SECTION I

Student No._____

ST 3-168

RADIOLOGICAL DEFENSE LABORATORIES

INTRODUCTION TO LABORATORY PROCEDURES

INSTRUCTOR_____

THE CHEMICAL CORPS SCHOOL
CHEMICAL CORPS TRAINING COMMAND
FORT McCLELLAN, ALABAMA
OCTOBER 1952

INTRODUCTION TO LABORATORY PROCEDURES

I. INTRODUCTION

The purpose of this pamphlet is to give the student information regarding the procedures which are used when practical exercises are conducted in the Radiological Laboratories.

These exercises are designed to give the student practice in the application of the methods and procedures used in measuring radiations produced by radioactive materials, in the determination of the shielding effects of various common materials on these radiations, and in the operation of instruments which are used to measure radiations. These instruments are called RADIAC instruments. RADIAC is an abbreviation for Radioactivity Detection, Identification and Computation.

II. THE RADIOLOGICAL LABORATORIES

A. Location

The Radiological Laboratories are located in Post Area No. 8 approximately one mile northeast of the main school building, Building 144. The Laboratories consist of five buildings: Bldg. No's T-810, T-811, T-812, T-836, T-836A, and a concrete vault for the storage of radioactive materials, primarily Radium and Cobalt-60, used as standards in RADIAC instrument calibration. The

buildings are labeled as laboratories A,B,C,D, and E.

B. Description and Use

The laboratory buildings consist of classrooms or briefing rooms, laboratories for calibrating RADIAC instruments, instrument maintenance shop, and storage areas for instruments and radioactive materials. For identification purposes, each of the briefing rooms is named after some scientist whose work was instrumental in the development of atomic energy.

Laboratory A, Bldg. T-836 (See figure 1) is the main laboratory building. Located in this building are storage areas for all RADIAC instruments, the instrument maintenance shop, main supply room, the office of the Laboratory Director, and one briefing room. This briefing room is called the Geiger Room and is located on the second floor of the building. All instruments which are used during a laboratory exercise are issued to the students in this building.

Laboratory B, Bldg. T-836A (See figure 1) contains three briefing rooms, the Curie and Rutherford Rooms on the first floor and the Becquerel Room on the second floor. The office of the Health Physics Group (See section IV) and a room for the storage and preparation of radioactive isotopes are located in this building also. The Becquerel Room is also used as a control center for the radiological monitoring exercises.

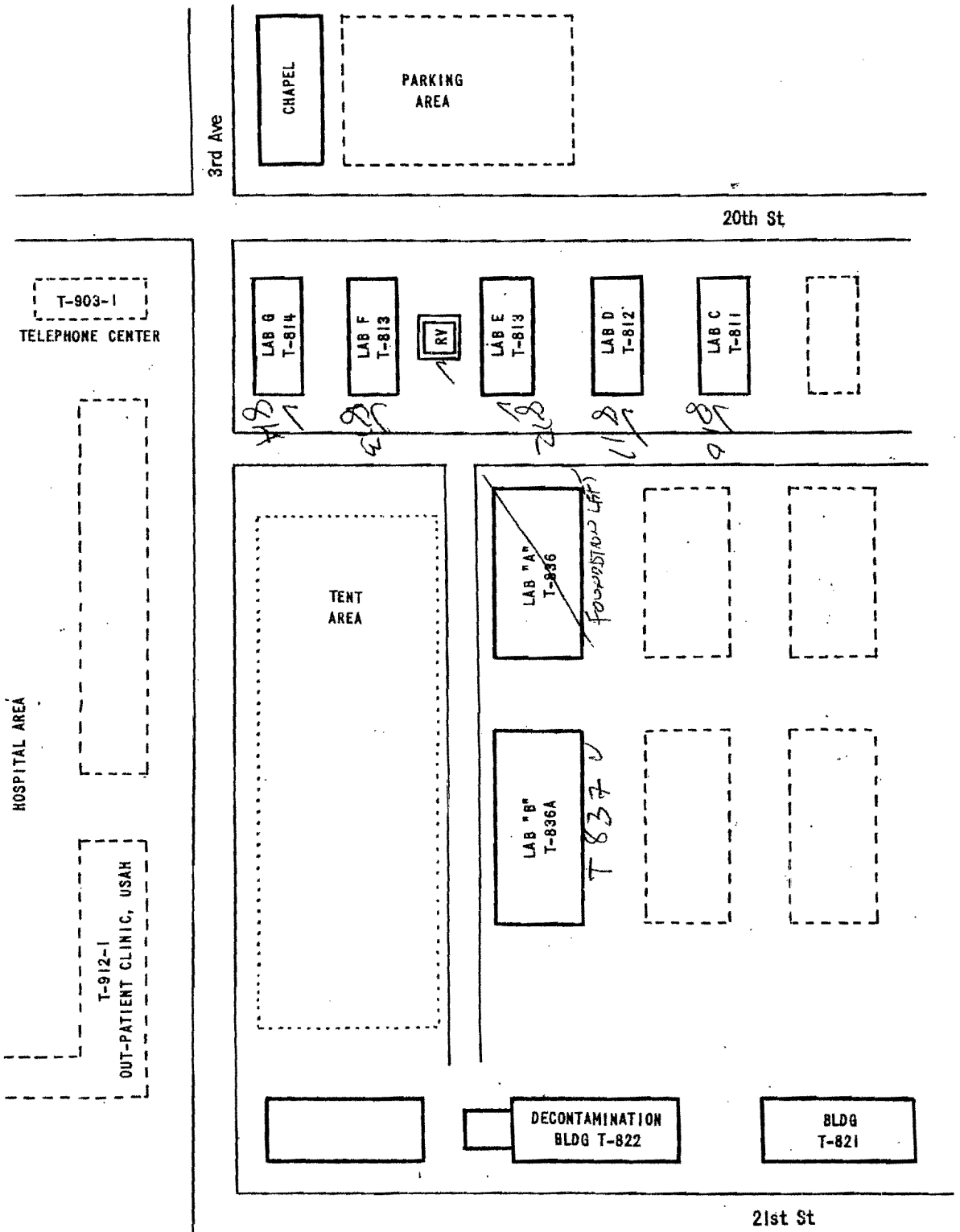

Figure 1 - Schematic diagram of Radiological Laboratories, The Chemical Corps School

Laboratories C, D, and E, Bldgs. T-810, T-811 and T-812, respectively, are used as calibration laboratories for RADIAC instruments.

C. Facilities

The facilities in the laboratory are limited due to a more or less temporary arrangement of the laboratories in temporary buildings. None of the buildings used as laboratories contain latrines. Male personnel make use of the latrine and wash room facilities in Bldg. T-821 located approximately 100 yards southeast of laboratory B (See figure 1). Restrooms are available to female personnel in Building T-913-1, Out-Patient Clinic USAH, in the hospital area across 3rd Avenue from the laboratory area (See figure 1).

There are water fountains located in Laboratories A and B and a soft-drink dispenser located on the first floor of Laboratory A. NOTE: Soft-drink bottles will not be carried from the first floor of Laboratory A. (See Section IV).

Government transportation is furnished all students from the main School Building, Bldg. 144, to the Radiological Laboratories and return for all exercises conducted in the laboratory area. Vehicles will be standing by at the school to transport the students to the laboratory area at the end of the class period prior to the exercise period. Students will board the vehicles immediately following the class period.

D. Personnel

The Radiological Laboratories are operated by personnel assigned to the Radiological Defense Section, Technical Instruction Branch, The Chemical Corps School. Military personnel include a Laboratory Director, Property Officer, officer and enlisted instructors, and a Health Physics Group which is responsible for radiation safety measures in the laboratory area. The Laboratory instrument maintenance shop is operated by civilian technicians. Figure 2 shows the personnel organization of the Radiological Laboratories.

III. THE LABORATORY EXERCISE

A. General Information

The number of laboratory exercises given in the program of instruction varies depending upon the particular course or sub-course taught at the School. The time allotted for an exercise varies also from one exercise to another.

There are no break periods officially scheduled for the laboratory exercises which are more than one hour in length. This is due to the variation in the time required to complete any one phase of the exercise. Students are allowed to take their breaks whenever they choose after the briefing on the exercise has been completed.

RAD LABS - PERSONNEL ORGANIZATION CHART

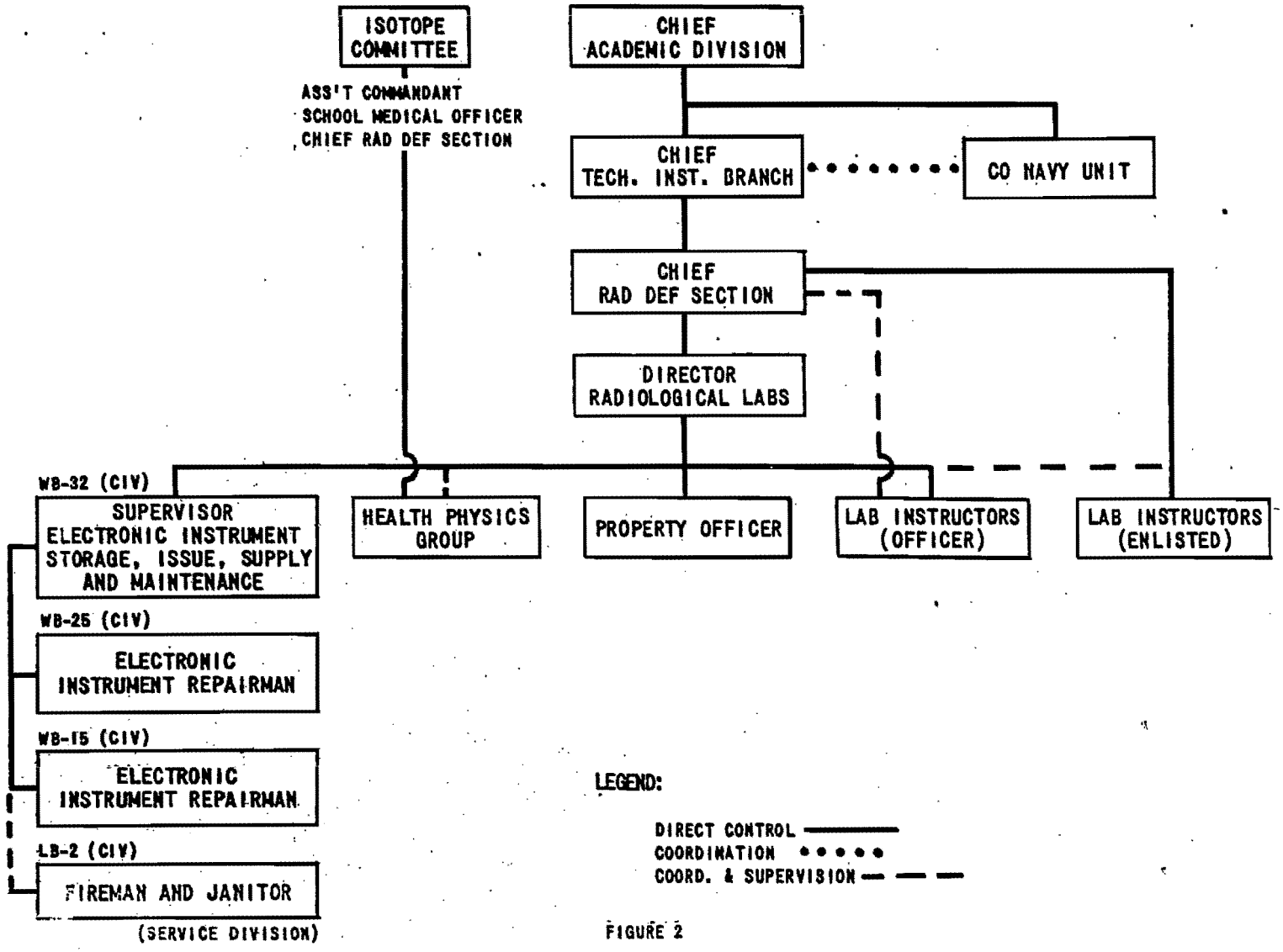

FIGURE 2

B. The Exercise Pamphlet

Pamphlets have been prepared for each exercise given in the laboratory. These pamphlets serve as an advance sheet for study prior to the conduction of the exercise, a guide, work sheet and notebook during the exercise and as a future reference for the student. The exercise pamphlets are listed as sections of the RADIAC Instruments Laboratory Manual, The Chemical Corps School, Special Text 3-168 (Revised). All data taken and results obtained from the exercise are placed in the pamphlet and turned in for grading at the end of the exercise period. Upon completion of grading, the exercise pamphlets are returned to the student for retention.

The work done by the student in the pamphlet must be neat and orderly. Data and results may be entered either in ink or pencil. No erasures are permitted in the pamphlet. When an error is discovered, corrections will be made by drawing a single horizontal line through the erroneous entry and placing the correction either above or below it. Failure to comply with these procedures may result in loss of points when the exercise is graded.

Each exercise pamphlet is divided into sections. Listed below are the sections in the order in which they appear in a pamphlet:

Section 1: Object of the exercise.

Section 2: Materials used in the exercise.

Section 3: Brief theory.

Section 4: Description and operation of equipment.

Section 5: Laboratory procedure.

Section 6: Calculations.

Section 7: Data.

Section 8: Results.

Section 9: Questions.

The exercise pamphlet cover sheet contains the following information: Laboratory exercise number, title of the exercise and the number of grade points allotted to the exercise. Identified blank spaces are provided for the student number, title and number of the course which student is attending, and date exercise is completed. Students are responsible for filling in these blank spaces prior to turning in the exercise for pamphlet. Two other identified blank spaces, the grade (point score) made by the student on the exercise and the instructor's initials, appear on the cover sheet. These blanks are filled in by the instructor.

1. Object

This is a one or two sentence paragraph stating the purpose of the exercise and/or the objective to be attained in the performance of the exercise.

2. Materials

All the materials listed in this section are furnished the student at the laboratory for the purpose of completing the exercise, or for radiological safety. Other materials needed but not issued at the laboratory include pencils or pen, straight edge, Handbook for Radiological Defense Sub-courses, (RDS-1B, issued to the student at the beginning of the course) and a slide rule, if available. Students are responsible for having these items in their possession for each exercise. (Students attending certain courses are issued slide rules for use while attending that particular course.)

3. Brief Theory

As the title implies, this section consists of a brief presentation of the theory of the instrument and/or concept on which the applicatory exercise is based. This is more or less a review of the main points of the theory which are presented in the classroom. Included in this section are references in which more details on the theory may be obtained.

4. Description and Operation of Equipment

This section includes a description of the instruments and equipment used in the exercise along with photographs and diagrams. Certain important features and operating controls are labeled on the

photographs and diagrams to assist the student in learning the operation of the instruments. Standing operating procedures for the operation are also included. RADIAC instruments are sensitive, delicate and costly. They must be handled with care. Personnel should be familiar with the operation of instruments before attempting to use them. Students are expected to familiarize themselves with the standing operating procedure presented in the exercise pamphlet for the operation of instruments to be used in any exercise prior to the time the exercise is conducted. No adjustments will be made by students on any RADIAC Instrument issued in the laboratory until they are instructed to do so by the instructor in charge of that particular exercise.

5. Laboratory Procedure

This section describes the procedure used to complete the exercise. The description includes the method(s) used to: procure the necessary data, make the proper calculations, and state the results obtained. All mathematical formulas which are used in the exercise are included in this section. Students are expected to study this procedure prior to the beginning of the exercise so that they understand how the exercise is performed. <u>For each exercise conducted in the laboratory the students should be prepared to take a short quiz covering the sections: brief theory, description and operation of equipment, and laboratory procedure of the exercise.</u>

6. Data

The data sheet has been constructed and arranged in such a manner that the necessary information can be tabulated neatly and conveniently by the student, can be easily interpreted by both student and instructor, and will make a handy, well organized future reference. However, for this to be true the data must be taken in accordance with the instructions set forth in the laboratory procedure section and those given by the instructor at the briefing. All measurements should be made as accurately as possible. Wherever applicable, the units used in the measurements must be shown in the appropriate place on the data sheet.

Since the transposing of data from one sheet to another creates an additional source of error, all data taken in the laboratory must be recorded on the data sheet as it is taken. The use of scratch paper to record data is not permitted.

7. Calculations.

The calculation section is provided to show how the mathematical formulas are used in the exercise. The approved procedure for the use of this section is as follows: State each formula used in the exercise clearly and show all units of measurement where applicable. Make one sample calculation using each formula by substituting, in the appropriate place, data taken in the laboratory. Show each step required to make the proper calculation.

Only one sample calculation of each formula will appear in the calculation section. Other calculations may be made in spaces provided for rough calculations and student notes.

8. Results

The results obtained from the laboratory exercise will depend among other things on the accuracy used in obtaining the data and making the calculations. In several of the exercises, the results are obtained using mathematical solution, while in others the graphical solution is used. In a few cases both methods are used.

All results using the mathematical solution must be shown with the proper units in which the results are expressed.

When the results are obtained by the graphical solution, care must be taken to insure complete identification of the graph. A graph is an expression of the results obtained using one particular set of data and is of little value unless it is identified as such. For complete identification the following features of the graph must be properly labeled (See figure 3):

a. There must be a title indicating what has been done on the graph. Examples:

(1) Graph showing time (years) vs. Radiation Intensity (mr/hr) for the radio-isotope Co^{60} using the "half-life" formula $I = I_o e^{-\lambda t}$.

