	8
67	0
68	2
69	1
70	2
71	0
72	1
73	0
73	12
75	49
76	1
77	0
78	0
79	9
80	0
81	30
82	0
83	0
84	0
85	0
86	0
87	0
88	0
89	0
90	0
91	0
92	0
93	2
94	0
95	0
96	0

STATION NUMBER	SAC-3 CPM
97	0
98	0
99	0
100	0
101	0
102	0
103	0
104	0
105	0
106	0
107	0
108	2
109	0
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	0

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LOCATION "Q" ARC

STATION NUMBER	SAC-3 CPM
000	2
1 1	0
2	5
3	0
4	4
5	5
6	3
7	0
8	6
9	2
10	0
11	4
12	3
13	0
14	3
15	0
16	3
17	0
18	3
19	4
20	0
21	7
22	0
23	3
24	2
25	6
26	0
27	0
28	0
29	0
30	227
31	2
32	00
33	233
34	274
35	3
36	95
37	156
38	933
39	600
40	165
41	558
42	263
43	5
44	18
45	280
46	181
47	24
48	2

STATION NUMBER	SAC-3 CPM
49	20
50	0
51	1
52	72
53	31
54	152
55	2
56	76
57	10
58	0
59	16
60	300
61	1
62	13
63	30
64	18
65	7
66	2
67	31
68	28
69	90
70	6
71	16
72	7
73	7
74	00
75	7
76	7
77	00
78	30
79	0
80	1
81	0
82	1
83	0
84	0
85	3
86	1
87	2
88	1
89	0
90	1
91	1
92	0
93	10
94	0
95	0
96	0
97	0

STATION NUMBER	SAC-3 CPM
98	0
99	4
100	0
101	4
102	0
103	0
104	1
105	0
106	0
107	0
108	0
109	4
110	0
111	3
112	0
113	0
114	0
115	3
116	0
117	3
118	3
119	0
120	1

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LOCATION "R" ARC

STATION NUMBER	SAC-3 CPM
000	3
1	0
2	2
3	0
4	0
5	0
6	0
7	0
8	0
9	2
10	3
11	1
12	0
13	1
14	0
15	0
16	0
17	0
18	0
19	4
20	1
21	6
22	224
23	24
24	9
25	7
26	277
27	251
28	13
29	59
30	21
31	5
32	382
33	34
34	203
35	6
36	285
37	5
38	21
39	10
40	14
41	28
42	57
43	363
44	9
45	3
46	19
47	16
48	24
49	0

STATION NUMBER	SAC-3 CPM
50	4
51	0
52	2
53	0
54	20
55	7
56	0
57	71
58	8
59	5
60	0
61	0
62	11
63	10
64	87
65	34
66	0
67	7
68	9
69	7
70	10
71	8
72	0
73	0
74	0
75	0
76	0
77	1
78	14
79	2
80	2
81	3
82	0
83	3
84	4
85	0
86	14
87	1
88	0
89	0
90	0
91	0
92	0
93	0
94	4
95	4
96	2
97	2
98	0
99	6

STATION NUMBER	SAC-3 CPM
100	0
101	61
102	0
103	0
104	0
105	0
106	0
107	4
108	0
109	0
110	0
111	2
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	0

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LOCATION "A" GRID ARRAY

STATION NUMBER	SAC-3 CPM
AA-1	2
2	4
3	0
4	0
5	1
6	0
7	5
8	5
9	3
10	4
11	7
AB-1	4
2	3
3	1
4	9
5	2
6	3
7	2
8	5
9	4
10	5
11	1
AC-1	5
2	2
3	3
4	2
5	0
6	4
7	262
8	3
9	2
10	6
11	4
AD-1	0
2	29
3	4
4	13
5	0
6	1
7	3
8	4
9	3
10	2
11	5

STATION NUMBER	SAC-3 CPM
AE-1	0
2	1
3	3
4	1
5	0
6	0
7	1
8	3
9	7
10	8
11	0
AF-1	0
2	0
3	0
4	22
5	0
6	62
7	0
8	0
9	1
10	0
11	6
AG-1	0
2	10
3	6
4	84
5	0
6	0
7	661
8	7
9	2
10	0
11	2
AH-1	1
2	0
3	3
4	2
5	97
6	0
7	17
8	15
9	1
10	2
11	2

STATION NUMBER	SAC-3 CPM
AI-1	3
2	0
3	4
4	59
5	515
6	140
7	422
8	20
9	3
10	7
11	4
AJ-1	0
2	2
3	14
4	78
5	706
6	172
7	134
8	26
9	2
10	1
11	1
AK-1	0
2	3
3	192
4	1182
5	309
6	249
7	10
8	79
9	10
10	2
11	9

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LOCATION "B" GRID ARRAY

STATION NUMBER	SAC-3 CPM
BA-1	0
2	3
3	3
4	3
5	4
6	4
7	6
8	3
9	64
10	35
11	39
12	19
13	11
14	4
15	4
BB-1	6
2	1
3	5
4	6
5	3
6	3
7	2
8	10
9	10
10	19
11	26
12	10
13	23
14	8
15	9
BC-1	1
2	0
3	2
4	4
5	0
6	3
7	4
8	9
9	3
10	1
11	5
12	15
13	36
14	103
15	3