CALIBRATION CURVE FOR THE IONIZATION CHAMBER

TYPE SURVEY METER

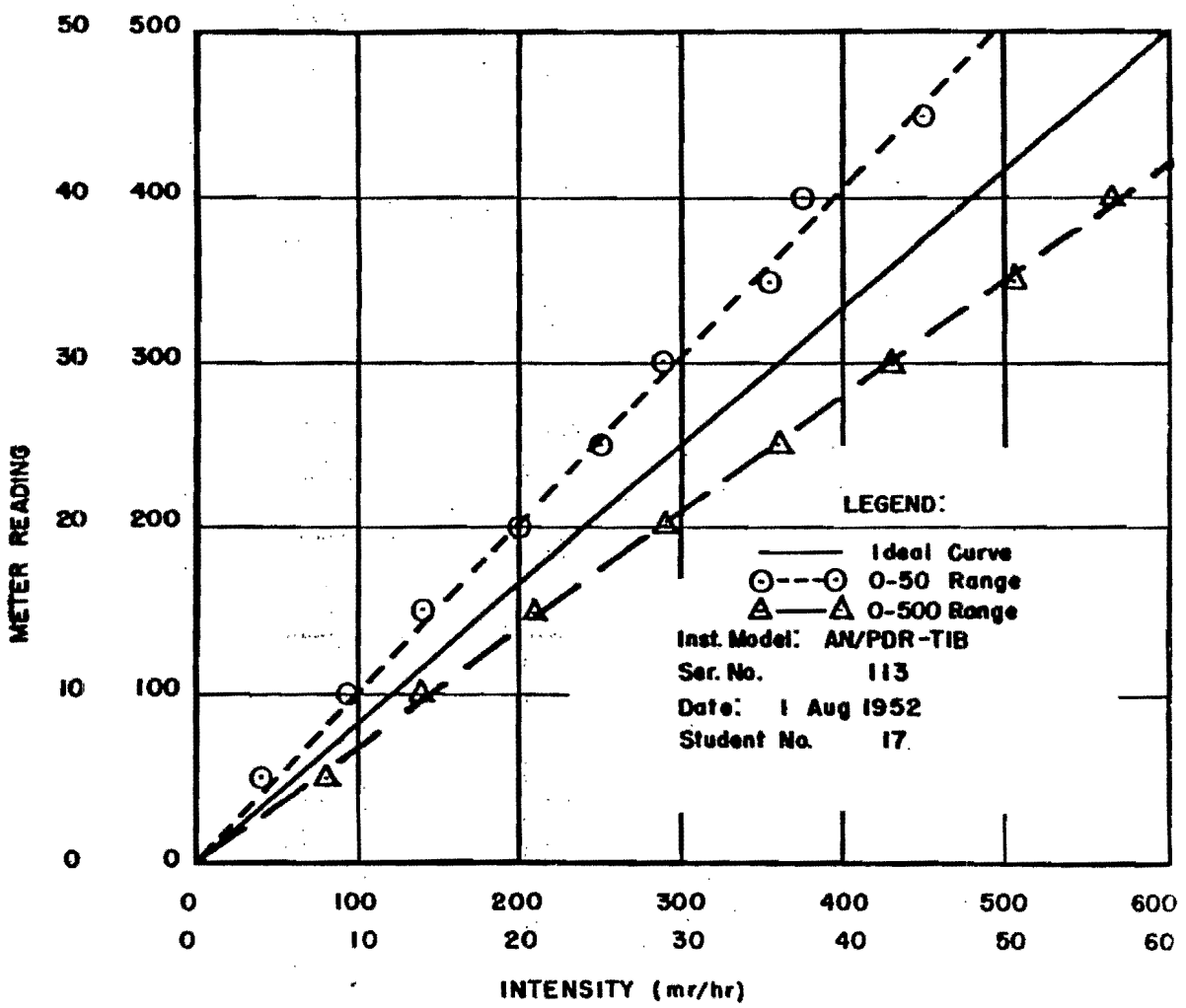

Figure 3 - Sample Calibration Curve

(2) Calibration curve for a Geiger-Mueller Type Survey Meter showing intensity (mr/hr) vs. meter reading (scale units).

b. The axes of the graph must be properly labeled showing the correct values and proper units in which the values are expressed. Examples:

(1) Time (days).

(2) Thickness of material (inches).

If more than one set of values and/or units is used on the axes, each set must be specifically indentified.

c. Points for each set of values plotted on the graph and curves produced by these points must be identified.

d. The following additional information must appear on the graph in the form of a legend:

(1) Identification of all curves.

(2) Type(s) of equipment used.

(3) Model(s) of the equipment used.

(4) Serial number of the particular equipment used.

(5) Date graph was prepared.

(6) Identification of person preparing the graph.

NOTE: In the laboratory the assigned student number is always used for identification purposes.

9. Questions

The questions are placed in the last section of the exercise to emphasize the main points of the

exercise and to permit the student to make use of the information obtained during the exercise. This section serves more or less as a summary or critique.

It is recommended that the students study the questions in this section and try to answer as many as possible prior to the exercise period.

C. Briefing for Exercise

A short portion of the exercise period is devoted to a briefing on the exercise procedures by the instructor. The students should be seated in the briefing room before the scheduled time for the exercise period to begin so that the briefing can start on time.

In the briefing the instructor reviews the main points of the theory involved in the exercise, explains the use of all mathematical formulas applicable to the exercise, displays and/or describes the instruments and equipment used in the exercise, instructs the class in the correct procedures for operating the instruments by going through the standing operating procedure step by step, reviews the procedures given in the Laboratory Procedure section of the exercise pamphlet, gives the class any additional information or procedures necessary for the conduct of the exercise, and answers any questions the students may have regarding the exercise.

D. Completing the Exercise

There is sufficient time allotted to each

exercise to allow the student to finish, provided some study of the exercise pamphlet is made prior to time of exercise, and consequently, the student has some understanding of the procedures to be followed.

Students are required to turn in the exercise pamphlet at the end of the exercise period, except under certain circumstances in which the student has a valid excuse for not being able to complete the exercise on time. In this case, the student must get the instructor's permission to turn in the exercise pamphlet late. The instructor will initial the exercise pamphlet to verify that permission has been granted.

There are racks containing numbered slots located in laboratories A and B which are used to store the completed exercise pamphlets. Upon completion of the exercise the student will place the exercise pamphlet in the slot bearing his student number. Students are <u>not</u> required to remain in the laboratory until the exercise period is over if they finish the exercise before such time. However, any student completing the exercise before the end of the period should report to the instructor before filing his exercise pamphlet in the rack. The instructor checks the racks at the end of the period to see that all exercise pamphlets are present or accounted for.

E. Grading

Each of the exercises have been assigned a number of points for grading purposes. The number of points allotted to any particular exercise is shown in the space provided on the cover sheet of the exercise pamphlet. When the exercise is graded, the number of points missed is subtracted from the maximum possible score and recorded by the instructor in the space provided on the cover sheet.

The total number of points made by the student on the exercises and the total possible points are forwarded to the Research & Analysis Section of the School, where they are averaged with the scores from examinations, training plans, etc.

The percentage of the final grade allotted to the laboratory exercises varies depending upon the particular course or sub-course. The instructor will inform your class of the relative value of the laboratory phase for your sub-course.

Students in the Chemical Officers Advanced Course, Atomic Defense Officers Course, Radiological Defense Officers (Res Comp) Course, and Navy Indoctrination Course are given a final laboratory examination. This is a practical examination covering all the material given in the laboratory exercises. The scores made on the examination are added in with those from the laboratory exercises to obtain the final laboratory grade.

IV. RADIATION SAFETY PRECAUTIONS

A. Radiation Hazards

To properly train personnel in the use and operation of RADIAC Instruments, radioactive materials are used in many of the exercises conducted in the Radiological Laboratories. Radium and Cobalt are used for the calibration of RADIAC Instruments. Various beta, gamma, and beta-gamma emitting radio-isotopes are used to teach the student methods and procedures for determining or identifying a particular radio-isotope.

There is a health hazard involved when these radioactive materials are used. Safety measures have been prescribed so that these hazards may be reduced to what is thought to be a safe limit. An organization has been set up to insure that these safety measures are carried out. This organization is known as the Health Physics Group.

B. Safety Procedures

1. The fundamental purposes for radiation safety measures are:

a. To prevent ingestion, inhalation, or other mode of entry of radio-isotopes into the body.

b. To maintain the amount of external exposure to ionizing radiations below permissible limits.

2. The prescribed radiation safety precautions used at The Chemical Corps School include the following:

a. Personnel will wear film badges and pocket dosimeters for all laboratory periods. Students are issued one film badge and two pocket dosimeters for use during each laboratory exercise. These instruments are issued to the students on the first floor of Laboratory A. The student is responsible for reading the pocket dosimeters each time they are used and recording the exposure value on an exposure sheet which is provided by the Health Physics Group. Film badges and pocket dosimeters will not be removed from the laboratories. Records of radiation exposures are made for all personnel who are exposed to radiations at the school. These records are kept on permanent file in the office of the Health Physics Group.

b. No smoking, drinking or eating at any time is permitted in the presence of radioactive materials. Areas in the laboratories in which these safety precautions are enforced include the calibration laboratories, laboratories C, D, and E, and that portion of the second floor in laboratory A used for the determination or identification of unknown radioisotopes.

c. Hands will be washed prior to each departure from the laboratory when alpha and/or beta emitters have been used. Use wash basins on the second floor of Laboratory A for this purpose.

REPRODUCED AT THE NATIONAL ARCHIVES

d. Radioactive materials used for the calibration of RADIAC Instruments will not be handled or tampered with in any way by unauthorized personnel.

NARA-College Park
RG 175
Entry: US Army Schools,
Chemical Corps School.
Box 1.

RADIATION SPECIAL STUDY NO. 43-075-73/74
US ARMY CHEMICAL CENTER AND SCHOOL
FORT McCLELLAN, ALABAMA 36201
28-31 MAY 1973

US ARMY
ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MD 21010

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DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

USAEHA-RH

10 SEP 1973

RADIATION SPECIAL STUDY NO. 43-075-73/74
US ARMY CHEMICAL CENTER AND SCHOOL
FORT McCLELLAN, ALABAMA 36201
28-31 May 1973

ABSTRACT

This radiation special study was made to assist in determining that all known areas of radioactive contamination had been decontaminated to acceptable levels or are properly controlled and that no health hazards existed after the closing of the US Army Chemical Center and School. A review of the findings indicated that there is a requirement for the US Army Chemical Center and School to:

a. Provide the Post Radiological Protection Officer with all documentation and radiation survey reports of all buildings and other areas where radioactive materials were used, stored or buried.

b. Provide the Post Engineer and the Radiological Protection Officer with blueprints and operating procedures for the maintenance of the Hot Liquid Waste System.

c. Prepare Atomic Energy Commission Form 741, Nuclear Material Transaction Report, for the transfer of special nuclear material to Aberdeen Proving Ground as required by 10 Code of Federal Regulations 70.25 and Atomic Energy Commission agreements 1003 and 3039.

d. Prepare and submit Department of the Army Form 3252-R, Radioisotope Inventory and Leak Test Report, for the radioactive calibration and test items of supply which were transferred to Aberdeen Proving Ground in accordance with chapter 3, AR 725-1.

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

USAEHA-RH

RADIATION SPECIAL STUDY NO. 43-075-73/74
US ARMY CHEMICAL CENTER AND SCHOOL
FORT McCLELLAN, ALABAMA 36201
28-31 May 1973

1. REFERENCES.

a. AR 40-5, Preventive Medicine, 13 March 1969.

b. NCRP Report 8, Control and Removal of Radioactive Contamination in Laboratories (NBS Handbook 48), 15 December 1951.

c. NCRP Report 10, Radiological Monitoring Methods and Instruments (NBS Handbook 51), 7 April 1952.

d. NCRP Report 30, Safe Handling of Radioactive Materials (NBS Handbook 92), 9 March 1964.

e. USAEC Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material, 22 April 1970.

f. Letter, USAEHA-RH, this Agency, 4 April 1973, subject: Radiation Special Study No. 43-041-73.

g. Letter, USAEHA-RH, this Agency, 22 May 1973, subject: Radiation Protection Survey, USACMLCS, Fort McClellan, Alabama.

h. Radiation Special Study No. 43-041-73, Evaluation of Radioactive Contamination, US Army Chemical Center and School, Fort McClellan, Alabama 36201, 5-7 February 1973.

i. Letter, USAEHA-RH, this Agency, 19 Jun 73, subject: Preliminary Report, Radiation Special Study No. 43-075-73, US Army Chemical Center and School, Fort McClellan, Alabama 36201, 28 - 31 May 1973.

2. PURPOSE. At the request of the Commander, USASTC, this special study was made to determine that buildings and areas had been decontaminated to acceptable levels or are properly controlled and that no health hazards existed after closing of the USACMLSC.

3. BACKGROUND.

a. An entrance interview was held with the Assistant Commandant and selected members of the Commandant's staff. An exit briefing was held with the Commandant and selected members of the Commandant's staff. In addition, an exit briefing was held with the Deputy Post Commander and selected members of the Commander's staff.

b. Graphical illustrations are given in Appendix A. Results of wipe test and core sample are given in Appendix B. A list of Abbreviations used is given in Appendix C.

4. RADIOACTIVE CONTAMINATION GUIDE. The following radioactive contamination guides have been taken from reference 1e above and should be used in accomplishing the decontamination operation and survey of premises and equipment prior to abandonment or release for unrestricted use.

SURFACE CONTAMINATION GUIDANCE

Radionuclides*	Total**	Removable
Natural ^{235}U, ^{238}U, Th-Natural, ^{232}Th, and associated decay (daughter) products	Max 25,000 dpm α/100 cm^2 Av 5,000 dpm α/100 cm^2	1000 dpm α/ 100 cm^2
Other radionuclides which decay by alpha emission or by spontaneous fission	Max 2,500 dpm α/100 cm^2 Av 500 dpm α/100 cm^2	100 dpm α/ 100 cm^2
Beta-gamma emitting radionuclide with decay modes other than alpha emission or spontaneous fission	Max 1.0 mrad/hr at 1 cm *** Av 0.2 mrad/hr at 1 cm***	1000 dpm β-γ/100 cm^2

* When surface contamination by both alpha and beta-gamma emitting radionuclides exists, the limits established for alpha and beta-gamma emitting radionuclides shall apply independently.

**Measurements of total contamination shall not be averaged over more than 10 square meters. For objects of less surface area, the average shall be derived for each such object.

***Measured through not more than 7 milligrams per square centimeters of total absorber.

5. INSTRUMENTATION.

a. Eberline, Model 520, portable beta-gamma survey instrument with HP-177B GM probe.

b. Eberline, Model 520, portable beta-gamma survey instrument with HP-180-A GM probe.

c. Teletecter, Model 6112, with 30 mg/cm^2 beta window.

d. Eberline, Model PRM 5-3, survey meter with FIDLER probe, components of Broken Arrow Response Kit.

6. FINDINGS AND PROCEDURES. Radiation Surveys were made of all buildings and other areas which had been identified by the RPO at USACMLCS as to where radioactive materials had been used or stored. Also, surveys were made of two old radioactive materials burial grounds.

a. Building 3181, Rooms 35-36 and Isotope Laboratory. See Plate 1, Appendix A, and Appendix B, for radiation survey data.

b. Building 3182, Former Museum (Classroom V), Radiation Laboratory W, Hallway and Instruments Repair. See Plate 2, Appendix A, and Appendix B, for radiation survey data.

c. Building 3180, Radioactive Material Storage Vault. See Plate 3, Appendix A, and Appendix B, for radiation survey data.

d. Concrete Pad Around Building 3180.

(1) All concrete had been removed and disposed of as radioactive waste.

(2) A survey of the building indicated that all radiation levels were within the limits given in paragraph 4, above.

e. Radiation Waste Storage Well Near Building 3180.

(1) Steel cylinder had been filled with concrete.

(2) A survey of the storage well indicated that all radiation levels were within the limits given in paragraph 4, above. See Plate 3, Appendix A, and Appendix B, for the results of wipe test.

f. Alpha Field.

(1) All uranium plates had been removed and transferred to Aberdeen Proving Ground.

(2) All concrete pedestals, used to support the uranium plates, had been removed and properly disposed of.

(3) The alpha field had been plowed to a depth of about 6 inches.

(4) A survey of the field indicated that all radiation levels were within the limits given in paragraph 4 above.

(5) A soil sample was collected and evaluated. See Appendix B, for the results.

g. Fenced Area Behind Building 3182.

(1) All radioactive materials and other radioactive items had been properly disposed of as radioactive waste.

(2) All contaminated soil had been disposed of as radioactive waste.

(3) A survey of the area indicated that all radiation levels were within the limits given in paragraph 4, above.

h. Bromine Field. A survey of the area indicated that all radiation levels were within the limits given in paragraph 4, above.

i. Rideout Field. A survey of the area indicated that all radiation levels were within the limits given in paragraph 4, above.

j. Iron Mountain (Rattlesnake Gulch).

(1) All radioactive materials and contaminated soil had been disposed of as radioactive waste.

(2) A survey of the area indicated that all radiation levels were within the limits given in paragraph 4, above.

k. Building T-812½ (Former Radium Storage Vault). A survey of the building indicated that all radiation levels were within the limits given in paragraph 4, above.

l. Drainage System from Building 3192 (Hot Liquid Waste System).

(1) The maximum exposure rate at the bottom of the 100-gallon liquid waste tank was 40 mR/hr.

(2) The maximum exposure rate in the valve pit was 10 mR/hr.

(3) Appropriate radiation warning signs had been installed.

(4) See Plate 4, Appendix A, and Appendix B, for radiation survey data.

(5) The Post Engineer and the RPO had not been informed as to the positioning of the valves or required maintenance.

m. Building 3192 (Hot Cell Facility).

(1) The hot cell had been sealed off which included spot welding the shield door shut and electrical power had been disconnected.

(2) All drains had been plugged.

(3) Alternate means for removing noncontaminated water from the building had been provided.

(4) Appropriate radiation warning signs had been installed.

(5) A survey was conducted outside the hot cell. See Plates 5 and 6, Appendix A, and Appendix B, for radiation survey data.

(6) The post RPO will control access to the area behind Building 3182. He will also control access to the maintenance area of Building 3192 in accordance with Ft. McClellan Regulation No. 385-8, 4 June 1973.

7. RECORDS AND REPORTS.

a. Records were available to reflect the transfer of radioactive materials. AEC Form 741, Nuclear Material Transaction Report, had not been prepared for the transfer of special nuclear material as required by 10 CFR 70.54 and AEC Interagency agreements 1003 and 3039.

b. DA Form 3252-R, Radioisotope Inventory and Leak Test Report, had not been prepared for the transfer of radioactive calibration and test items of supply as required by Chapter 3, AR 725-1, 22 September 1970.

c. Records were available for the disposal of radioactive materials and radioactive waste.

d. An application for an AEC license had been prepared and submitted covering the contamination in the hot cell, underground liquid waste tanks and the storage well near Building 3180.

8. DISCUSSION. Considerable effort and support had been given by all concerned to decontaminate and control the contamination at USACMLCS. Major Wickstrom and SSG Truffa are to be commended for coordinating these efforts.

9. CONCLUSION.

a. All known areas of radioactive contamination had been decontaminated to acceptable levels or are properly controlled. There are no health hazards associated with the uncontrolled use of all areas except the maintenance area of Building 3192, access to which will be controlled by the RPO after closing of the USACMLCS.

b. All material possessed under BML 01-02861-02 covering Bromine 82 or SNM 344 had been transferred or disposed of.

c. All material possessed under BML 01-02861-01, other than residual contamination, had been transferred or disposed of. An application for an AEC license, covering the residual contamination had been prepared and submitted.

10. RECOMMENDATIONS.

a. Provide the Post RPO with all documentation and radiation survey reports of all buildings and other areas where radioactive materials were used, stored or buried.

b. Provide the Post Engineer and the RPO with blueprints and operating procedures for the maintenance of the Hot Liquid Waste System.

c. Prepare AEC Form 741, Nuclear Material Transaction Report, for the transfer of special nuclear material to Aberdeen Proving Ground as required by 10 CFR 70.25 and AEC agreements 1003 and 3039.

d. Prepare and submit DA Form 3252-R, Radioisotope Inventory and Leak Test Report, for the radioactive calibration and test items of supply which were transferred to Aberdeen Proving Ground in accordance with chapter 3, AR 725-1.

USAEHA-RH Radn Sp Study No. 43-075-73/74, USACMLCS, Ft McClellan, AL, 28-31 May 1973

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APPROVED:

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William W. Young
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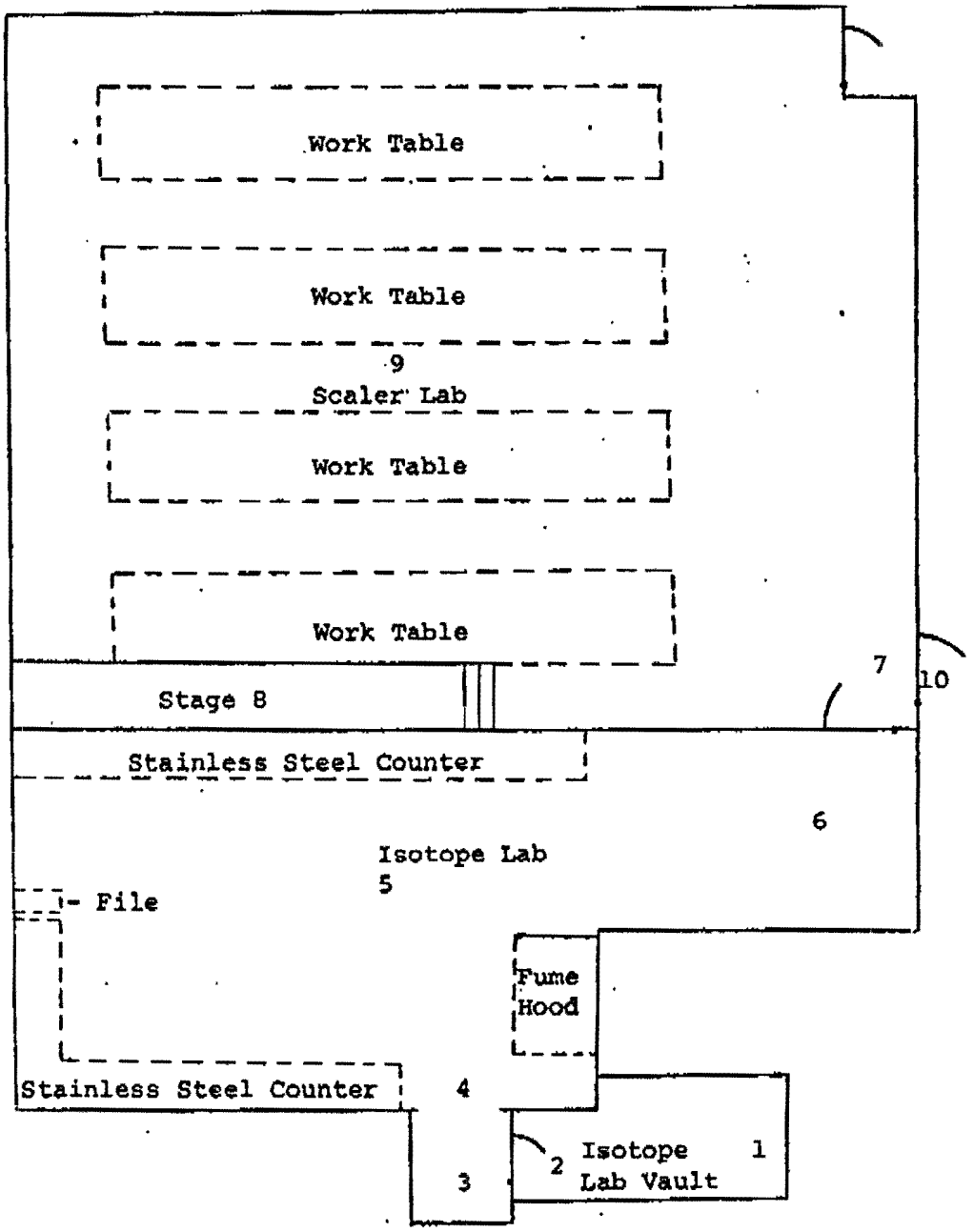
GRAPHICAL ILLUSTRATION

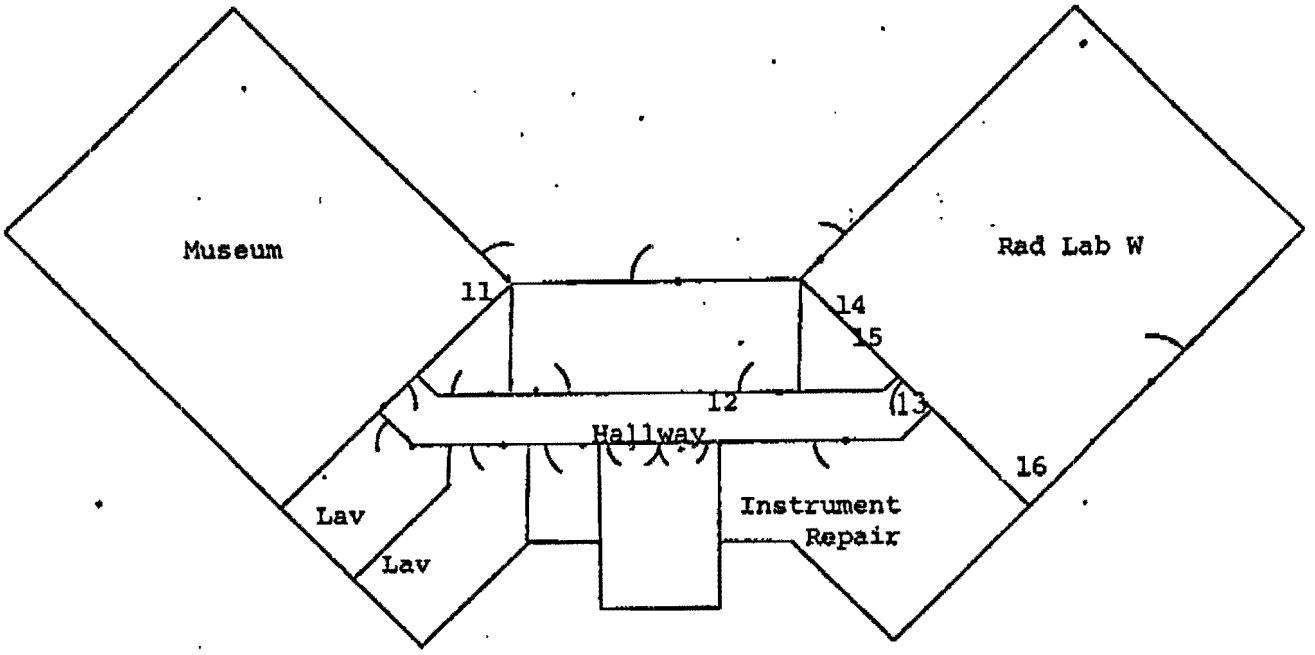


Numbers correspond to smear numbers in Table 1, Appendix B

Scaler & Isotope Labs, Bldg 3181, USACMLCS, Fort McClellan, Alabama	DATE 6 June 1973
U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY UNITED STATES ARMY MEDICAL DEPARTMENT	DRAWN L.W. APPROVED EWB SCALE PLATE 1

USAEHA Form A-27-1, 12 Jul 68

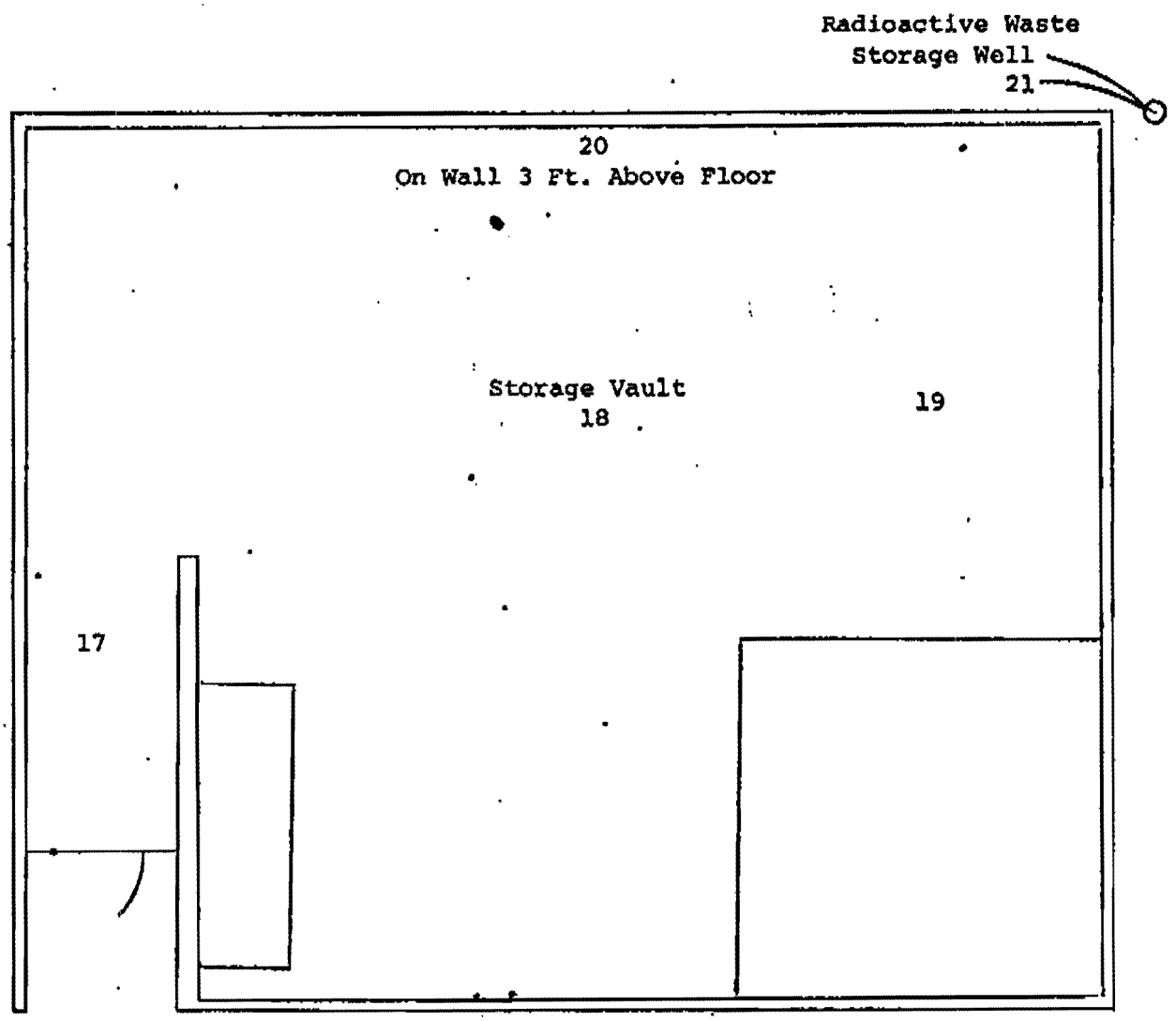
GRAPHICAL ILLUSTRATION



Numbers correspond to smear numbers in Table 1, Appendix B

Museum, Rad. Lab. W, Hallway & Instrument Repair, Bldg 3182, Fort McClellan, Alabama	DATE 6 June 1973
	DRAWN LW
U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY	APPROVED EWB
	SCALE
UNITED STATES ARMY MEDICAL DEPARTMENT	PLATE 2

GRAPHICAL ILLUSTRATION



Numbers Correspond To Smear Numbers in Table 1, Appendix B

Radioactive Material Storage Vault $ Radioactive Waste Storage Well, Bldg 3180, Fort McClellan, Alabama

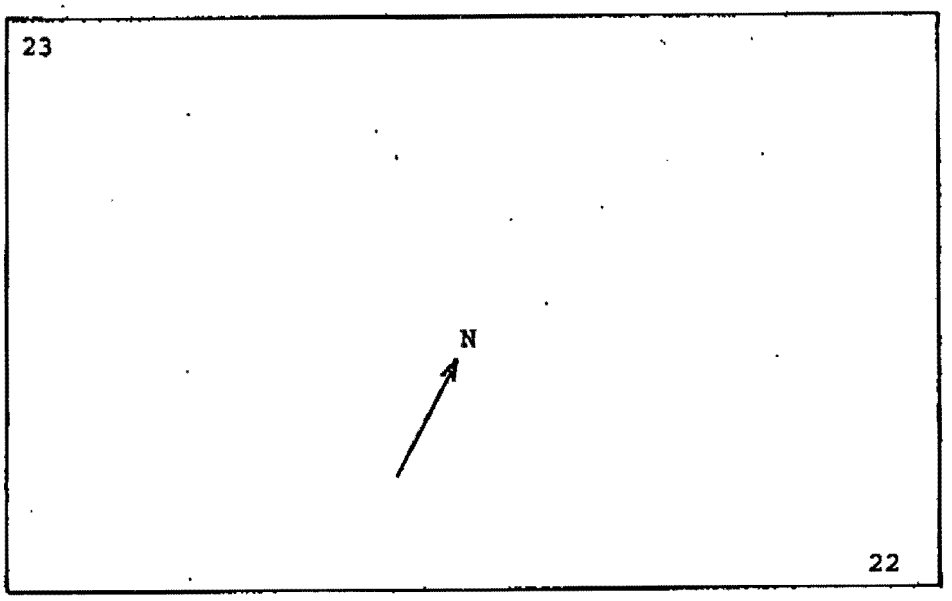
DATE 6 June 1973
DRAWN LW
APPROVED EWB
SCALE
PLATE 3

U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY

UNITED STATES ARMY MEDICAL DEPARTMENT

USAEHA Form A-27-1, 12 Jul 68

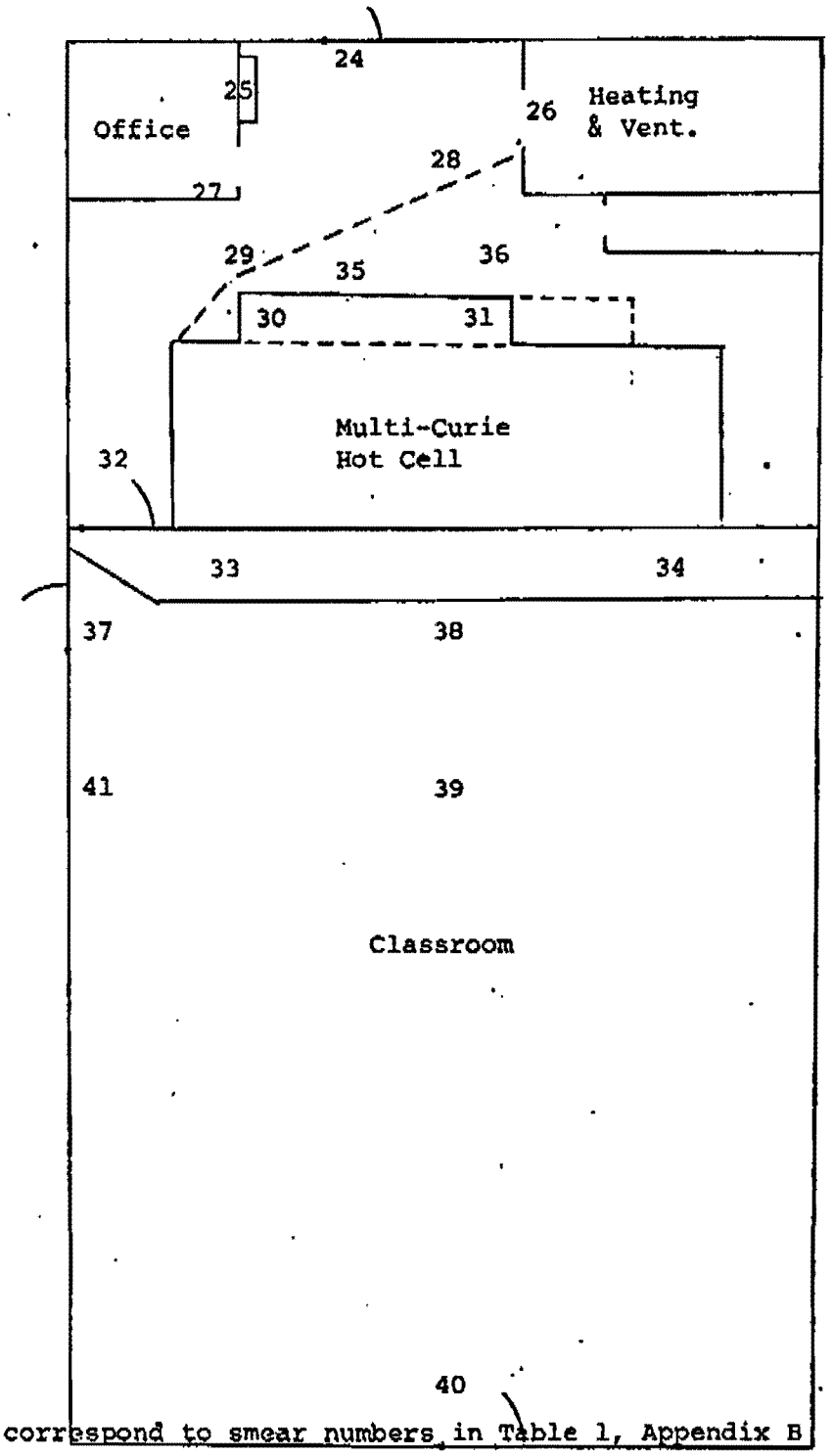
GRAPHICAL ILLUSTRATION



Numbers correspond to smear numbers in Table 1, Appendix B

Floor of Valve Pit for Hot Cell, Fort McClellan, Alabama	DATE 6 June 1973 DRAWN LW
U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY UNITED STATES ARMY MEDICAL DEPARTMENT	APPROVED EWB SCALE PLATE 1