STATION NUMBER	SAC-3 CPM
BD-1	3
2	5
3	5
4	1
5	5
6	0
7	5
8	0
9	3
10	1
11	9
12	7
13	14
14	11
15	3
BE-1	4
2	3
3	7
4	2
5	1
6	1
7	0
8	2
9	3
10	1
11	5
12	2
13	15
14	12
15	3
BF-1	1
2	4
3	4
4	6
5	1
11	0
12	540
13	23
14	7
15	7

STATION NUMBER	SAC-3 CPM
BG-1	2
2	1
3	84
4	3
5	8
11	11
12	9
13	0
14	3
15	5
BH-1	2
2	1
3	1
4	0
5	1
11	2
12	6
13	6
14	8
15	19
BI-1	5
2	4
3	0
4	2
5	1
11	4
12	12
13	9
14	5
15	7
BJ-1	0
2	6
3	1
4	1
5	1
11	39
12	34
13	15
14	5
15	3

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LOCATION "B" GRID ARRAY cnt.

STATION NUMBER	SAC-3 CPM
BK-1	1
2	10
3	2
4	1
5	0
6	80
7	691
8	695
9	22
10	62
11	6
12	130
13	32
14	20
15	119
BL-1	5
2	0
3	2
4	5
5	1
6	984
7	255
8	133
9	10
10	73
11	26
12	5
13	5
14	7
15	5

STATION NUMBER	SAC-3 CPM
BM-1	2
2	2
3	1
4	3
5	267
6	435
7	99
8	44
9	4
10	16
11	14
12	1
13	9
14	14
15	24
BN-1	12
2	3
3	1
4	18
5	279
6	236
7	107
8	102
9	92
10	12
11	2
12	3
13	2
14	8
15	104

STATION NUMBER	SAC-3 CPM
BO-1	1
2	4
3	1
4	141
5	857
6	340
7	100
8	34
9	1
10	4
11	2
12	1
13	1
14	29
15	6

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LOCATION "C" GRID ARRAY

STATION NUMBER	SAC-3 CPM
CA-1	1
2	1
3	0
4	0
5	1
6	1
7	2
8	1
9	2
10	7
11	14
12	4
13	12
14	2
15	16
16	8
17	13
CB-1	2
2	6
3	3
4	2
5	5
6	7
7	4
8	3
9	1
10	2
11	3
12	1
13	1
14	1
15	6
16	5
17	2
CC-1	4
2	1
3	1
4	4
5	0
6	1
7	0
8	3
9	16
10	3
11	18
12	2
13	5
14	3

STATION NUMBER	SAC-3 CPM
CC-15	3
16	3
17	8
CD-1	0
2	1
3	3
4	1
5	1
6	3
7	0
8	2
9	14
10	8
11	2
12	7
13	9
14	2
15	30
16	2
17	4
CE-1	4
2	2
3	31
4	0
5	5
6	6
7	1
8	1
9	0
10	0
11	0
12	0
13	0
14	0
15	6
16	11
17	16
CF-1	5
2	0
3	1
4	0
5	2
13	5
14	7
15	2
16	7
17	16

STATION NUMBER	SAC-3 CPM
CG-1	1
2	1
3	2
4	1
5	2
13	10
14	8
15	8
16	4
17	7
CH-1	0
2	2
3	3
4	3
5	4
13	4
14	9
15	3
16	6
17	6
CI-1	0
2	11
3	1
4	2
5	0
13	9
14	8
15	3
16	13
17	5
CJ-1	6
2	1
3	1
4	2
5	0
13	3
14	9
15	7
16	15
17	9
CK-1	5
2	7
3	9
4	12
5	0
13	3

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LOCATION "C" GRID ARRAY (cont.)

STATION NUMBER	SAC-3 CPM
CK-14	21
15	6
16	10
17	11
CL- 1	6
2	7
3	5
4	3
5	1
13	4
14	11
15	9
16	3
17	18
CM -1	5
2	4
3	0
4	6
5	0
6	3
7	49
8	39
9	7
10	4
11	7
12	7
13	4
14	4
15	3
16	13
17	5
CN- 1	4
2	3
3	7
4	9
5	0
6	0
7	23
8	11
9	15
10	4
11	12
12	0
13	4
14	11
15	7
16	10

STATION NUMBER	SAC-3 CPM
CN-17	7
CO- 1	0
2	2
3	2
4	3
5	2
6	199
7	7
8	20
9	25
10	11
11	31
12	1
13	0
14	4
15	6
16	0
17	2
CP -3	0
4	1
5	57
6	89
7	4
8	16
9	3
10	10
11	10
12	8
13	5
14	4
15	20
CQ- 5	309
6	11
7	4
8	9
9	3
10	23
11	6
12	40
13	14

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LOCATION "B" ARC

STATION NUMBER	SAC-3 CPM
000	3
1	3
2	7
3	5
4	8
5	5
6	7
7	13
8	2
9	3
10	5
11	4
12	2
13	7
14	1
15	1
16	1
17	1
18	98
19	82
20	46
21	369
22	2634
23	4015
24	355
25	1092
26	951
27	206
28	395
29	376
30	165
31	73
32	86
33	42
34	45
35	9
36	14
37	1
38	5
39	2
40	17
41	4
42	12
43	3
44	53
45	2
46	2
47	6
48	5
49	3

STATION NUMBER	SAC-3 CPM
50	36
51	5
52	1
53	9
54	5
55	3
56	11
57	8
58	2
59	3
B060 - B120: Filter discs not counted. Gamma scan and Alpha Survey Data showed contamination levels not significant.	