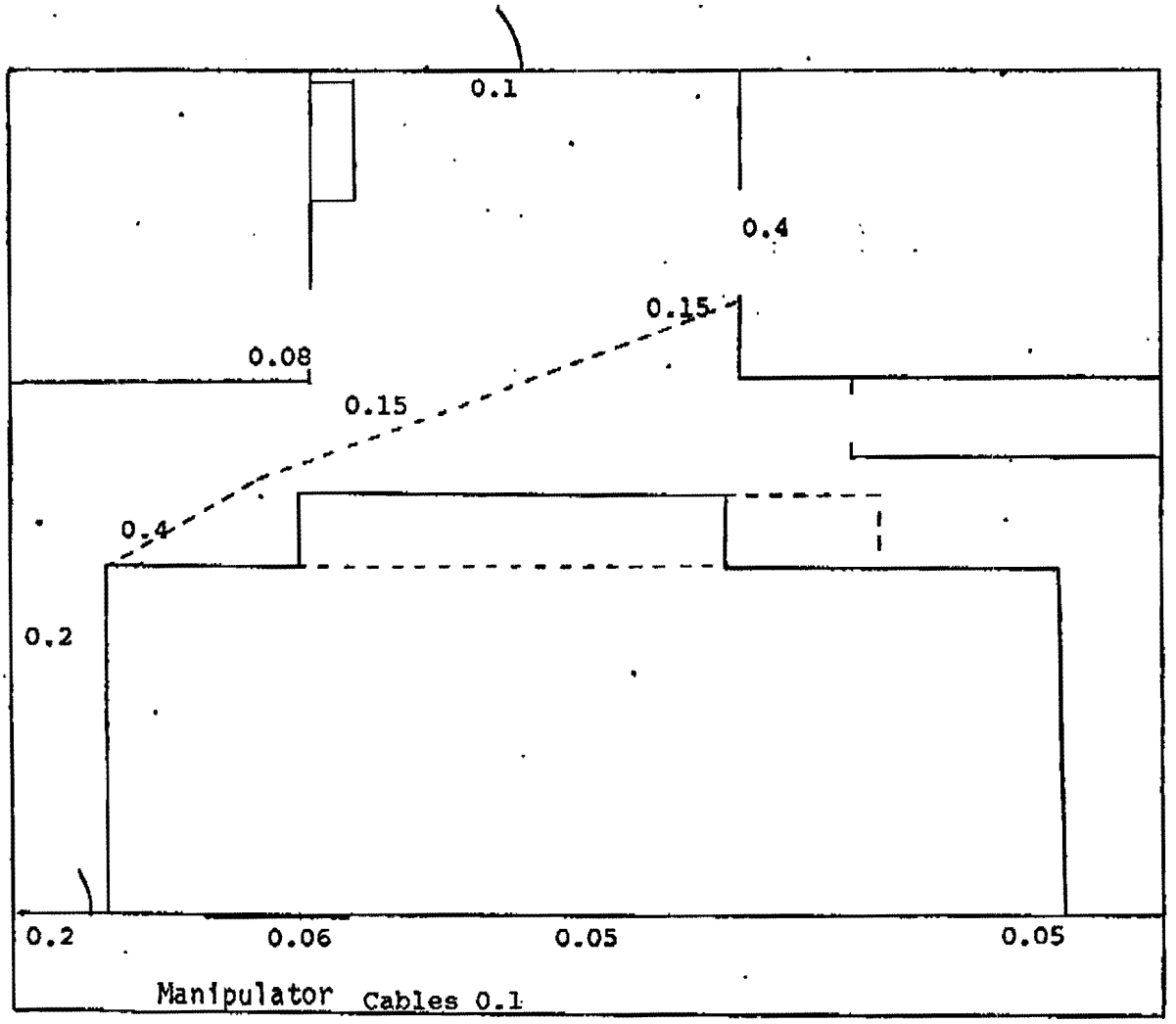
GRAPHICAL ILLUSTRATION



Numbers correspond to smear numbers in Table 1, Appendix B

Hot Cell Facility, Bldg 3192, Fort McClellan, Alabama	DATE 6 June 1973
U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY	DRAWN LW
UNITED STATES ARMY MEDICAL DEPARTMENT	APPROVED EWB
	SCALE
	PLATE 5

GRAPHICAL ILLUSTRATION



All readings in mR/hr and taken at the 3-ft. level
Instrument: Geiger Counter Mod. E-520

Hot Cell Facility, Bldg 3192, Fort McClellan, Alabama	DATE 6 June 1973
U.S. ARMY ENVIRONMENTAL HYGIENE AGENCY UNITED STATES ARMY MEDICAL DEPARTMENT	DRAWN LW APPROVED EWB SCALE PLATE 6

APPENDIX B

RESULTS OF WIPE TEST AND CORE SAMPLE

Sample No.	Location	Results
Wipe #1	Isotope Lab USACMLSC Bldg 3181	20.202dpm/100 cm^2
Wipe #2	Isotope Lab USACMLSC Bldg 3181	8.214 dpm/100 cm^2
Wipe #3	Isotope Lab USACMLSC Bldg 3181	3.774 dpm/100 cm^2
Wipe #4	Isotope Lab USACMLSC Bldg 3181	5.550 dpm/100 cm^2
Wipe #5	Isotope Lab USACMLSC Bldg 3181	10.212 dpm/100 cm^2
Wipe #6	Isotope Lab USACMLSC Bldg 3181	5.994 dpm/100 cm^2
Wipe #7	Scaler Lab USACMLSC Bldg 3181	5.328 dpm/100 cm^2
Wipe #8	Scaler Lab USACMLSC Bldg 3181	4.218 dpm/100 cm^2
Wipe #9	Scaler Lab USACMLSC Bldg 3181	2.644 dpm/100 cm^2
Wipe #10	Scaler Lab USACMLSC Bldg 3181	NQD
Wipe #11	Museum Bldg 3182	12.654 dpm/100 cm^2
Wipe #12	Hallway Water Fountain Bldg 3182	NDQ

Wipe #13	Hallway Bldg 3182	NDQ
Wipe #14	Rad-Lab W, Bldg 3182	NDQ
Wipe #15	Rad-Lab W, Bldg 3182	NDQ
Wipe #16	Rad-Lab W, Bldg 3182	2.644 dpm/100 cm^2
Wipe #17	Rad-Lab Vault Floor, Bldg 3180	NDQ
Wipe #18	Rad-Lab Vault Floor, Bldg 3180	NDQ
Wipe #19	Rad-Lab Vault Floor, Bldg 3180	5.772 dpm/100 cm^2
Wipe #20	Rad-Lab Vault Wall, Bldg 3180	NDQ
Wipe #21	Storage Well Behind Bldg 3180	11.988 dpm/100 cm^2
Wipe #22	Hot Cell Vault Pit Alpha Activity	310.800 dpm/100 cm^2 4.218 dpm/100 cm^2
Wipe #23	Hot Cell Vault Pit	51.060 dpm/100 cm^2
Wipe #24	Hot Cell Bldg 3192	18.648 dpm/100 cm^2
Wipe #25	Hot Cell Bldg 3192	28.860 dpm/100 cm^2
Wipe #26	Hot Cell Bldg 3192	137.640 dpm/100 cm^2
Wipe #27	Hot Cell Bldg 3192	18.870 dpm/100 cm^2
Wipe #28	Hot Cell Bldg 3192	24.420 dpm/100 cm^2
Wipe #29	Hot Cell Bldg 3192	48.840 dpm/100 cm^2
Wipe #30	Hot Cell Bldg 3192	355.200 dpm/100 cm^2
Wipe #31	Hot Cell Bldg 3192	355.200 dpm/100 cm^2

Wipe #32	Hot Cell Bldg 3192	35.520 dpm/100 cm^2
Wipe #33	Hot Cell Bldg 3192	NDQ
Wipe #34	Hot Cell Bldg 3192	2.664 dpm/100 cm^2
Wipe #35	Hot Cell Bldg 3192	51.060 dpm/100 cm^2
Wipe #36	Hot Cell Bldg 3192	20.424 dpm/100 cm^2
Wipe #37	Classroom Bldg 3192	11.544 dpm/100 cm^2
Wipe #38	Classroom Bldg 3192	24.420 dpm/100 ^{2}
Wipe #39	Classroom Bldg 3192	5.550 dpm/100 cm^2
Wipe #40	Classroom Bldg 3192	10.434 dpm/100 cm^2
Wipe #41	Classroom Bldg 3192	8.658 dpm/100 cm^2

		Alpha Activity
Soil #1	One inch from surface	3.0×10^{-6} $\frac{\text{microcurie}}{\text{gram}}$
Soil #2	Two inches from surface	3.8×10^{-6} $\frac{\text{microcurie}}{\text{gram}}$
Soil #3	Three inches from surface	3.4×10^{-6} $\frac{\text{microcurie}}{\text{gram}}$
Soil #4	Four inches from surface	3.9×10^{-6} $\frac{\text{microcurie}}{\text{gram}}$
Soil #5	Five inches from surface	3.9×10^{-6} $\frac{\text{microcurie}}{\text{gram}}$
Soil #6	Six inches from surface	3.9×10^{-6} $\frac{\text{microcurie}}{\text{gram}}$

All activities reported are Beta Activity unless otherwise stated.

NDQ (No Detectable Quantity, less than 2.442 dpm/100 cm^2)

APPENDIX C

ABBREVIATIONS

1. NCRP - National Council on Radiation Protection and Measurements
2. NBS - National Bureau of Standards
3. USAEC - United States Atomic Energy Commission
4. USAEHA - United States Army Environmental Hygiene Agency
5. USASTC - US Army School/Training Center
6. USACMLSC - US Army Chemical Center and School
7. Max. - Maximum
8. Av. - Average
9. dpm - disintegration per minute
10. cm - centimeter
11. mrad/hr - millirad per hour
12. RPO - Radiological Protection Officer
13. mR/hr - milliroengten per hour

Army Regulation 40-5

Medical Services

Preventive Medicine

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Headquarters
Department of the Army
Washington, DC
15 October 1990

SUMMARY of CHANGE

AR 40-5
Preventive Medicine

This revision--

- Consolidates AR 40-5, AR 40-26, and AR 40-554.
- Adds responsibilities for commanders (chaps 1, 9, and 12) and preventive medicine personnel (chaps 1, 2, 4, 5, 6, and 10).
- Adds information on the Preventive Dentistry Program, community health nursing activities, disease and climatic injury prevention and control, medical examinations, spirometry surveillance, community and family health, nonionizing radiation registry, sanitation, and field preventive medicine (chaps 2, 3, 4, 5, 6, 9, 12, and 14).
- Deletes the appendix on ice manufacture sanitation in AR 40-5.
- Rescinds RCS MED-292 (DA Form 3898-R (Report of Tuberculosis Detection and Control)).
- Adds DD Form 2493-1 (Asbestos Exposure, Part I--Initial Medical Questionnaire).
- Adds DD Form 2493-2 (Asbestos Exposure, Part II--Periodic Medical Questionnaire).
- Adds DA Form 3897-R (Tuberculosis Registry).
- Adds DA Form 5931 (Occupational Health Patient Form).
- Adds DA Form 5932 (USAREUR Occupational Health Form).
- Adds DA Form 5933 (Occupational Health Patient Form--Supplemental).
- Adds DA Form 5934 (Korea Occupational Health Encounter Form).
- Adds DA Poster 40-5 (Lyme Disease Warning).

Headquarters
Department of the Army
Washington, DC
15 October 1990

Army Regulation 40–5

Effective 14 November 1990

Medical Services

Preventive Medicine

This UPDATE printing publishes a revision of this publication. Because the publication has been extensively revised, the changed portions have not been highlighted.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the Secretary of the Army

Summary. This regulation is a consolidation of several regulations that cover the Army's preventive medicine program. It establishes practical measures for the preservation and promotion of health and the prevention of disease and injury. This regulation implements Executive Order 12196 and DOD Instructions 6050.5, 6055.1, 6055.5, and 6055.12.

Applicability. This regulation applies to facilities controlled by the Army and to all elements of the Army. This includes military personnel on active duty; U.S. Army Reserve or Army National Guard personnel on active duty or in drill status; U.S. Military Academy cadets; U.S. Army Reserve Officer Training Corps cadets, when engaged in directed training activities; foreign national military personnel assigned to Army components; and civilian personnel and nonappropriated fund employees who are employed by the Army on a worldwide basis.

Internal control systems. This regulation is subject to the requirements of AR 11–2. This regulation contains internal control provisions but does not contain checklists for conducting internal control reviews. These checklists are contained in DA Circular 11–88–7.

Supplementation. Supplementation of this regulation by the principal HQDA officials and major Army commands listed below is permitted. Supplementation is prohibited by all other elements without prior approval of HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258. If supplements are issued, one copy of each will be furnished to HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258.

a. Office of the Chief of Engineers.
b. National Guard Bureau.
c. Office of the Chief, Army Reserve.
d. U.S. Army Training and Doctrine Command.
e. Forces Command.
f. U.S. Army Health Services Command.
g. U.S. Army Materiel Command.
h. U.S. Army, Europe.
i. Eighth U.S. Army.
j. U.S. Army South.

Interim changes. Interim changes to this regulation are not official unless they are authenticated by the Administrative Assistant to the Secretary of the Army. Users will destroy interim changes on their expiration dates unless sooner superseded or rescinded.

Suggested improvements. The proponent agency of this regulation is the Office of The Surgeon General. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258.

Distribution. Distribution of this publication is made in accordance with the requirements on DA Form 12–09–E, block number 2058, intended for command level C for Active Army, Army National Guard, and U.S. Army Reserve (applicable to all Army elements); and command level A for Active Army and Army National Guard and D for U.S. Army Reserve (applicable to medical activities only).

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RESERVED

Chapter 1
Introduction

1–1. Purpose

This regulation—

a. Explains the Army Preventive Medicine Program.

b. Prescribes a comprehensive disease prevention and environmental enhancement plan of action for the U.S. Army at fixed installations and in support of field forces.

c. Establishes military occupational and environmental health standards.

d. Defines the activities within the Preventive Medicine Program functional areas.

e. Provides a basic guide for commanders, the installation medical authorities (IMAs), and other interested persons and agencies.

f. Contains policy, guidelines, and procedures.

g. Provides organizational structure guidance.

h. Describes the functions and responsibilities of preventive medicine (PVNTMED) services at the U.S. Army medical department activity (MEDDAC) and U.S. Army medical center (MEDCEN) level.

i. Identifies Department of the Army (DA) occupational safety and health (OSH) standards.

1–2. References

Required and related publications and prescribed and referenced forms are listed in appendix A.

1–3. Explanation of abbreviations and terms

Abbreviations and special terms used in this regulation are explained in the glossary.

1–4. Responsibilities

a. The Assistant Secretary of the Army for Installations and Logistics, in addition to the responsibilities cited in AR 385–10, will—

(1) Provide executive leadership at the Army Secretariat level to ensure timely compliance with environmental, safety, and occupational health (OH) requirements.

(2) Establish goals and policies and monitor programs for environmental, safety, and OH.

b. The Surgeon General (TSG) is responsible for the overall development and oversight of DA policies and programs for the Army-wide Preventive Medicine Program, which includes—

(1) Disease and climatic injury control.

(2) OH.

(3) Community and family health.

(4) Health information and education.

(5) Nutrition.

(6) Health hazard assessment (HHA).

(7) Medical safety.

(8) Radiation protection.

(9) Pest and disease vector control.

(10) Environmental quality.

(11) Sanitation.

(12) Environmental laboratory services.

(13) Design review.

(14) Field PVNTMED.

(15) Toxicology.

c. The director, Army Safety, Office of the Army Safety Program, will carry out the responsibilities defined in AR 385–10.

d. The Chief, Preventive and Military Medicine Consultants Division, Office of the Surgeon General (OTSG) will—

(1) Formulate policies, standards, regulations, and directives to protect and promote health, improve effectiveness, and enhance the environment of Army personnel.

(2) Exercise staff supervision, program management (including Army Regulation (AR) proponency), and provide consultative services on the Army-wide Preventive Medicine Program described in *b* above.

(3) Monitor and act as point of contact (POC) on health and welfare aspects of environmental quality.

(4) Advise and assist the Army staff in development of DA plans, policies, and regulations on health conservation and control of environmental quality.

(5) Provide international and interservice representation and liaison with professional organizations, Department of Defense (DOD), and other Federal agencies to exchange data on disease control, health maintenance, and environmental medicine.

(6) Determine appropriate preventive measures, pharmaceuticals, and biologics for disease control and initiate requests for supply actions to ensure availability.

(7) Coordinate with the DA Safety Office for compliance with Occupational Safety and Health Act health standards.

(8) Provide administrative support and staff supervision to the Armed Forces Epidemiological Board and the Armed Forces Pest Management Board (AFPMB).

(9) Evaluate and approve requests for epidemiology consultant (EPICON) assistance in the study of disease outbreaks.

(10) Be the OTSG reviewing authority for all environmental documents submitted by DA activities.

(11) Provide Preventive Medicine Program direction through the U.S. Army Health Services Command (HSC) to U.S. Army Environmental Hygiene Agency (USAEHA) and to U.S. Army Aeromedical Center (DA missions), through U.S. Army Japan to U.S. Army Pacific, Environmental Health Engineering Agency (USAPACEHEA), and through 7th Medical Command for 10th Medical Laboratory.

(12) Coordinate the mission services of USAEHA with appropriate elements of the DA staff and outside continental United States (OCONUS) medical support organizations (see para 1–8*c*).

(13) Coordinate directly for USAEHA services provided in support of the DA-level PVNTMED mission.

(14) Provide professional advice concerning materiel and facilities requirements.

(15) Conduct HHA of medical and nonmedical materiel.

e. All major Army command (MACOM) commanders will establish a formal procedure to respond to the USAEHA, 10th Medical Laboratory, and USAPACEHEA report recommendations involving regulatory compliance. Further, the commanders will monitor compliance, and this procedure must provide for—

(1) Tracking the corrective actions involving regulatory compliance and target dates for completing planned action.

(2) Issuing copies of the installation's responses and planned corrective actions to the report originator (USAEHA, 10th Medical Laboratory, or USAPACEHEA) for review and comment.

(3) Reporting the status of uncorrected problems identified in USAEHA, 10th Medical Laboratory, or USAPACEHEA reports in annual environmental and OH management reports as prescribed by Headquarters, Department of the Army (HQDA).

f. The commanding general, HSC will—

(1) Provide health care services and resources for the Army within the continental United Status (CONUS), Alaska, Panama, Puerto Rico, Hawaii, Johnston Island, Guam, and the trust territories of the Pacific.

(2) Plan, program, and budget resources for the USAEHA.

(3) Provide command guidance on the priorities, services, and direction of USAEHA.

g. Commanders at all levels will promote general health and safety and ensure occupational and environmental health within their commands. Commanders will—

(1) Support the Preventive Medicine Program.

(2) Provide adequate resources to implement the program.

(3) Take appropriate actions, based on recommendations of the IMAs, to protect all personnel under their jurisdiction from disease and injury.

(4) If DA Poster 40–5 (Lyme Disease Warning) is used, follow guidance in paragraph 10–18*c*.

h. Commanders of dental activities (DENTACs) will—

(1) Implement and monitor the Army Preventive Dentistry Program per AR 40–35.

(2) Forward a copy of the preventive dentistry report to the appropriate MACOM surgeon.

i. The IMAs are responsible to commanders for the following:

(1) Establishing and operating an effective Preventive Medicine Program. The program will be supported by adequate—

(a) Personnel.

(b) Funding.

(c) Office and laboratory space.

(d) Equipment and supplies.

(e) Transportation and communications.

(2) Recommending solutions for all PVNTMED problems.

(3) Providing PVNTMED guidance based on the functional areas described in this regulation.

j. Heads of installation civilian personnel offices will take the following actions to assist medical personnel with the medical evaluation:

(1) Identify employees expected to be absent from work for 2 weeks or more.

(2) Provide Army medical personnel with Department of Labor (DOL) Forms CA–16 (Authorization for Examination and/or Treatment) and CA–17 (Duty Status Report) (or equivalent medical documentation) for completion by the treating physician for those employees identified.

(3) Make arrangements with employees for examinations when necessary.

k. The commander, USAEHA will—

(1) Provide worldwide support of PVNTMED programs for the Army through consultations, supportive services, investigations, and training in the areas of environmental quality, occupational and environmental health, toxicology, disease prevention, surveillance and control, radiation and environmental sciences, pest management, and laboratory services.

(2) Evaluate the responses to recommendations and resolve situations with MACOMs where responses to recommended corrective actions to USAEHA reports are considered unsatisfactory. When the MACOM and USAEHA cannot agree on proposed corrective actions, the matter with all associated correspondence will be referred to USAEHA through HSC, or the appropriate OCONUS medical support organization, to HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258. OTSG will coordinate with appropriate Army staff and provide a resolution to the MACOM.

(3) Review proposed environmental, safety, and health standards or standards criteria documents published for comment by regulatory agencies and consensus standard organizations. The commander also will provide written technical comment regarding content, feasibility of implementation, and applicability to Army operations. In addition, the technical input of the U.S. Army Safety Center and other DA organizations will be solicited as necessary to facilitate such review.

(4) Conduct the Army Preventive Medicine Residency Training Program in occupational medicine to meet accreditation requirements of the American Council on Graduate Medical Education and approval requirements of the American Osteopathic Association.

l. Commanders, 10th Medical Laboratory and USAPACEHEA will—

(1) Provide theaterwide support of PVNTMED programs for the Army through consultations, supportive services, investigations, and training in the areas of environmental quality, occupational and environmental quality, occupational and environmental health, toxicology, disease prevention, surveillance and control, radiation and environmental sciences, pest management, and laboratory services, as staffing permits.

(2) Evaluate the responses to recommendations and resolve situations with MACOMs where responses to recommended correction actions to 10th Medical Laboratory or USAPACEHEA reports are considered unsatisfactory. When the MACOM and 10th Medical Laboratory or USAPACEHEA cannot agree on proposed corrective actions, the matter with all associated correspondence will be forwarded by 10th Medical Laboratory or USAPACEHEA to HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258. OTSG will coordinate with appropriate Army Staff and provide a resolution to the MACOM.

m. Managers and supervisors are responsible for—

(1) Keeping informed of OSH hazards and requirements in activities under their control.

(2) Training employees in appropriate health and safety practices.

(3) Enforcing the use of protective clothing and equipment.

(4) Providing the civilian personnel office with health and safety information necessary for effective job classification and placement actions.

1–5. Program concept

DA policy is to conserve the fighting strength by controlling preventable disease and injury through command-oriented occupational, environmental, and personal protection programs. The individual's role in maintaining his or her own health and fitness will be emphasized.

1–6. Liaison

a. Liaison will be established and maintained at all organizational levels with medical departments of other military services, and appropriate representatives of Federal, State, and local health and environmental protection authorities (AR 200–1).

b. Participation on Armed Forces disciplinary control boards and liaison with representatives of civil agencies concerned with health and welfare are prescribed in AR 190–24/MCO 1620.2/BUPERINST 1620.4/AFR 125–11/COMDINST 1620.1.

1–7. Recordkeeping

AR 25–400–2 establishes the Modern Army Recordkeeping System (MARKS). This system reorganized the files listed in The Army Functional File System by identifying each file by the number of the directive prescribing that those records be created, maintained, and used. Therefore, records required by this regulation should be filed under the file number 40–5. Refer to AR 25–400–2, appendixes B, C, or D for further guidance.

1–8. Technical assistance

a. Commanders and IMAs at all levels may request technical assistance in matters pertaining to the Preventive Medicine Program through command channels.

b. CONUS requests should be addressed through the MACOM command channels of the activity requesting services to the Commander, USAEHA, Aberdeen Proving Ground, MD 21010–5422, with a copy furnished to Commander, HSC, ATTN: HSCL–P, Fort Sam Houston, TX 78234–6000.

c. OCONUS requests from the—

(1) U.S. Army, Europe (USAREUR) and Seventh Army areas of responsibility will be forwarded to Commander, 7th Medical Command, ATTN: AEMCL–PM, APO New York 09102.

(2) Pacific geographic areas of responsibility will be forwarded to Commander, USAPACEHEA—Sagami, APO San Francisco 96343.

(3) U.S. Army South areas of responsibility will be forwarded to Commander, U.S. Army South, ATTN: SOMD, APO Miami 34004.

d. If 7th Medical Command, USAPACEHEA, or U.S. Army South cannot provide the requested services, the requests will be forwarded to HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258.

Chapter 2
Army Preventive Medicine Program

Section I
Background

2–1. General

The Preventive Medicine Program is a comprehensive program, ranging from simple field sanitation procedures to extensive and complicated monitoring techniques necessary to protect the health and environment of Army personnel. The program is designed to

promote and maintain the fighting [illegible] at maximum effective strength and to maintain the physical [illegible]ell-being of all personnel for whom the Army is responsible.

2–2. Functional areas

The PVNTMED functional areas are as follows:

a. Disease and climatic injury prevention and control. This includes communicable disease control, chronic disease prevention, hospital infection control, nutrition, and prevention of injury related to heat, cold, altitude, and other environmental elements. (See chap 4.)

b. OH. This includes activities designed to focus on the person and his or her occupational environment with the goal of providing a safe and healthful workplace. These activities encompass (refer to chap 5)—

(1) Assessment of OH hazards associated with materiel, raw materials, by-products, processes, and practices inherent to the work environment.

(2) Establishment of criteria for the evaluation and control of occupational exposures.

(3) Determination of requirements for and provisions of medical surveillance and worker health education.

(4) Application of epidemiological principles in evaluating the work environment.

(5) Recognition, evaluation, and prescription of methods to control environmental factors that may adversely affect employee health or well-being.

c. Community and family health. This includes those activities that promote family health and the health of service members within the military community. Also included are those services and activities that establish an interface between the medical treatment facility (MTF) and the community, as well as health programs designed to reach specific individuals or groups at the community level. (See chap 6.)

d. Health information and education. This includes health information programs for the general community and health education programs for the individual soldier. The orientation will be toward behavioral modification to improve health and limit disability by encouraging individual responsibility. (See chap 7.)

e. Nutrition. This includes the development of nutrition standards and policy regarding the soldier's diet both in garrison and in field settings (combat rations). Standards are published in AR 40–25/NAVMEDCOMINST 10110.1/AFR 160–95 and periodically revised as required.

f. HHA. This includes activities to support the Manpower Personnel Integration Program by identifying potential health hazards associated with the life-cycle management of weapons, equipment, training devices, and materiel systems and by recommending appropriate efforts to either eliminate or control such hazards. See AR 40–10 for the following:

(1) Objectives and policies of the Army's Health Hazard Assessment Program in support of the Army materiel acquisition decision process (MADP).

(2) Specific responsibilities of the Army staff, MACOMs, testers and evaluators, and developers for HHAs.

(3) Specific procedures, including the coordination of HHA with system safety and human factors engineering portions of the MADP.

(4) Procedures to identify and eliminate or control health hazards associated with MADP, including preparation of the Health Hazard Assessment Report (Requirement Control Symbol (RCS) MED–388).

g. Medical safety. This includes the Army Medical Department (AMEDD) unit safety program, hospital safety, and medical safety systems for both garrison and field operations. (See chap 8.)

h. Radiation protection. This encompasses both ionizing and nonionizing radiation, to include licensing and authorizations, personal protective measures, radiation detection and measuring equipment, control of radiation sources, radiation shielding, and operational surveillance. (See chap 9.)

i. Pest and disease vector prevention and control. This includes prevention and control of disease vectors and animal reservoirs, integrated pest [illegible]gement (IPM) operations and research, disease vector surve[illegible]ce, pest quarantine, and retrograde cargo inspection and treatment. A close working relationship with the AFPMB is maintained to ensure DA input into DOD pest management programs. (See chap 10.)

j. Environmental quality. This includes all AMEDD subprograms in support of the Army environmental program that has as its purpose the protection and preservation of environmental quality related to the health and welfare of DA personnel. (See chap 11.)

k. Sanitation. This includes subprograms to improve environmental conditions for the maintenance of health. (See chap 12.)

l. Environmental laboratory services. This includes laboratory services required to support all PVNTMED programs that are provided by the installation, USAEHA, and other regional laboratories. The level of support required is determined by regulatory agency guidance and DA directives. (See chap 13.)

m. Design review. This includes review of the health aspects of drawings, plans, and related technical documents for projects such as food service, troop housing, MTFs, and many industrial manufacturing and maintenance facilities. PVNTMED personnel participate in this program at the installation, regional, MACOM, and DA level.

n. Field PVNTMED. This includes training requirements and operational responsibilities for units deployable to the field. (See chap 14.)

o. Toxicology. This includes support to the Preventive Medicine Program by means of—

(1) Toxicological assessments and laboratory evaluations of potentially hazardous materials.

(2) Toxicity clearances and health risk assessments, as appropriate. USAEHA may be required to conduct animal testing, toxicity studies, and literature reviews to support this program.

Section II
PVNTMED Levels of Support and Special Resources

2–3. General

The Preventive Medicine Program is organized and staffed on a decentralized basis. PVNTMED services are provided on the following three levels:

a. First level. Local PVNTMED services are provided on the basis of tables of organization and equipment (TOE) and tables of distribution and allowances (TDA). It also includes services provided by PVNTMED TOE teams and MEDDACs when assigned in a direct support role.

b. Second level. PVNTMED officers assigned to CONUS MEDCENs and the 7th Medical Command (USAREUR) serve as regional consultants in PVNTMED. Consultation and field services in occupational and environmental health are obtainable from USAEHA; 10th Medical Laboratory, USAREUR; and USAPACEHEA, Japan. This level of service is also provided by PVNTMED TOE teams when assigned a general support role for deployed forces.

c. Third level. These are services provided worldwide by USAEHA and EPICON assistance or service. The specific missions of these organizations are described in paragraphs 1–4*k* and 2–4.

2–4. Epidemiology consultant service

a. EPICON of the Walter Reed Army Institute of Research is the central epidemiologic investigation resource for the U.S. Army. It provides third level assistance in support of AMEDD organizations worldwide.

b. The scope of EPICON activities includes—

(1) Infectious diseases.

(2) Occupational diseases (in collaboration with USAEHA).

(3) Chronic diseases and nonbattle injuries.

(4) Public health aspects of disaster relief operations.

(5) Design of medical studies.

(6) Other research protocols involving application of epidemiologic methods.

c. EPICON, when provided, will be under ational control of the appropriate requesting IMA who will p de local administrative and logistical support. Requests for EPICON assistance should be forwarded with appropriate command coordination, using communication channels appropriate to the urgency of the situation, to HQDA (SGPS-PSP), 5109 Leesburg Pike, Falls Church, VA 22041-3258 (AUTOVON 289-0123). Direct, preliminary telephonic communication with EPICON is authorized (AUTOVON 291-3553).

2-5. Intercommand relationships
Relationships regarding PVNTMED services crossing MACOM lines will be addressed in a memorandum of understanding.

Section III
PVNTMED Personnel

2-6. General
Maximum use will be made of the professional capabilities of PVNTMED personnel in direct support of the Preventive Medicine Program. Additional duties will not be allowed to interfere with the performance of professional duties outlined in AR 611-101.

2-7. Activities of the Chief, PVNTMED service
a. The chief will establish and direct the Preventive Medicine Program for the supported health service area as described in this regulation.

b. The chief or his or her designee should—

(1) Serve as consultant and provide liaison to the installation commander, his or her staff, and tenant activities in PVNTMED.

(2) Establish and maintain liaison with appropriate Federal, State, and local health authorities.

c. The chief may be the AMEDD representative on installation boards, councils, and committees.

d. When a residency-trained PVNTMED officer or occupational medicine officer (area of concentration (AOC) 60C or 60D) is assigned, he or she will direct the program. Otherwise, the chief will be an AMEDD officer, usually the senior officer, assigned to the PVNTMED service.

Chapter 3
Reports

Section I
Special Telegraphic Reports (RCS MED-16)

3-1. General
Submission of the RCS MED-16 requires liaison among PVNTMED personnel, the patient administration division of the MTF, and the medical staff (AR 40-400, chap 6).

3-2. Reporting guidance
Reporting requirements for the special telegraphic reports of selected conditions, reportable outbreaks, and reportable deaths are outlined in AR 40-400.

Section II
Command Health Reports (RCS MED-3)

3-3. General
This section establishes procedures for the periodic reporting of all matters pertaining to the health of the command. Command health reports (CHRs) are forwarded through command channels and are designed to—

a. Inform commanders of health conditions within their commands and recommend measures for improvement.

b. Provide commanders an opportunity to record actions taken for improvement and to inform higher headquarters of support required to implement recommendations.

c. Provide information unsolved problems, new developments, and other mat s relating to command health effectiveness.

d. Provide data for the periodic assessment of Preventive Medicine Program effectiveness.

e. Serve as feeder reports for preparation of a consolidated CHR.

3-4. Preparing agencies
a. The CHR for fixed installations will be prepared and signed by the director, health services (DHS) and addressed to the installation commander.

b. The CHR for battalion-sized or larger units will be prepared and signed by the unit surgeon and addressed to the unit commander.

c. The CHR for units or installations without unit surgeons or DHSs will be included in the CHR of the unit surgeon or DHS rendering primary medical services. The CHR will be addressed to the commander of the supported installation.

d. For MACOMs and Army components of unified commands as listed in AR 10-5, chapter 3, a consolidated CHR will be prepared.

e. Installations or activities such as separate recruiting offices, military entrance processing stations, Reserve Officers' Training Corps units, and other off-post activities located at civilian facilities not under control of Government-owned, contractor-operated installations are exempt from CHR preparation requirements of this regulation.