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LOCATION "C" ARC

STATION NUMBER	SAC-3 CPM
000	3
1	1
2	2
3	4
4	13
5	20
6	1
7	4
8	2
9	4
10	7
11	3
12	0
13	3
14	5
15	7
16	11
17	0
18	0
19	0
20	1
21	74
22	42
23	221
24	9
25	183
26	264
27	135
28	281

STATION NUMBER	SAC-3 CPM
29	29
30	9
31	265
32	78
33	88
34	119
35	88
36	1
37	2
38	17
39	18
40	1
41	1
42	3
43	3
44	10
45	4
46	4
47	7
48	8
49	1
50	3
51	6
52	5
53	0
54	8
55	16
56	60
57	7
58	5
59	5
CO60-C120:	
Filter discs not counted.	
Gamma Scan and Alpha	
Survey data showed	
contamination levels	
not significant.	

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LOCATION "D" ARC

STATION NUMBER	SAC-3 CPM
000	5
1	3
2	4
3	1
4	3
5	6
6	7
7	3
8	4
9	6
10	5
11	4
12	4
13	2
14	8
15	5
16	5
17	1
18	0
19	0
20	0
21	25
22	25
23	6
24	156
25	440
26	909
27	595
28	507
29	464
30	384
31	56
32	8
33	9

STATION NUMBER	SAC-3 CPM
34	17
35	15
36	28
37	27
38	2
39	2
40	1
41	9
42	0
43	6
44	2
45	0
46	0
7	2
48	2
49	2
50	1
51	26
52	4
53	7
54	32
55	5
56	4
57	5
58	3
59	2
D 060 - D 120	
Filter discs not counted. Gamma scan and Alpha Survey data showed contamination levels not significant.	

EVENT: CLEAN SLATE 1 D-DAY DATE 25 MAY 1963

LOCATION "E" ARC

STATION NUMBER	SAC-3 CPM
000	2
1	3
2	4
3	1
4	2
5	0
6	0
7	1
8	2
9	1
10	1
11	3
12	3
13	6
14	2
15	2
16	0
17	4
18	2
19	1
20	18
21	25
22	32
23	180
24	8
25	310
26	225
27	189
28	857
29	533
30	757
31	145
32	53

STATION NUMBER	SAC-3 CPM
33	33
34	17
35	13
36	4
37	11
38	1
39	1
40	0
41	17
42	4
43	2
44	4
45	6
46	41
47	15
48	78
49	1
50	1
51	2
52	4
53	2
54	0
55	0
56	2
57	39
58	5
59	1
E 060 - E 120	

Filter discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant.

EVENT: CLEAN SLATE I D-DAY DATE 25 MAY 1963

LOCATION "F" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	0
3	2
4	2
5	2
6	3
7	1
8	7
9	1
10	2
11	6
12	1
13	4
14	4
15	6
16	3
17	0
18	0
19	0
20	17
21	0
22	8
23	186
24	16
25	16
26	157
27	254
28	95
29	59
30	861
31	71
32	10

STATION NUMBER	SAC-3 CPM
33	8
34	121
35	1
36	4
37	0
38	7
39	1
40	1
41	0
42	1
43	2
44	1
45	2
46	2
47	1
48	2
49	1
50	3
51	4
52	3
53	3
54	4
55	4
56	2
57	5
58	3
59	4
F 060 3	F 120

Filter discs not counted. Gamma Scan and Alpha Survey data showed contamination levels

EVENT: CLEAN SLATE I D-DAY DATE 25 MAY 1963

LOCATION "G" ARC

STATION NUMBER	SAC-3 CPM
000	2
1	0
2	2
3	0
4	3
5	2
6	0
7	3
8	3
9	3
10	2
11	4
12	4
13	1
14	4
15	1
16	4
17	1
18	4
19	1
20	0
21	0
22	0
23	169
24	67
25	55
26	66
27	220
28	436
29	240
30	49
31	83
32	65

STATION NUMBER	SAC-3 CPM
33	16
34	44
35	1
36	33
37	174
38	130
39	0
40	1
41	0
42	2
43	128
44	2
45	0
46	3
47	1
48	1
49	0
50	4
51	10
52	3
53	1
54	26
55	5
56	4
57	7
58	2
59	1
G060 - G120	
Filter discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant	

EVENT: CLEAN SLATE I D-DAY DATE 25 MAY 1963

LOCATION "H" ARC

STATION NUMBER	SAC-3 CPM
000	4
1	4
2	1
3	0
4	2
5	2
6	1
7	2
8	4
9	1
10	1
11	0
12	1
13	1
14	1
15	3
16	2
17	2
18	1
19	1
20	3
21	2
22	0
23	6
24	5
25	7
26	21
27	50
28	318
29	426
30	544
31	20
32	64

STATION NUMBER	SAC-3 CPM
33	109
34	94
35	2
36	7
37	52
38	1
39	2
40	00
41	10
42	1
43	1
44	1
45	3
46	2
47	2
48	3
49	2
50	1
51	4
52	1
53	0
54	1
55	0
56	0
57	1
58	1
59	4
H 060 - H 120	
Filter discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant.	