3-5. Frequency
a. Installation and unit CHRs will be prepared the last day of each calendar month.

b. Consolidated CHRs for MACOM and Army components of unified commands will be prepared the last day of each calendar quarter.

3-6. Due dates
a. Commanders of MACOMs will establish due dates for feeder reports.

b. Consolidated reports will be dispatched quarterly by the MACOM to HQDA (SGPS-PSP), 5109 Leesburg Pike, Falls Church, VA 22041-3258, with a copy furnished to Commander, HSC, ATTN: HSCL-P, Fort Sam Houston, TX 78234-6000, to be received not later than 30 working days following the end of the report period. Copies of OCONUS consolidated reports will not be furnished to the HSC, with the exception of those relating to the U.S. Army South.

3-7. Command routing
a. Commanders will endorse the CHRs, as originally submitted by the IMA through command channels, and will note approval or disapproval and actions taken to improve conditions and correct reported deficiencies.

b. Commanders of major Army field commands and Army components of unified commands will establish internal routing and consolidation procedures for CHRs within their command. The reports will be screened and the data used as a basis for comments to be submitted to the next higher command.

c. An information copy of the CHR prepared by HSC MTFs and activities will be forwarded to the Commander, HSC, ATTN: HSCL-P, Fort Sam Houston, TX 78234-6000.

3-8. Preparation instructions
The CHR will be prepared by the unit surgeon and/or DHS and will include current information on PVNTMED matters. Outstanding accomplishments, new developments, and trends will be recorded as well as unsatisfactory conditions and recommended corrective measures. As a rule, unsatisfactory conditions that are identified and are readily correctable locally need not be reported. Unsatisfactory health conditions that persist and cannot be corrected locally because of the lack of resources must be reported to

higher headquarters. If unsatisfactr ealth conditions are reported, suitable corrective measures be recommended at the conclusion of the CHR. The CHR is not intended to convey routine or repetitious information regarding satisfactory conditions. If no comment is required under a particular heading, the heading will be omitted; a negative comment is not required. To provide uniformity, the following headings and paragraph designations will be used (when applicable):

a. Health of the command.

(1) Personal hygiene.

(a) Sanitary discipline.

(b) Condition and adequacy of personal protective equipment (PPE) and clothing.

(2) Status of training of unit field sanitation teams (para 14–3*b*).

(3) Disease.

(a) If there has been an increased incidence of any disease of military importance among military or civilian personnel, the situation will be reported from an epidemiological viewpoint (such as diagnosis (presumptive or confirmed), scope, population distribution, immunization status (when applicable), control measures, and course of the outbreak).

(b) Note the occurrence of any unusually severe reactions to immunizations.

(c) Nosocomial infection rate will be reported as specified in paragraph 4–11 (by those hospitals conducting total surveillance).

(4) Injuries.

(a) Heat and cold injury. Discuss cases from an epidemiological viewpoint, noting trends, host and environmental factors, and status of training and education.

(b) Other injuries. Discuss injuries that are significant or unusual, such as trainees' stress fractures and soldiers' eye injuries.

b. Occupational health.

(1) Status of completion or revision of the Health Hazard Information Module (HHIM), which is part of the Occupational Health Management Information System (OHMIS).

(2) Design review activities.

(3) Significant trends in incidence of occupational illness or injury.

(4) Status of Occupational Safety and Health Administration (OSHA) abatement plans of occupational hazards or any other significant problems.

c. Environmental sanitation.

(1) Water supply, including sources and method of treatment, fluoridation, adequacy of quantity and quality, and changes or additions to the water supply system. Variations from standards will be reported under AR 420–46, paragraph 5*d*.

(2) Liquid waste disposal, including—

(a) Type of system and method of treatment.

(b) Size and type of receiving streams.

(c) Possible health hazards and public nuisances.

(d) Changes or additions to the system.

(3) Industrial-type waste disposal originating on military installations and incident to military operations (including source, amount, type, and method of treatment or disposal).

(4) Solid waste management, including—

(a) Method and place of disposal.

(b) Truck washing facilities.

(c) Interim storage facilities.

(d) The use of volume reduction equipment.

(e) Specialized collection vehicles.

(5) Housing and other buildings, including—

(a) Type and condition.

(b) Floor space available per person.

(c) Ventilation.

(d) Heating.

(e) Lighting.

(f) General cleanliness.

(g) Adequacy of latrine and laundry facilities, as applicable.

(6) Food service facilities, including—

(a) Type, condition, and adequacy of food service buildings.

(b) Equipmen include adequacy of refrigeration, dishwashing facilities, latr facilities, insect and rodent control, and waste disposal).

(7) Specific sanitation problems related to—

(a) The operation of recreational facilities.

(b) Child development centers.

(c) Barber and beauty shops.

(d) Ice plants.

(e) Mobile home parks.

(f) Nuisances adjacent to the installation.

(8) Sanitation problems unique to health care facilities, including—

(a) Collection and disposal of infectious waste.

(b) Housekeeping practices.

(c) Use of disinfectants and sterilants.

(d) Ventilation deficiencies.

(e) Significant pest infestations (particularly in patient-sensitive areas) and efforts to control such infestations.

(9) Swimming pools and bathing beaches (fresh or salt water), including—

(a) Types and construction of pools.

(b) Sanitary and bacteriological quality of water.

(c) Adequacy of safety features.

(d) Bathhouse and shower construction.

(e) Furnishing and operation.

d. Environmental enhancement.

(1) Visits and inspections by Federal, State, or local environmental pollution control agencies with recommendations and corrective action.

(2) Complaints received alleging pollution from sources under Army jurisdiction, and corrective action.

e. Pest management and pesticide monitoring. Concerns include—

(1) Significant vector-borne disease occurrences.

(2) Effectiveness of pest surveillance and control programs to include availability and problems with pesticides or pesticide dispersal equipment.

(3) Environmental incidents resulting from the use, storage, or disposal of pesticides.

(4) Confirmed or suspected health-related problems associated with occupational or other exposure to pesticides.

f. Nutrition.

(1) Significant observations on troop nutritional status and adequacy of the diet.

(2) Special actions taken concerning nutritional surveys and their findings, changes in ration components with reasons, and observations regarding the Army weight control program.

g. Community health nursing. The community health nurse (CHN) will report pertinent information concerning specific programs and additions and deletions. Problem areas, including proposed solutions and conditions that adversely affect the health of the active duty military and their family members, and retirees and their family members, will also be reported.

h. Liaison activities. Indicate liaison activities with other military and civilian health authorities.

i. PVNTMED staffing problems. Discuss all persistent staffing problems that interfere with attainment of PVNTMED goals.

j. New and improved PVNTMED measures. Reporting will be limited to measures not reported elsewhere and include a brief description of measures, use, and effectiveness.

k. Veterinary data.

(1) Information concerning control of animal diseases communicable to man will consider—

(a) The origin and progress of a disease.

(b) Scope and results of any tests.

(c) Methods of treatment.

(d) The nature and efficiency of quarantine (if applicable).

(e) The number of cases and disposition.

(2) The report will also include information on unusual conditions affecting food sources, storage and handling facilities, and food items that may endanger the health of the command.

l. Preventive Psychiatry Program. Include the adequacy of the Preventive Psychiatry Program to maintain and improve command psychological effectiveness.

m. Other. Include subjects not covered under other headings.

n. Recommendations. Recommendations will be made for the correction of deficiencies noted and for improvement of existing or the adoption of new preventive and sanitary measures.

o. Supporting material. Supporting material required to clarify the narrative report will be appropriately identified, cross-referenced, and included as an annex to the report.

3-9. Special command health notification

Notification concerning special or potentially serious health problems will be transmitted telephonically, followed within 72 hours by a written report, by the IMA to the unit and installation commanders. The purpose is to inform the commander concerning serious sanitary deficiencies, environmental or occupational hazards, potential epidemic conditions, or other serious situations that may affect the health of the command. The report will include recommendations and action taken. The installation commander will forward information copies through command channels to HQDA (SGPS-PSP), 5109 Leesburg Pike, Falls Church, VA 22041-3258, and Commander, HSC, ATTN: HSCL-P, Fort Sam Houston, TX 78234-6000.

Section III
DA Form 3076 (Army Occupational Health Report) (RCS MED-20)

3-10. General

This report provides essential information for TSG to discharge staff responsibilities for planning, directing, and supervising health services in the DA Occupational Health Program as required by AR 10-5.

3-11. Preparing agencies

All Army MTFs responsible for providing OH services for civilian or active duty military personnel as authorized in chapter 5 will prepare this report on a biannual basis.

3-12. Preparation instructions

Instructions for preparation of this report and DA Form 3075 (Occupational Health Daily Log) are as follows:

a. Purpose.

(1) DA Form 3076 provides specific data for use by installation and MEDDAC personnel, and higher headquarters for definitive analysis and review of the Occupational Health Program. This tool should aid in evaluating incidence and trends of occupational illnesses and injuries, the extent and effectiveness of other health maintenance activities, and staffing and related needs and resources.

(2) A local system using the DA Form 3075 report and other appropriate reports will be used by the Occupational Health Program coordinator in collaboration with the patient administration officer and chief, department of primary care and community medicine (DPCCM), as applicable, to record required data on a daily and monthly basis. This should include follow-up and/or supportive information (such as, explanatory descriptions of occupational illnesses, medical surveillance evidence of overexposure to hazards, lost-time eye injuries, and new cases of noise-induced hearing loss). Planning for special one-time activities, such as a disease screening program, should include a system to record all required reporting data.

(3) Occupational injury and illness data will be coordinated with the safety officer to assure complete and accurate recording by both the safety office and the MTF.

(4) Special telegraphic reports of occupational illness will be submitted per AR 40-400.

b. Preparing agencies.

(1) All Army MTFs responsible for providing OH services for civilians or active duty military personnel as authorized in chapter 5 will maintain a DA Form 3075 and will prepare a biannual DA Form 3076. This does not include Army MTFs located at and providing OH services primarily for non-DA (such as the Defense Logistics Agency (DLA)) installations.

(2) The DA Form 3076 will be completed by the medical officer or physician in charge of the Occupational Health Program. If there is no full-time medical officer or civilian physician, the person most knowledgeable about the program (normally the senior OH nurse) will complete the report. All data will be based on DA Form 3075 and other records normally kept by the MTFs providing OH services or by other installation activities, such as the civilian or military personnel office, safety office, audiology clinic, emergency clinic, etc.

c. Consolidated reports.

(1) Where there is more than one MTF at an installation providing OH services for civilian employees or active duty military personnel, each will prepare a separate DA Form 3076. (Examples include troop medical clinics, OH clinics, and outpatient clinics.) A consolidated report for the installation will be submitted with a copy of the DA Form 3076 report for each MTF.

(2) The person responsible for preparing the consolidated report will develop a procedure to assure all required data are collected and reported by all MTF activities providing OH services. This will include—

(a) Instructing all supporting activities regarding reporting requirements and assisting them as necessary.

(b) Providing the supporting activities with copies of DA Forms 3075 and 3076 and other forms, when pertinent, for data collection.

(c) Coordinating with the civilian and military personnel offices, safety officer, radiation protection officer (RPO), audiologist, etc., to obtain essential data.

(3) Except where pertinent or feasible, the MTF feeder reports to the consolidated report are not required. For example, staffing for the troop medical clinic, emergency room, outpatient clinic, etc., will not ordinarily be counted ((1) above).

(4) The chief, PVNTMED will review the completed DA Form 3076 with the PVNTMED and OH staff and, where pertinent, with department or clinic staff to assure completeness and accuracy of the report and to determine needs for changes or revisions in the OH services and/or procedures.

d. Reporting period and routing. The DA Form 3076 will be prepared semiannually and dispatched no later than 17 working days following the last day of June and December.

(1) *CONUS.* MTFs will forward the DA Form 3076 as follows:

(a) The original and one copy through the appropriate commander, MEDCEN or MEDDAC to the Commander, USAEHA, ATTN: HSHB-OM, Aberdeen Proving Ground, MD 21010-5422.

(b) One copy to HQDA (SGPS-PSP), 5109 Leesburg Pike, Falls Church, VA 22041-3258.

(c) One copy to the Commander, HSC, ATTN: HSCL-P, Fort Sam Houston, TX 78234-6000.

(d) One copy through command channels to the surgeon of the appropriate MACOM. (The MACOM surgeon in turn will review the DA Form 3076 and forward specific recommendations or comments to HQDA (SGPS-PSP), 5109 Leesburg Pike, Falls Church, VA 22041-3258 with one copy to Commander, USAEHA, ATTN: HSHB-OM, Aberdeen Proving Ground, MD 21010-5422.)

(2) *OCONUS.* MTFs will submit the DA Form 3076 through command channels to HQDA (SGPS-PSP), 5109 Leesburg Pike, Falls Church, VA 22041-3258, with one copy to the Commander, USAEHA, ATTN: HSHB-OM, Aberdeen Proving Ground, MD 21010-5422.

e. Preparation instructions. Data line items on DA Forms 3075 and 3076 correspond, and the instructions for the two forms are the same.

(1) *Support data.* Items 1 through 12, DA Form 3076, contain data reported for eligible served and assigned staff and will be based on status as of the last day of the report period. The unnumbered items on DA Form 3075 are self-explanatory.

(2) *Injury and illness.* Items 13 through 26 are to be used for recording occupational fatalities, injuries, and illnesses. Nonoccupational illness and injury visits are to be recorded in item 27.

(3) *Elective health programs.* Items 28 through 35 include services provided that are not job-related such as light duty workers receiving audiograms and/or vision screening who are not exposed to noise and/or eye hazards at work.

(4) *OH services.* Items 36 through 56 on DA Form 3076 and items 37 through 41, 43, 45 through 48, 50 through 52, and 54 through 56 on DA Form 3075 contain data about job-related health services.

(5) *Remarks.* Attach additional sheets as necessary to provide required data noted above. Also, include pertinent information regarding staffing, staff training, specific OH problems or accomplishments, epidemiological data, and so forth.

Section IV
DA Form 3761 (Army Health Nursing Activities) (RCS MED-371)

3-13. General
DA Form 3761 and accompanying narrative provides essential information regarding the Community Health Nursing Program. DA Form 3761 is used to plan and evaluate the overall nursing program and specific nursing activities within the program. It is also used as a feeder report for other MEDDAC and MEDCEN required reports.

3-14. Preparing agencies
Each community health nursing section of a PVNTMED service will prepare the DA Form 3761 on a monthly basis.

3-15. Preparation instructions
Instructions for preparing DA Form 3761 are found in AR 40-407, paragraph 7-5.

Chapter 4
Disease and Climatic Injury Prevention and Control

Section I
Disease Prevention and Control

4-1. General
a. Epidemic potentials include those diseases and injuries that can seriously compromise the ability of a military unit to carry out its mission. Preventive measures are essential. Exercise of command authority based on sound medical recommendations, troop discipline, and provision of PVNTMED services in both garrison and field settings is critical.

b. Disease conditions of greatest epidemic potential include, but are not limited to: Acute respiratory diseases, diarrheal diseases, hepatitis, and vector-borne diseases. Meningitis, influenza, viral hepatitis, malaria, dysentery, and dengue have particular military significance because of their high epidemic potential and associated morbidity.

c. Other diseases of military concern have less explosive impact, but they do have high public health importance due to transmissibility. These include sexually-transmitted diseases (STDs), human immunodeficiency virus (HIV) infection, and tuberculosis. Other diseases, such as rabies and viral hemorrhagic fever, may become particularly significant in epidemic situations due to the high mortality associated with such infections.

d. Preventive measures include personal protective measures (for example, personal hygiene, immunizations, prophylactic medications, and repellents) and environmental control measures (for example, disinfection of water supplies, proper food handling practices, area vector control, and other aspects of field sanitation). Effective implementation of preventive measures require command emphasis and command, unit, and individual soldier education on ways to prevent illnesses.

4-2. Guidance
a. Disease prevention and control measures will ordinarily be determined at DA level and be set as the standards for the Army. Unless otherwise directed by HQDA, the principles and procedures recommended in the prevention and control of communicable diseases, as specified in the latest edition of Control of Communicable Diseases in Man, published by the American Public Health Association (field manual (FM) 8-33/NAVMED P-5038), will be followed. More specific guidance may be obtained from OTSG, ATTN: SGPS-PSP-D.

b. PVNTMED services and teams will be familiar with disease prevention and control measures and will provide advice and guidance to commanders, units, and individuals on the prevention of communicable diseases. PVNTMED services and teams will also provide guidance to units on disease and environmental threats, specific preventive measures, and medical surveillance during and following deployments.

4-3. Functions
a. All commanders will—

(1) Direct the institution and implementation of required disease preventive and control measures.

(2) Ensure compliance of all eligible personnel with prescribed individual protective measures.

(3) Enforce compliance with immunization requirements under AR 600-20 and AR 40-562/NAVMEDCOMINST 6230.3/AFR 161-13/CG COMDTINST M6230.4D.

(4) Provide protective clothing, equipment, supplies, and facilities when required.

(5) Provide orientation to their units regarding the prevention of heat and cold injuries (app B).

b. IMAs will—

(1) Identify potential disease and environmental threats and/or conditions of epidemic potential, based on epidemiological information, medical intelligence, and knowledge of military activities.

(2) Recommend individual protective measures and environmental control measures to the command, based on the health threat.

(3) Conduct continuous medical surveillance of individuals and units in high risk situations and/or units operating in environments where the potential for acquiring serious infectious diseases is significant.

(4) Conduct epidemiological investigations of suspected disease outbreaks or disease occurrences capable of reducing military effectiveness or readiness.

(5) Report unusual occurrences of diseases or environmental health problems to commanders so corrective action can be taken immediately.

c. Individuals will—

(1) Comply with all preventive measures defined by command authorities.

(2) Avoid unnecessary exposure to infectious agents, hosts, or vectors of disease.

(3) Practice good personal hygiene.