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LOCATION "I" ARC

STATION NUMBER	SAC-3 CPM
000	9
1	7
2	7
3	3
4	3
5	2
6	6
7	7
8	4
9	9
10	3
11	0
12	3
13	3
14	3
15	3
16	3
17	7
18	5
19	3
20	1
21	2
22	1
23	0
24	0
25	0
26	78
27	167
28	176
29	487
30	268
31	218
32	3

STATION NUMBER	SAC-3 CPM
33	23
34	81
35	11
36	10
37	3
38	1
39	5
40	0
41	4
42	1
43	8
44	1
45	5
46	3
47	1
48	1
49	1
50	3
51	2
52	5
53	5
54	5
55	3
56	3
57	2
58	4
59	1
I 060 - I 120	
Filter Discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant	

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LOCATION "J" ARC

STATION NUMBER	SAC-3 CPM
000	2
1	4
2	6
3	3
4	1
5	1
6	1
7	2
8	2
9	0
10	1
11	2
12	1
13	3
14	3
15	2
16	4
17	0
18	3
19	3
20	3
21	1
22	5
23	7
24	2
25	0
26	12
27	105
28	133
29	121
30	747
31	493

STATION NUMBER	SAC-3 CPM
33	58
34	138
35	0
36	8
37	2
38	4
39	0
40	4
41	6
42	6
43	3
44	57
45	00
46	5
47	18
48	16
49	4
50	1
51	2
52	4
53	4
54	1
55	0
56	7
57	3
58	2
59	0
J 060 - J 120	
Filter Discs not counted. Gamma Scan and Alpha Survey Data showed contamination levels not significant.	

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LOCATION "K" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	6
2	3
3	4
4	7
5	3
6	0
7	0
8	0
9	0
10	5
11	0
12	1
13	7
14	3
15	2
16	2
17	3
18	1
19	1
20	24
21	28
22	23
23	19
24	21
25	2
26	5
27	16
28	2
29	285'
30	35
31	180
32	114

STATION NUMBER	SAC-3 CPM
33	45
34	83
35	202
36	7
37	23
38	1
39	29
40	43
41	0
42	1
43	0
44	00
45	0
46	1
47	0
48	3
49	32
50	1
51	4
52	5
53	7
54	1
55	1
56	0
57	0
58	1
59	3
K 060 - K 120	
Filter Discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant.	

EVENT: CLEAN SLATE I D-DAY DATE 25 MAY 1963

LOCATION "L" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	1
24	0
25	2
26	0
27	122
28	55
29	702
30	461
31	105
32	407

STATION NUMBER	SAC-3 CPM
33	90
34	30
35	41
36	26
37	16
38	3
39	57
40	1
41	1
42	4
43	3
44	132
45	0
46	6
47	1
48	2
49	6
50	1
51	0
52	3
53	2
54	3
55	2
56	3
57	1
58	1
59	2
L 060 - L 120: Filter Discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant.	

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LOCATION "M" ARC

STATION NUMBER	SAC-3 CPM
000	4
1	4
2	1
3	1
4	1
5	3
6	0
7	4
8	0
9	5
10	4
11	3
12	5
13	2
14	0
15	3
16	2
17	1
18	7
19	4
20	1
21	0
22	1
23	1
24	0
25	0
26	0
27	111
28	284
29	137
30	57
31	143
32	188
33	131

STATION NUMBER	SAC-3 CPM
34	61
35	108
36	334
37	28
38	0
39	1
40	6
41	8
42	117
43	3
44	4
45	12
46	4
47	36
48	0
49	4
50	2
51	2
52	3
53	4
54	6
55	5
56	11
57	1
58	1
59	2
M 060 - M 120: Filter Discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant.	

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LOCATION "N" ARC

STATION NUMBER	SAC-3 CPM
000	5
1	0
2	1
3	2
4	0
5	0
6	3
7	4
8	3
9	0
10	3
11	2
12	0
13	1
14	4
15	2
16	0
17	5
18	1
19	5
20	2
21	0
22	4
23	1
24	2
25	8
26	5
27	57
28	113
29	81
30	634
31	158
32	127

STATION NUMBER	SAC-3 CPM
33	188
34	339
35	256
36	296
37	225
38	174
39	71
40	9
41	140
42	6
43	1
44	2
45	24
46	6
47	6
48	5
49	3
50	3
51	3
52	4
53	4
54	3
55	11
56	5
57	6
58	5
59	0
N060 - N 120: Filter Discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant.	

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LOCATION "O" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	1
25	2
26	5
27	4
28	70
29	171
30	99
31	286
32	443

STATION NUMBER	SAC-3 CPM
33	79
34	38
35	70
36	6
37	250
38	154
39	116
40	111
41	38
42	16
43	8
44	4
45	2
46	3
47	1
48	3
49	0
50	0
51	0
52	0
53	0
54	0
55	0
56	0
57	0
58	0
59	0
0 060 - 0 120: Filter Discs not counted. Gamma Scan and Alpha Survey data showed contamination levels not significant.	