4-4. Immunization and chemoprophylaxis requirements
For policies and procedures to be followed in immunization and disease chemoprophylaxis, see AR 40-562/NAVMEDCOMINST 6230.3/AFR 161-13/CG COMDTINST M6230.4D. Immunization requirements for Active Duty and Reserve personnel contained in AR 40-562/NAVMEDCOMINST 6230.3/AFR 161-13/CG COMDTINST M6230.4D or as directed by HQDA take precedence over guidance provided by the U.S. Public Health Service (USPHS) or the Centers for Disease Control, Atlanta, Georgia.

4-5. Specific programs
a. Acute respiratory disease (ARD).

(1) ARD can result in considerable manhours lost due to morbidity from various infectious agents and their high transmission potential. Agents of greatest military significance are: Influenza, parainfluenza, adenoviruses, streptococcal infections, and

mycoplasma infections. Other viral and bacterial agents are capable of causing ARD.

(2) The ARD season in the northern hemisphere normally extends from October through March, although cases can occur throughout the year. Recruits and personnel living in confined quarters are particularly susceptible to outbreaks of ARD.

(3) The Army ARD Surveillance and Control Program will be well-defined at all basic training installations and will consist of—

(a) Monitoring of ARD rates among basic trainees on a daily and weekly basis. Reports will be provided to appropriate higher headquarters commands on a regular basis.

(b) Monitoring of Group A streptococcal infections among basic trainees. Particular attention will be directed at changes in throat culture recovery rates and the presence of rheumatogenic strains of Group A streptococcal organisms. High prevalence of streptococci may indicate the need for penicillin (bicillin) prophylaxis. Such prophylaxis will be instituted at the direction of HQDA.

(c) Influenza and adenovirus immunizations to all recruits (AR 40–562/NAVMEDCOMINST 6230.3/AFR 161–13/CG COMDTINST M6230.4D).

(d) Implementation of any new surveillance or immunization program directed by HQDA.

(4) All Army installations will implement a monitoring system to detect unusual outbreaks of ARD. This ordinarily will require coordination with clinics and emergency rooms and monitoring of overall rates of school or work absenteeism, particularly during the ARD season. IMAs will report any unusual ARD activities by Special Telegraphic Report of Selected Condition (RCS MED–16).

(5) Commanders will monitor compliance with the annual influenza immunization program to ensure a high level of participation.

b. Meningococcal infection.

(1) Meningococcal infection is associated with significant morbidity and mortality with the development of life-threatening meningitis and/or disseminated infection. The disease is highly transmissible through the airborne route, and is, therefore, a disease of special concern in those environments where personnel are confined in limited space or are in close physical contact with each other, as in household settings.

(2) The recruit training environment is of particular concern and has been the site of many outbreaks in the past. Meningococcal vaccine is, therefore, routinely administered year-round to basic trainees. HQDA will define other settings where meningococcal vaccine should be routinely administered.

(3) IMAs will be familiar with the requirements for immunization and chemoprophylaxis specified in AR 40–562/NAVMEDCOMINST 6230.3/AFR 161–13/CG COMDTINST M6230.4D.

(4) Meningococcal infections will be promptly reported by RCS MED–16 report (AR 40–400). All Neisseria meningitidis specimens will be submitted for group typing. Specimens subcultures will be shipped to: The Walter Reed Army Institute of Research, Bacterial Disease Division (ATTN: SGRD–UWF–A), Washington, DC 20307–5100. Information on the patient's status should be included. Prior to shipment, laboratories should call the Bacterial Disease Division at AUTOVON 291–3303.

c. Malaria.

(1) Malaria represents a major threat to military readiness. Malaria chemoprophylaxis will be instituted when personnel are at risk of contracting malaria. Although falciparum malaria is generally regarded as a more serious potentially life-threatening type of malaria, vivax malaria is also considered a military threat due to its ability to incapacitate susceptible hosts. Therefore, chemoprophylactic measures will be directed against both forms of malaria.

(2) Specific drugs to be used will be based on the prevalence of specific types of malaria in the area of anticipated travel and the current drug resistance patterns. These prophylactic drugs include chloroquine, primaquine, chloroquine/primaquine (combination form), doxycycline, Fansidar, and mefloquine (investigational drug status). Guidance on most appropriate chemoprophylactic medication will be provided by HQDA (contact the Disease Control Consultant, AUTOVON 289–0125).

(3) Commanders will—

(a) Ensure that all personnel in their command receive health education on the prevention of malaria, and are aware of the need to seek medical attention should they experience any febrile illnesses during or following assignment to malarious areas.

(b) Ensure that all individuals in their command are taking appropriate drug prophylaxis during and following periods of travel to malarious areas.

(c) Ensure that preventive measures, to include the use of military-approved repellents, the use of bednetting, and the proper wearing of protective clothing, are followed. In some situations, mosquito control measures may be indicated; such area control measures will be conducted by appropriate preventive medicine teams.

(4) IMAs will report any suspected or confirmed cases of malaria by RCS MED–16 (AR 40–400).

d. Viral hepatitis.

(1) Viral hepatitis may be caused by several different viruses capable of causing liver failure. Hepatitis A and non-A non-B hepatitis are transmitted by the fecal-oral route, while hepatitis B is transmitted through the exchange of blood or other body fluids from an infected person.

(2) The Army Hepatitis Prevention and Control Program consists of—

(a) Community and unit health education, incorporating principles of good personal hygiene and sanitation.

(b) Administration of immune globulin to personnel considered to be at risk of contracting hepatitis A (AR 40–562/NAVMEDCOMINST 6230.3/AFR 161–13/CG COMDTINST M6230.4D).

(c) Immunization of all active duty AMEDD personnel and other people considered to be at risk of contracting hepatitis B (health care workers, spouses or sexual contacts of hepatitis B carriers, newborns of hepatitis B carrier mothers, and close contacts of persons known to be carrying the hepatitis B virus).

(d) Immunization of Army personnel on permanent change of station (PCS) moves to the Republic of Korea, where hepatitis B is highly prevalent.

(e) Immunization of other military personnel considered to be at risk of contracting hepatitis B infection, such as selected Special Forces personnel.

(f) Prenatal screening for the presence of hepatitis B surface antigen.

(g) Screening of donated blood for the presence of hepatitis B virus and other screening procedures recommended by the American Association of Blood Banks, and the removal of suspected contaminated units from the inventory.

(h) Medical evaluation and counseling of all suspected and confirmed cases of hepatitis, to include acutely ill individuals and chronically infected persons.

(3) IMAs will conduct an epidemiological investigation on all cases of viral hepatitis. Outbreaks of hepatitis will be reported by RCS MED–16 (AR 40–400).

e. Sexually-transmitted diseases.

(1) STD are defined as those infections that can be transmitted through sexual contact and for which sexual transmission is epidemiologically important. Once categorically referred to as venereal diseases, STD include: Gonorrhea, syphilis, chancroid, chlamydia, genital herpes, lymphogranuloma venereum, granuloma inguinale, venereal warts (condyloma accuminatum), and non-gonococcal urethritis. Hepatitis B and HIV infections are also considered to be STD.

(2) The Army STD Prevention and Control Program consists of—

(a) Accurate diagnosis and appropriate treatment of infected persons and their sexual partners (AR 600–110 and AR 600–240/BUPERINST 1752.1/AFR 211–18/MCO 1752.1).

(b) Personal interviews and epidemiological contact investigation.

(c) Active surveillance at the installation level.

(d) Health education directed [illegible] sectors of the military community.

(e) Control of prostitution (AR 210–10).

(3) At the installation level, STD prevention and control efforts include appropriate therapy and follow-up, disease intervention, identification of locations where a high level of STD transmission may be occurring, and community and unit health education. Centralization of diagnostic efforts, interviewing and counseling, and treatment procedures is ideal and lends itself to better quality control and maintenance of patient confidentiality.

(4) Unit health education classes are strongly encouraged and should be incorporated with HIV education efforts and classes on personal hygiene whenever possible.

(5) Punitive action against a person will not be based solely on the fact that an individual has contracted an STD. However, in selected situations, repeated occurrences of STD may be the basis for administrative and/or corrective action under appropriate Army regulations.

(6) IMAs will collect on a monthly basis STD statistics and report these statistics to higher headquarters. STD statistics should not be unit-specific but will include the major categories of STD (rate/1000/month).

(7) STD information and/or statistics will not be used to compile indices of unit morale or integrity or commander efficiency.

(8) The release of medical information concerning persons who have contracted an STD will be based on applicable law and regulations. The Seven Point Agreement of 1967 (An Agreement on Measures for the Control of Venereal Diseases) between the Department of Health and Human Services (formerly Department of Health, Education, and Welfare), Department of Transportation, the Association of State and Territorial Health Officers, and the DOD is in effect. Also involved are cooperation with civilian health authorities and the reporting of military statistics to State or local health departments.

(9) The success of the military program is contingent on a satisfactory working relationship with civilian public health authorities. A cooperative atmosphere with local, county, and State health officials involved in the prevention and control of STD in an area is encouraged.

(10) HQDA will provide periodic guidance on the recommended treatment for uncomplicated gonorrhea and other STD. These guidelines take precedence over USPHS guidelines.

f. Rabies.

(1) Rabies is almost 100 percent fatal. Although the incidence is low, the possibility of animal bites in military personnel is real. Each bite incident must be carefully evaluated by medical authorities involved in rabies prevention and control efforts.

(2) The Army Rabies Prevention and Control Program consists of—

(a) Rabies pre-exposure prophylaxis with human diploid cell rabies vaccine. This prophylaxis will be administered to persons considered to be at significant risk of being bitten by potentially rabid animals (AR 40–562/NAVMEDCOMINST 6230.3/AFR 161–13/CG COMDTINST M6230.4D). Veterinarians, animal trappers, and selected animal control officers are included in this category of personnel at occupational risk of exposure. Selected military personnel in remote rabies-endemic areas should be considered for pre-exposure vaccination.

(b) Rabies post-exposure prophylaxis. Prophylaxis with human diploid cell rabies vaccine and human rabies immune globulin will be based on the incidence of animal rabies in the geographical area; the species of animal involved; the vaccination status of the animal; and the circumstances surrounding the bite incident.

(c) Stray animal control efforts.

(d) Continued surveillance of animal rabies in the area (domestic and wild animals in the geographical area).

(e) Community health education on the threat of rabies (domestic and wild animals and pets).

(3) IMAs will designate at least one qualified physician (usually the PVNTMED medical officer) and one veterinarian as rabies advisers. Rabies advisers will be consulted whenever the attending physician contemplates administration of specific anti-rabies treatment.

(4) Animal bite incident reports will be generated on every domestic and wild animal bite or suspected rabies exposure. These forms will be reviewed on a daily basis by one of the rabies advisers.

g. Human immunodeficiency virus. The Army HIV program includes periodic testing of military personnel; testing of blood supplies; health education with emphasis on prevention of transmission; medical evaluation and follow-up of HIV-infected individuals and those who have been directly exposed; medical research; and appropriate personnel actions. The program is defined in AR 600–110.

h. Tuberculosis.

(1) Tuberculosis screening programs detect previously unrecognized cases of active tuberculosis or persons exposed to tuberculosis who may have inactive infection. Since as many as 1 in 10 infected persons may develop the disease at some time in their lives, and risk is greatest in the first year after infection, the Army Tuberculosis Surveillance and Control Program has been established to identify persons who have been infected with the tubercle bacilli.

(2) Screening is based on the use of the tuberculin skin test (TST). Types of TSTs and directions on the administration of these tests are available through the American Thoracic Society or the USPHS. The intradermal Mantoux test is the standard test and should be read 48 to 72 hours after application.

(3) Appropriate drug treatment can be given to infected persons identified through screening, and prophylaxis against the development of active disease can be administered to those at risk. Isoniazid (INH) administered orally is normally used for preventive therapy (300 mg daily for adults and 10 to 14 mg/kg body weight not to exceed 300 mg daily for children). Other prophylactic drugs, such as rifampin, should only be used in those selected situations when there is a well-defined high risk exposure to a patient with infectious tuberculosis who is excreting INH-resistant organisms.

(4) For personnel not previously known to have a positive TST, skin tests will be administered to—

(a) Personnel entering active duty for 30 days or more as part of reception processing.

(b) Military and civilian personnel travelling OCONUS on PCS orders under DA auspices. TST will be applied within 3 months of anticipated move OCONUS.

(c) Military and civilian personnel returning to CONUS from an OCONUS assignment within 2 months of return. If an individual fails to receive a TST prior to departure or return, one will be administered within 2 weeks of arrival at the next duty station.

(d) Military and civilian personnel undergoing periodic physical examinations (ordinarily every 5 years for most military members), unless one has been administered within the past 6 months.

(e) Prospective civilian employees, as a condition for employment in health care facilities, schools, child development services (CDS), or other environments where tuberculosis may constitute a special hazard to others.

(f) Health care or community service personnel who may be at increased risk of contracting tuberculosis, periodicity of testing will be determined locally by IMAs, based on risk of exposure in specific occupational settings.

(g) Healthcare beneficiaries undergoing medical evaluation for tuberculosis, HIV infection, or other diseases associated with tuberculosis.

(5) TST reactors are defined as individuals who have a positive skin test of 10 mm induration or greater to the intermediate strength Mantoux test. TST converters are reactors whose TST has changed from negative or doubtful to positive (greater than 10 mm induration) within the past 2 years.

(6) For individuals known to have a positive TST previously, no further TSTs need be applied. Medical records will reflect the positive TST status, and an annotation as to the medical evaluation performed recently or in the past will be made. If INH therapy had been instituted, this information, along with details of

duration of therapy and recommendations for follow-up, will be recorded on the records.

(7) For individuals identified for the first time as TST-positive with no clear history of when conversion occurred, a medical evaluation will be performed to determine if active disease is present. The evaluation will include a careful medical history eliciting signs or symptoms suggestive of infection and a chest x-ray (alveolar, lateral, and apical lordotic views). This information will be entered in the medical record.

(8) All individuals with a recently identified positive TST must be evaluated and considered for INH chemoprophylaxis. Persons under age 35 should be placed on INH prophylaxis routinely, unless medical conditions exist that contraindicate its use. Individuals 35 years and older should be carefully evaluated, but, because of a higher association of INH-induced hepatitis in older individuals, the decision to begin INH prophylaxis should be made on a case-by-case basis based on risk and time of likely conversion.

(9) Duration of INH chemoprophylaxis for TST reactors with no risk factors for the development of active disease may be shortened from 12 months to 6 months. This includes persons with TST reactions of 5 mm or greater induration and who are close household contacts of active cases. Contacts of infectious cases with negative TST reactions of less than 5 mm induration should continue daily INH for 3 months; if the TST remains negative, prophylaxis can be discontinued.

(10) TST reactors with risk factors for the development of active tuberculosis should be placed on INH for 12 months. Risk factors include—

(a) Abnormal chest x-ray with stable parenchymal lesions.

(b) HIV infection.

(c) Adrenocorticosteroid or immunosuppressive therapy.

(d) Reticuloendothelial/hematologic disorders such as leukemia, lymphoma, or sickle cell anemia.

(e) Diabetes mellitus.

(f) Silicosis.

(g) Chronic hemodialysis.

(h) History of gastrectomy.

(i) Chronic undernutrition or weight loss.

(11) Liver transaminase tests will be performed at the beginning and periodically during therapy; that is, at 1 and 3 months. If transaminase levels exceed 3 to 5 times the upper limit of the normal range of the laboratory, the decision to continue INH prophylaxis should be reconsidered.

(12) TST sensitivity and immunity to tuberculosis after Bacille Calmette-Guerin (BCG) vaccine is highly variable, and there is no reliable method for distinguishing tuberculin reactions caused by BCG from those caused by natural infections. Since the incidence of tuberculosis is high in countries with BCG vaccination programs, a positive TST should be evaluated independently of BCG history.

(13) TST results will be documented on the SF 601 (Health Record—Immunization Record) and on HEW Form PHS 731 (International Certificates of Vaccination).

(14) A local tuberculosis registry of all persons under medical surveillance will be maintained. This registry will serve as a current listing of all active and inactive cases and contacts requiring medical follow-up. DA Form 3897-R (Tuberculosis Registry) will be used for this purpose and will be locally reproduced. DA Form 3897-R is located at the back of this regulation.

(15) For personnel under surveillance undergoing a change of assignment, DA Form 3897-R will be mailed to the medical commander of the gaining organization to ensure continuity of care. The individual will be counseled prior to his or her departure.

(16) For personnel under surveillance departing military service, IMAs will notify the appropriate State health department where the individual will be living. The Veterans Administration ordinarily assumes responsibility for military separatees who are under active tuberculosis surveillance.

(17) When medical surveillance is discontinued, DA Form 3897-R will be placed in a closed file, retained for 1 year, then destroyed per AR 25-400-2.

Section II
Climatic Injury Prevenl nd Control

4-6. General

a. Environmentally-associated illnesses may be present as isolated events or be of epidemic proportions with significant military impact. Included are heat injuries, cold injuries, and high altitude sickness. Other environmental conditions based on specific scenarios may justify the need for additional interventions such as vision protection against excessive glare or skin, eye, and respiratory tract protection from wind or excessive dust or sand.

b. The goal of this program is to prevent injuries from ever occurring though a comprehensive program incorporating health education, personal protection, and appropriate adjustment of activities as indicated, to include acclimatization in hot environments. Monitoring of the environment is critical. Commanders, through early recognition of climatic injuries and prompt implementation of additional preventive measures, can reduce morbidity in the command.

4-7. Functions

a. Commanders will—

(1) Provide protective clothing, equipment, supplies, and facilities (other than medical) to prevent climatic injuries from occurring.

(2) Implement heat and cold injury prevention programs within their respective commands, the actions being based on guidelines described in paragraph 4-6.

(3) Monitor environmental conditions where troops will be located with assistance provided by medical authorities.

b. IMAs will recommend individual or environmental protective measures to the command.