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LOCATION "P" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	10
3	4
4	4
5	7
6	1
7	2
8	3
9	4
10	7
11	9
12	10
13	2
14	2
15	10
16	10
17	3
18	0
19	1
20	5
21	2
22	1
23	2
24	5
25	0
26	0
27	0
28	1
29	3
30	131
31	49
32	107

STATION NUMBER	SAC-3 CPM
33	234
34	334
35	40
36	214
37	65
38	51
39	24
40	55
41	301
42	46
43	1
44	21
45	65
46	0
47	2
48	2
49	2
50	2
51	1
52	0
53	2
54	1
55	7
56	2
57	1
58	3
59	1
P 060 - P 120: Filter Discs not counted. Gamma Scan and Alpha Survey data showed contamination level not significant.	

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LOCATION "A" GRID ARRAY

STATION NUMBER	SAC-3 CPM
AA 1 - AA 11	bkg.
AB 1 - AB 11	bkg.
AC 1 - AC 11	bkg.
AD 1 - AD 11	bkg.
AE 1 - AE 11	bkg.
AF 1- AF 11	bkg.
AG 1 - AG 11	bkg.
AH 1 - AH 11	bkg.
AI 1 - AI 11	bkg.
AJ 1 - AJ 11	bkg.
AK 1 - AK 11	bkg.

STATION NUMBER	SAC-3 CPM

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LOCATION "B" GRID ARRAY

STATION NUMBER	SAC-3 CPM
BA-9	13
10	6
BB-5	36
7	9
8	10
9	3
10	14
11	13
14	16
BC-5	11
6	84
7	67
8	170
9	32
10	129
11	70
1	301
13	
14	102
15	70
BD-1	0
2	37
3	33
4	11
5	342
6	62
7	410
8	308
9	143
10	86
11	368
12	327
13	205
14	156
15	99
BE-1	23
2	35
3	54
4	178
5	671
6	860
7	131
8	495
9	237
10	233
11	226

STATION NUMBER	SAC-3 CPM
BE-12	313
13	215
14	0
15	0
BF-1	27
2	50
3	252
4	1250
5	1689
11	389
12	261
13	337
14	184
15	45
BG-1	91
2	2007
3	1726
4	1472
5	857
11	1845
12	1200
13	736
14	415
15	265
BH-1	482
2	392
3	989
4	0
5	347
11	4429
12	5245
13	2372
14	2726
15	752
BI-1	165
2	2237
3	0
4	192
5	1913
11	6793
12	4965
13	842
14	4037
15	2734

STATION NUMBER	SAC-3 CPM
BJ-1	54
2	2127
3	885
4	1592
5	1606
11	3870
12	4986
13	3985
14	3993
15	2708
BK-11	7320
12	5787
BL -1 - BL-15 bkg.	
BM-1 - BM-15 bkg.	

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LOCATION "C" GRID ARRAY

STATION NUMBER	SAC-3 CPM
CA 1 - CA	17 bkg.
CB 1 - CB	17 bkg.
CC 1 - CC	17 bkg.
CD 1 - CD	17 bkg.
CE 1 - CE	17 bkg.
CF 1 - CF	17 bkg.
CG 1 - CG	17 bkg.
CH 3	105
4	23
5	22
13	62
14	10
15	11
16	1
17	2
CI 2	4
3	39
4	23
5	17
13	99
14	37
15	49
16	22
17	18
CJ 1	22
2	2
3	0
4	23
5	180
13	585
14	102
15	32
16	14
17	20
CK 1	43
2	17
3	9
4	29

STATION NUMBER	SAC-3 CPM
CK 5	180
13	822
14	408
15	172
16	52
17	20
CL 1	80
2	11
3	50
4	30
5	34
13	774
14	156
15	221
16	100
17	70
CM 1	4
2	11
3	5
4	4
5	374
6	11303
7	5980
8	5360
9	3750
10	1542
11	1839
12	0
13	539
14	0
15	0
16	0
17	0
CN 3	25
4	70
5	1991
6	13329
7	8869
8	6634
CO 1 - CO	17 bkg.
CP 1 - CP	15 bkg.

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LOCATION "B" ARC

STATION NUMBER	SAC-3 CPM
000	0
1	0
2	0
3	0
4	0
5	7
6	8
7	88
8	221
9	670
10	2088
11	2852
12	3210
13	2596
14	656
15	5519
16	516
17	0
18	572
19	11845
20	15095
25	4803
30	3745
35	2965
40	2743
45	3142

STATION NUMBER	SAC-3 CPM
50	1802
55	1409
60	2079
65	1756
70	1039
75	698
80	782
85	0
90	357
95	244
100	277
105	134
110	175
115	131

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LOCATION "C" ARC

STATION NUMBER	SAC-3 CPM
000	1
1	2
2	2
3	0
4	1
5	21
6	3
7	1
8	8
9	19
10	62
11	457
12	123
13	319
14	820
15	823
16	516
17	1355
18	2221
19	2494
20	19
21	1322
22	2642
23	1509
24	1099
25	1080
26	4048
27	3027
28	2619
29	2025
30	2168
35	1831
40	1543
45	1435
50	1106
55	1203
60	1134
65	596
70	881
75	922
80	443
81	480
82	397
83	462
84	536
85	233

STATION NUMBER	SAC-3 CPM
86	327
87	368
88	313
89	362
90	252
91	240
92	212
93	292
94	275
95	208
96	215
97	200
98	207
99	139
100	126
101	146
102	110
103	129
104	101
105	80
110	76
115	0

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LOCATION "D" ARC

STATION NUMBER	SAC-3 CPM
000	10
1	0
2	1
3	1
4	2
5	1
6	4
7	7
8	5
9	3
10	12
11	66
12	27
13	252
14	417
15	375
16	785
17	1395
18	1285
19	1897
20	1900
21	2541

STATION NUMBER	SAC-3 CPM
22	2899
23	3319
24	3017
25	3690
26	3470
27	2070
28	2016
29	1835
30	1292
35	1526
40	502
45	700
50	669
55	730
60	626
65	608
70	491
75	387
80	344
85	357
90	253
95	216
100	97
105	104
110	84
115	72
116	49
117	32
118	42
119	73
120	27

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LOCATION "E" ARC

STATION NUMBER	SAC-3 CPM
000	0
10	2
11	2
12	13
13	12
14	20
15	186
16	209
17	1411
18	590
19	1069
20	1258
21	1758
22	2822
23	1924
24	2539
25	1645
26	1630
27	1615
28	1623
29	557
30	737
35	518
40	425
45	382
50	398
55	235
60	265
66	220
70	123
75	123
80	150
85	127
90	119
95	98
100	90
105	108
110	65
115	64
120	65

STATION NUMBER	SAC-3 CPM

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LOCATION "F" ARC

STATION NUMBER	SAC-3 CPM
000	3
1	11
2	9
3	66
4	4
5	7
6	2
7	7
8	3
9	3
10	1
11	3
12	3
13	7
14	32
15	34
16	64
17	328
18	71
19	856
20	1328
21	1973
22	2368
23	956
24	3573
25	2879
26	2357
27	2175
28	1423
29	1104

STATION NUMBER	SAC-3 CPM
30	727
31	622
32	672
33	640
34	565
35	706
36	806
37	103
38	667
39	300
40	431
45	341
50	340
55	325
60	158
65	170
66	221
67	133
68	167
69	139
70	81
75	58
80	105
85	54
90	65
95	57
100	49
105	57
110	45
115	100
120	50

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LOCATION "G" ARC

STATION NUMBER	SAC-3 CPM
13	3
14	1
15	5
16	65
17	167
18	181
19	344
20	865
21	1511
22	2050
23	2251
24	1427
25	999
26	753
27	874
28	1018
29	813
30	525
31	441
32	355
33	570
34	206
35	287
36	192
37	288
38	187

STATION NUMBER	SAC-3 CPM
39	186
40	144
41	281
42	76
43	277
44	194
45	167
46	119
47	251
48	151
49	169
50	121
55	93
60	43
65	78
70	0
75	1
80	62
85	70
90	70
95	43
100	0
105	47
110	41
115	39
120	38

EVENT: CLEAN SLATE II D-DAY DATE 31 MAY 1963

LOCATION "H" ARC

STATION NUMBER	SAC-3 CPM
10	0
11	3
12	6
13	3
14	3
15	5
16	4
17	1
18	39
19	85
20	459
21	420
22	555
23	814
24	777
25	994
26	563
27	541
28	930
29	446
30	341
35	497
40	348
45	78
50	168
55	76
60	10
65	31
70	61
75	84
80	38
85	71
90	29
95	40
100	31
105	36
110	29
115	18
120	18

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE II D-DAY DATE 31 MAY 1963

LOCATION "I" ARC

STATION NUMBER	SAC-3 CPM
15	0
16	1
17	10
18	18
19	144
20	421
21	471
22	1110
23	950
24	925
25	1022
26	962
27	708
28	728
29	400
30	396
35	213
40	71
45	129
50	116
55	58
60	46
65	0
70	26
80	27
85	38
95	21
110	28
120	9

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE II D-DAY DATE 31 MAY 1963

LOCATION "J" ARC

STATION NUMBER	SAC-3 CPM
8	2
9	3
10	2
11	5
12	9
13	8
14	7
15	3
16	2
17	5
18	4
19	3
20	43
21	106
22	261
23	639
24	480
25	340
26	880
27	411
28	259
29	184
30	189
35	35
40	173
45	74
50	44
51	44
52	85
53	16
54	69
55	74
56	39
57	32
58	118
59	37
60	61
61	29
62	66
63	10
64	25
65	18
66	49
67	54
68	28
69	38

STATION NUMBER	SAC-3 CPM
70	32
71	36
72	38
73	31
74	30
75	29
76	48
77	25
78	28
79	46
80	57
81	19
82	37
83	24
84	22
85	24
86	16
87	20
88	17
89	6
90	3
91	19
92	23
93	10
94	4
95	15
96	22
97	26
98	19
99	16
100	26
105	16
110	8
115	19
120	5

EVENT: CLEAN SLATE II D-DAY DATE 31 MAY 1963

LOCATION "K" ARC

STATION NUMBER	SAC-3 CPM
15	1
16	3
17	5
18	1
19	2
20	40
21	5
22	171
23	361
24	111
25	413
26	227
27	706
28	279
29	21
30	202
31	83
32	105
33	113
34	96
35	78
36	16
40	135
45	38
50	80
55	22
60	59
65	64
70	37
75	58
80	28
85	41
90	26
95	12
100	20
105	28
110	10
115	5
120	15

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE II D-DAY DATE 31 MAY 1963

LOCATION "L" ARC

STATION NUMBER	SAC-3 CPM
5	3
10	5
15	8
20	3
21	4
22	6
23	5
24	14
25	24
26	18
27	14
28	6
29	6
30	70
31	13
33	5
34	52
35	162
36	68
37	222
38	127
39	52
40	124
41	138
42	8
43	131
44	7
45	25

STATION NUMBER	SAC-3 CPM
46	12
47	89
48	102
49	54
50	34
51	25
52	40
53	37
54	23
55	56
56	17
57	17
58	20
59	25
60	17
65	69
70	180
75	15
80	14
85	3
90	38
95	24
100	10
115	5
120	4

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION "B" GRID ARRAY

STATION NUMBER	SAC-3 CPM
BA-1	2
2	7
3	2
4	18
5	6
BA-6 - BA-15 bkg.	
BB-1	19
2	14
3	16
4	2
5	9
6	3
7	1
8	4
BB-9 - 15 bkg.	
BC-1	8
2	18
3	4
4	4
5	7
6	3
7	4
8	2
9	1
10	3
11	4
12	17
13	7
14	10
15	0
BD-1	31
2	18
3	6
4	6
5	34
6	1290
7	6
8	0
9	7
10	13
11	8
12	11
13	14
14	15
15	0

STATION NUMBER	SAC-3 CPM
BE-1	59
2	18
3	4
4	4
5	7
6	3
7	4
8	2
9	1
10	3
11	4
12	17
13	7
14	10
15	0
BF-1	9
2	116
3	108
4	658
5	935
11	8
12	15
13	15
14	13
15	0
BG-1	46
2	42
3	84
4	1495
5	826
11	3548
12	1853
13	84
14	0
15	3
BH-1	52
2	972
3	2396
4	1418
5	2937
11	6882
12	7857
13	1147
14	5
15	1

STATION NUMBER	SAC-3 CPM
BI-1	2
2	2361
3	913
4	758
5	1105
11	3964
12	4611
13	6611
14	198
15	21
BI-16 - BI-20bkg	
BJ-1	3642
2	2805
3	1837
4	976
5	0
11	4680
12	3738
13	2905
14	186
15	35
BK-1	1360
2	3097
3	2213
4	1448
5	1578
6	896
7	3803
8	665
9	0
10	855
11	3442
12	4355
13	2156
14	900
15	113
BL-1	302
2	2201
3	3123
4	723
5	1141
6	1350
7	472
8	1012
9	131

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE

LOCATION "B" GRID ARRAY (cont.)

STATION NUMBER	SAC-3 CPM
BL-10	646
11	1
12	0
13	3036
14	900
15	113
BM-1	6346
2	2767
3	2147
4	873
5	555
6	982
10	823
11	1471
12	2060
13	3084
14	3357
15	237
BN-1	4673
2	2311
3	2223
4	453
5	933
6	708
7	785
8	801
9	271
10	0
11	0
12	0
13	1207
14	0
15	309

STATION NUMBER	SAC-3 CPM
BO-1	2255
2	3915
3	915
4	434
5	624
6	1082
7	978
8	415
9	490
10	610
11	521
12	1862
13	1341
14	1119
15	367

EVENT: CLEAN SLATE III DATE 9 JUNE 1963 D-DAY

LOCATION "C" GRID ARRAY

STATION NUMBER	SAC-3 CPM
CA-1 - 17	bkg.
CB-1 - 17	bkg.
CC-1 - 17	bkg.
CD-1 - 17	bkg.
CE-1 - 17	bkg.
CF-5	5
13	15
CF-14 - 22	bkg.
CG-5	3
13	17
14	2
CG-15 - 17	bkg.
CH-4	8
5	13
13	6
14	14
15	10
16	0
CH-17 - 21	bkg.
CI-3	8
4	130
5	7
13	12
14	7
15	13
16	7
CJ-3	29
5	256
13	10
15	14
CJ-16 - 21	bkg.
CK-2	13
3	9
4	4
5	1504
13	23
14	31
15	6
16	0

STATION NUMBER	SAC-3 CPM
CL-1	9
2	6
3	8
4	5
5	3290
13	10
14	14
15	3
CM-3	4
4	5
5	2524
6	2317
7	346
8	853
9	471
10	354
11	295
12	666
13	52
14	3
15	7
16	2
17	0
CN-1	3
2	4
3	1
4	1
5	0
6	3245
7	1288
8	686
9	85
10	36
11	156
12	51
13	27
14	3

STATION NUMBER	SAC-3 CPM
CO-3	4
4	5
5	1301
6	639
7	699
8	93
9	98
10	67
11	13
12	59
13	47
14	13
15	13
CP-3	5
4	5
5	545
6	207
7	0
8	688
9	119
10	95
11	125
12	92
13	33
14	7
15	7
CC-5	591
6	1435
7	868
8	491
9	39
10	31
11	95
12	131
13	31

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE 1963

LOCATION "B" ARC

STATION NUMBER	SAC-3 CPM
000 - 009 bkg.	
10	3
11	3
12	2
13	1
14	4
15	1243
16	1145
17	5723
18	855
19	1761
20	2750
21	1300
22	1061
23	4109
24	1736
25	4013
26	3437
27	1791
28	5419
29	3428
30	1733
31	1638
32	781
33	535
34	919
35	605
36	642
37	590
38	525
39	684
40	669
45	481
50	470
55	209
60	360
65	239
70	215
75	231
80	368
85	193
90	131
95	177
100	54
105	38
110	27
115	3
120	7

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY **DATE** 9 JUNE 1963

LOCATION "C" ARC

STATION NUMBER	SAC-3 CPM
000	1
05	1
10	5
13	5
14	2
15	3
16	5
17	4
18	6
19	20
20	192
21	279
22	17
23	757
24	1305
25	7696
26	630
27	2423
28	5352
29	2204
30	1636
31	3516
32	1704
33	141
34	1397
35	1066
40	202
45	120
50	197
55	197
60	135
65	69
70	84
75	89
80	104
85	68
95	48
100	9
105	21
110	7
115	5
120	3

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY **DATE** 9 JUNE 1963

LOCATION "D" ARC

STATION NUMBER	SAC-3 CPM
000 - 022	bkg.
23	83
26	524
28	748
34	51
38	87
39	185
40	289
50	39
55	22
60	114
65	77
70	124
75	90
80	49
85	45
90	29
95	9
100	51
110	15
115	12
120	4

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE 1963

LOCATION "E" ARC

STATION NUMBER	SAC-3 CPM
000	1
05	0
20	1
21	2
22	3
23	1
24	33
25	25
26	0
27	163
28	67
29	321
30	958
31	192
32	1999
33	355
34	1236
35	1770
36	708
37	739
38	631
39	543
40	129
45	197
50	94
51	125
60	43
65	0
70	0
75	49
80	104
85	0
90	45
95	11
100	19
105	4
110	7
115	12
120	19

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE 1963

LOCATION "F" ARC

STATION NUMBER	SAC-3 CPM
000	2
05	1
10	2
15	1
20	2
22	3
24	3
25	1
26	5
27	3
28	3
29	533
30	994
31	2321
32	1402
33	1239
34	1985
36	1399
37	600
38	1086
39	1585
40	853
41	493
42	197
43	305
44	0
45	135
46	0
50	34
55	26
60	45
65	34
70	51
75	15
80	37
85	16
90	11
95	12
100	12
105	11
110	4
115	5
120	3

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE 1963

LOCATION "G" ARC

STATION NUMBER	SAC-3 CPM
000	4
05	5
10	8
15	3
20	7
25	4
26	2
27	13
28	31
29	181
30	286
31	386
32	1055
33	1090
34	639
35	1163
36	2906
37	87
38	1002
39	844
40	486
45	436
50	155
55	44
60	29
65	65
70	10
75	104
80	17
85	29
90	19
95	6
100	17
105	11
110	146
115	8
120	5

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE 1963

LOCATION "H" ARC

STATION NUMBER	SAC-3 CPM
000	16
05	6
10	7
15	7
20	6
25	2
26	9
27	7
28	18
29	34
30	117
31	233
32	488
33	1223
34	1541
35	1251
36	583
37	693
38	656
39	369
40	170
41	601
42	195
43	244
44	343
45	220
46	141
47	204
48	106
49	58
50	65
55	65
60	10
65	37
70	30
75	10
80	15
85	65
90	10
95	75
100	98
105	87
110	4
115	14
120	9

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE 1963

LOCATION "I" ARC

STATION NUMBER	SAC-3 CPM
000	6
05	5
10	7
15	5
20	5
25	6
26	2
27	4
28	5
29	11
30	45
31	22
32	453
33	541
34	1735
35	772
36	261
37	1084
38	606
39	645
40	931
41	502
42	350
43	296
44	206
45	231
50	111
55	57
60	5
65	7
70	17
75	7
80	13
85	12
90	6
95	8
100	233
105	4
110	10
115	1
120	4

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE 1963

LOCATION "J" ARC

STATION NUMBER	SAC-3 CPM
000	3
1	4
2	0
3	3
4	5
5	5
10	2
15	2
20	0
25	5
26	3
27	3
28	2
29	8
30	62
31	37
32	109
33	227
34	1739
35	597
36	782
37	827
38	928
39	830
40	778
41	624
42	629
43	192
44	346
45	379
50	268
55	7
58	6
59	5
60	8
65	15
70	9
75	12
80	5
85	7
90	3
95	5
100	3
105	2
110	4
115	4
120	0

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY DATE 9 June 1963

LOCATION "K" ARC

STATION NUMBER	SAC-3 CPM
000	47
05	8
10	3
15	14
20	252
21	21
22	32
23	52
24	2
25	4
29	59
30	1
31	22
32	13
33	75
34	95
35	115
36	388
37	239
38	289
39	299
40	234
41	234
42	109
43	133
44	73
45	13
46	21
47	18
48	14
49	62
50	252
51	21
52	32
53	52
54	2
55	22
60	3
65	5
70	9
75	13
80	6
85	2
90	5
95	6
100	4
105	2
110	5
115	6
120	5

STATION NUMBER	SAC-3 CPM

EVENT: CLEAN SLATE III D-DAY DATE 9 JUNE 1963

LOCATION "L" ARC

STATION NUMBER	SAC-3 CPM
000	11
05	5
10	5
15	3
20	4
25	5
26	3
27	6
28	9
29	7
30	3
31	5
32	36
33	119
34	43
35	226
36	884
37	296
38	70
39	531
40	0
41	0
42	313
43	261
44	270
45	221
46	139
47	139
48	4
49	70
50	237
55	6
60	37
65	25
70	77
75	7
80	11
85	5
90	8
95	0
100	17
105	0
110	0
115	0
120	0

STATION NUMBER	SAC-3 CPM

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