Section III
Hospital Infection Control

4-8. General

An effective program for the prevention and control of hospital-associated infections is required to meet the objectives of high quality patient care and the effective utilization of hospital services. This program encompasses virtually all hospital operations under the responsibility of the hospital commander. The hospital commander implements these objectives. The hospital infection control committee supervises the program.

4-9. Hospital infection control committee

a. Committee policy and responsibility. The committee operates as a medical audit committee and, as part of the quality assurance (QA) program, is responsible to the commander through the QA committee. The basic principles of patient care and employee health inherent in the program apply to all inpatient areas, outpatient areas, emergency rooms, special care areas, and troop clinics.

b. Objectives. The committee's primary objectives are as follows:

(1) Ensuring a continuing education program on the control of hospital-acquired infections.

(2) Establishing a practical and timely system for the recognition, evaluation, and reporting of nosocomial infections in hospitalized patients and recently discharged patients.

(3) Providing assistance in developing preventive measures and policies.

(4) Reducing the incidence of preventable infections.

c. Composition. The committee chairman will be a medical officer who demonstrates interest and knowledge in infection control, and can devote sufficient time and effort to ensure an effective program. Committee membership should include the following:

(1) *Hospital epidemiologist.* Each hospital commander will designate an officer with appropriate training and experience as the hospital epidemiologist. This officer will supervise the educational program and surveillance activities, assist in monitoring infection

control policies and procedures, and serve as adviser to the hospital commander, medical staff, and n[illegible]g staff on infection control practices.

(2) *Hospital infection control officer.*

(a) This officer, appointed by the hospital commander and normally a nurse, will serve as liaison between the hospital infection control committee and all departments or services of the hospital to—

1. Facilitate clinical and environmental surveillance activities.

2. Foster an attitude of cooperation.

3. Enhance the effectiveness of the educational program.

(b) At the direction of the chairman, hospital infection control committee, the hospital infection control officer will coordinate all educational activities, and gather clinical data to determine the incidence of endemic infections (para 4–11) and manage epidemic events. This includes their epidemiological investigation and reporting.

(c) The hospital infection control officer can also serve as the hospital epidemiologist.

(3) *Clinical service representatives.* Representatives of the major clinical departments and services, including nursing personnel, may serve as members of the hospital infection control committee to provide the necessary interdisciplinary clinical input. Representation from the house staff, when applicable, is desirable and encouraged.

(4) *Environmental science officer (AOC 68N).* The environmental science officer is normally the principal adviser on matters relating to the hospital environment including waste management, ventilation, housekeeping, selection, and use of antiseptics and disinfectants, food sanitation, linen management, and environmental monitoring.

(5) *Administrative officer.* The hospital executive officer is normally the principal adviser on administrative matters and services.

(6) *Microbiologist.* The microbiology/serology section of the clinical laboratory should be represented to provide the necessary input on microbiological data and procedures.

(7) *Entomologist (AOC 68G).* When available, the entomologist will be the principal adviser on the potential for pest infestations that contribute to the spread of infectious agents and will also advise on the implementation of proper pest control measures. When an entomologist is not available, the environmental science officer will function in this role.

(8) *Other consultants.* Representatives of the pharmacy, food, and housekeeping services, as well as other consultants, should be available for infection control committee meetings when required.

d. Functions. Committee meetings will be held at least every 2 months or as often as necessary to accomplish the objectives. The committee will—

(1) Describe standard criteria for defining nosocomial infections.

(2) Establish written policies and procedures relating to isolation techniques, antiseptics, disinfection and sterilization techniques, waste management (para 11–6), and general sanitation.

(3) Establish written policies and procedures concerning patient care techniques and measures for the prevention of infections in patients and personnel.

(4) Ensure that policies and procedures developed for such activities as clinics, special care services, laboratories, and support services adequately address the potential for infections and their prevention.

(5) Provide for a review, at least annually, of all hospital and clinic written policies and procedures related to infection control and to determine their applicability and to revise as appropriate.

(6) Provide assistance in the development of the infectious disease aspects of the hospital employee health program. (See chap 5.)

(7) Coordinate with the medical staff in its review of the clinical use of antimicrobial agents by analyzing and using significant surveillance data and antimicrobial susceptibility test data.

(8) Recommend to the hospital commander actions that should be taken to control hospital outbreaks of infectious diseases.

e. Education. Provisions will be made by the hospital infection control committ[illegible] the orientation of all new hospital personnel to their responsib[illegible]ies in the prevention and control of hospital-associated infections. Periodic inservice education in infection control will be provided in all departments and services and will be documented. Information, including data supporting significant trends, will be reported to the MEDDAC or MEDCEN QA committee and be incorporated into departmental educational programs as well as in formal presentations of the most current prevention and control concepts to the medical staff (see AR 40–68).

4–10. Technical assistance

On-site consultations and special studies should be requested from the hospital epidemiologist or hospital infection control officer at the relevant MEDCEN; for example, Fort Carson would contact the appropriate individuals at Fitzsimons Army Medical Center. The normal consultation routes will be as follows: MEDDAC to regional MEDCEN; regional MEDCEN to either TSG's physician or nurse consultant for hospital infection control. However, requests may also be made directly to OTSG.

4–11. Reporting

a. An endemic nosocomial infection rate for the hospital will be consolidated into formal reports for presentation during medical staff conferences and for inclusion in CHRs. Nosocomial infections for a suitable period of time will be reported in CHRs at least three times a year by the total surveillance (incidence) or prevalence rate as follows:

(1) The total surveillance (incidence) rate equals—

(a) The number of nosocomial infections per unit of time.

(b) The number of patients discharged per unit of time.

(2) The point prevalence rate equals—

(a) The number of patients with nosocomial infection at the time of the survey.

(b) The number of patients in the hospital at the time of the survey.

(3) The number of patients with multiple nosocomial infections will be listed.

b. Coding of diagnoses on individual patient data system coding transcripts from inpatient treatment record cover sheets will always include any diagnosis representing a hospital infection (AR 40–66).

c. Certain infections of high communicability as well as significant outbreaks of infection will be reported expeditiously by RCS MED–16 (chap 3).

Chapter 5
Occupational Health Program

Section I
General

5–1. Background

This chapter prescribes the Occupational Health Program and services required under provisions of Executive Order 12196 and DOD Instructions 6050.5, 6055.1, 6055.5, and 6055.12 for DA military and civilian personnel.

5–2. Objectives

The objectives of the Army Occupational Health Program are to—

a. Assure that all eligible personnel (military and civilian) are physically, mentally, and psychologically suited to their work at the time of their assignment, and that physical and mental health are monitored to detect early deviations from the optimum.

b. Protect employees against adverse effects of health and safety hazards in the work environment. This includes field operations as well as the industrial workplace.

c. Assure proper medical care and rehabilitation of the occupationally ill and injured.

d. Reduce economic loss caused by physical deficiency, sickness, and injury of civilian employees.

e. Prevent decreased combat readiness caused by occupational illness and injury of military personnel.

5–3. Army Occupational Health Program

a. The overall Occupational Health Program promotes health and reduces risk of illness arising from the individual's work environment. This encompasses special preventive measures for both military and civilian personnel who are exposed or potentially exposed to toxic materials, infectious agents, or other hazardous influences of the work environment.

b. Medical measures will be carried out according to professional standards in the field of OH.

c. Army occupational safety and health standards are noted in (1) through (5) below. When alternate or supplemental standards are necessary, documentation with justification will be forwarded through command channels to HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258, to obtain appropriate approval authority.

(1) DOD and DA OSH standards for military and nonmilitary workplaces for which regulatory agencies either have or have not issued OSH standards. This includes DOD and DA pamphlets, circulars, technical bulletins, and messages.

(2) OSHA standards including emergency temporary standards with minor adaptation as necessary to conform with DA administrative practices.

(3) Alternate workplace standards based on publications relating to workplace exposure criteria. These standards may be used in lieu of existing OSHA standards or in which no OSHA standard exists. The current American Conference of Governmental Industrial Hygienists threshold limit values will be the standards used in DA military and civilian workplaces if—

(a) OSHA standards are less stringent.

(b) No OSHA standard exists.

(4) Other regulatory workplace standards issued under statutory authority by other Federal agencies (such as the Department of Transportation and the Environmental Protection Agency (EPA)).

(5) Special DA OSH standards developed for military-unique equipment, systems, and operations.

d. A viable Occupational Health Program requires continuing cooperation among managers, supervisors, personnel officers, and safety and medical personnel to include division surgeons, optometrists, industrial hygienists, audiologists, and safety personnel.

e. As a minimum, the Occupational Health Program will include the following elements:

(1) Inventory of chemical, biological, and physical hazards in the work environment of all installation activities, including MTFs and research and development activities.

(2) Job-related medical surveillance.

(3) Administrative medical examination.

(4) Employee education about job-related health hazards.

(5) Treatment of occupational illness and injury and emergency treatment of nonoccupational illness and injury.

(6) Hearing conservation.

(7) Occupational vision.

(8) Pregnancy surveillance.

(9) Job-related immunizations.

(10) Illness absence monitoring.

(11) Chronic disease surveillance.

(12) Epidemiologic investigations of occupational illness and injury.

(13) Maintenance of OH medical and administrative records and reports.

(14) Industrial hygiene surveys and safety and health inspections.

f. Other services that may be provided when adequate resources are available include but are not limited to—

(1) Group counseling on specific problems or habits affecting health.

(2) Disease screening.

(3) Voluntary periodic health examinations on an age-related basis.

5–4. Program functions

a. The installation commander will ensure that—

(1) Employees under his or her command are provided OH services required by this chapter.

(2) Supervisors at all levels are informed of and carry out their responsibilities in the program.

(3) Individual employees are informed of potential OH hazards and safe practices and procedures, and are instructed in the wearing of PPE.

(4) An Occupational Health Program administrator or coordinator will be designated at installations or activities that do not have an occupational health clinic.

(5) A program for the recognition, evaluation, and control of unhealthful working conditions is established. This program will include—

(a) Publishing a local regulation or supplement to an existing regulation that delineates the responsibilities of all installation OSH participants.

(b) Ensuring establishment of a safety and occupational health (SOH) advisory council (AR 385–10).

(6) The installation Asbestos Management Program is established per TB MED 513 and other DA guidance.

b. Safety manager responsibilities are defined in AR 385–10 and AR 385–40.

c. Civilian and military personnel officers will provide support and guidance to ensure efficient accomplishment of the overall program (AR 600–8 and Federal Personnel Manual (FPM) chaps 250, 290, 293, 294, 339, 792, and 810). This includes coordination with OSH personnel to ensure that—

(1) A suspense system is maintained to—

(a) Identify personnel in positions requiring specific standards of physical fitness and job-related medical surveillance.

(b) Schedule personnel for the indicated preplacement, change of position, periodic, fitness for duty, and termination examinations.

(2) Applicants and employees are advised regarding potential OH hazards, appropriate protective equipment, safety practices, and job-related medical surveillance requirements of their work assignments.

d. The commander of the MTF providing medical support will—

(1) Program resources to ensure provision of OH services required by this regulation.

(2) Ensure provision of physician support for OH services where there is no physician assigned.

(3) Appoint an audiologist, when available, to act as the hearing conservation officer and to participate as a member of the SOH advisory council. If an audiologist is unavailable, the IMA will designate an individual from the occupational medicine staff to act as the hearing conservation officer. (See the definition of occupational medicine staff in the glossary.)

(4) Appoint an individual to act as the industrial hygiene program manager according to TB MED 503.

(5) Project the impact of full-scale industrial mobilization on OH services and ensure provision of these services through the use of contingency contracts and on expanded mobilization TDA.

e. The chief PVNTMED service, will—

(1) Provide overall technical guidance for the Occupational Health Program to appropriate supporting clinical services and to the tactical unit surgeons.

(2) Assure proper coordination with installation and MTF safety and personnel offices, hospital infection control personnel, and the division surgeon.

(3) Initiate, if appropriate, and assist in epidemiologic investigations.

(4) Ensure maximum use of the [illegible]tary occupational health vehicle, where applicable, to conduct monitoring audiometry.

(5) Support the installation Asbestos Management Program according to TB MED 513.

(6) Provide medical review of Federal Employees Compensation Act claims.

f. The SOH advisory council committee (as described in AR 385–10) will—

(1) Consider matters involving OSH.

(2) Make recommendations to the installation commander.

(3) Perform such additional tasks as the commander or council chairperson may direct. DOD components may exempt installations with a very small population from the requirement to establish a council.

(4) Review, discuss, and make comments on the installation OSH hazard abatement plan or schedule.

g. The OH representative of the SOH advisory council committee will provide input concerning specific health aspects of council responsibilities. The representative will—

(1) Provide information and make recommendations concerning required actions to implement applicable laws and regulations related to health.

(2) Provide advice, guidance, and/or coordination on required actions to comply with survey and inspection recommendations made by higher headquarters and other agencies.

(3) Provide the council with data regarding accident and illness trends and bring to the council's attention any problems related to employee participation in job-related health programs.

h. The OH nurse and the CHN, as deemed necessary by the chief of the PVNTMED service, will coordinate Occupational Health Program activities in the areas of epidemiology, educational programs, communicable disease programs, and use of community resources. The activities will include but are not limited to the following:

(1) Reviewing DA Form 3076 to detect illness and injury patterns.

(2) Providing advice, as needed, in matters pertaining to OH needs of soldiers.

i. The chief, OH, will—

(1) Plan, direct, supervise, and evaluate the Occupational Health Program according to specific installation needs and resources and requirements of this regulation.

(2) Coordinate with other MTF and installation staff (including labor relations advisers) and with the division surgeon to ensure—

(a) Provision of required OH services.

(b) Collection, review, and reporting of required OH data.

(3) Conduct or coordinate medical surveillance and health hazard training for military and civilian employees potentially exposed to OH hazards, and evaluate employees in positions requiring specific standards of physical fitness.

(4) Regularly visit work areas to keep informed about work operations and potential hazards and maintain working relationships with supervisors and employees.

(5) Conduct epidemiologic investigations of actual or suspected occupational illness.

(6) Provide advice and guidance to commanders and other concerned personnel (such as employee representatives) regarding OH matters.

(7) Participate in the installation SOH advisory council committee and quality control committee.

(8) Establish a light duty or limited duty program, in coordination with the installation commander, safety officer, and personnel officer, to facilitate an early return to work for employees injured on the job.

j. The industrial hygienist will—

(1) Develop and update annually industrial hygiene input into the Occupational Health Program document to clearly define goals and objectives in the industrial hygiene area.

(2) Establish and maintain the HHIM of the OHMIS.

(3) Develop an industrial hygiene implementation plan for the allocation and application of industrial hygiene resources.

(4) Perform [illegible]trial hygiene evaluations of workplaces, provide technical guidance and support for the hazard communication, asbestos abatement, and installation OSH programs, and perform other responsibilities as defined in TB MED 503.

k. The chief, DPCCM, will provide clinical support and coordinate with the chief, PVNTMED, and the chief, OH, to assure provision and reporting of required OH services for military and civilian employees.

l. The chief, optometry, MEDDAC, will serve or appoint an optometrist as the occupational vision officer who will—

(1) Assist OSH personnel in identifying eye-hazardous occupations, areas, tasks, or processes and in determining the type of protective eyewear required.

(2) Ensure that verification of prescription and proper fitting of industrial safety spectacles are accomplished.

(3) Ensure that industrial safety spectacles meet current American National Standards Institute (ANSI) Z87.1 criterion.

(4) Assist OH personnel in establishing and maintaining a vision screening program for workers in potentially eye-hazardous occupations and other vision screening programs when required.

(5) Provide professional vision evaluations and the necessary spectacle corrections for civilian employees referred under the Occupational Vision Program.

(6) Provide technical input and assistance for the Employee Health Hazard Education Program.

(7) Provide professional guidance regarding the wearing of contact lenses in the industrial environment. Contact lenses provide very limited industrial eye protection; therefore, proper protective eyewear should be used.

m. The chief, patient administration division, will act as technical adviser for patient administration aspects of the Occupational Health Program, to include collection and use of required OH reports data.

n. Managers and supervisors at all levels will—

(1) Keep informed about OH hazards and the medical and safety requirements in activities under their control.

(2) Train and educate employees regarding job health hazards and appropriate safety practices.

(3) Enforce the use of protective clothing and equipment.

(4) Advise the IMA of proposed or actual changes in work operations that may affect the health or safety of the worker.

(5) Provide the civilian and military personnel offices with the health and safety information necessary for effective job classification and placement actions.

(6) Assure that employees are referred for required job-related medical surveillance.

o. Employees will—

(1) Follow safe and healthful work practices.

(2) Use PPE when required.

(3) Make note of and report suspected unsafe or hazardous work situations.

(4) Comply with requirements of the Occupational Health Program.

Section II
Occupational Health Management Information System

5–5. General

a. The purpose for OHMIS is to assist OH professionals in improving the effectiveness and economy of OH delivery through provision of accessible, timely, accurate data on both military and civilian employees, their workplace environment, and their health status. OHMIS is configured as a distributed network with installation level processing on microcomputers at each Army OH facility worldwide.

b. Three modules support the Army OH team:

(1) The Hearing Evaluation Automated Registry System will—

(a) Automate hearing testing to include automatic forms completion; reduce lost training and work time.

(b) Significantly reduce error rates.

(c) Allow hearing conservation officers to q[illegible]y and easily determine program participation and hearing loss incidence and prevalence.

(2) The HHIM will—

(a) Maintain workplace descriptions including workplace hazard inventories, employee exposures, engineering and personal protective controls, and exposure abatement efforts.

(b) Document individual exposure histories.

(3) The Medical Information Module (MIM) will—

(a) Automate access to present and past exposure information, both workplace and individual employee.

(b) Automate access, verification, and update of demographic and clinical encounter information.

(c) Generate exposure-based recommended health surveillance procedures and provide locally tailored appointment schedules.

c. All three modules combine to facilitate installation-level data base management, quality assurance, hazard communication and health education, resource management, and query and report preparation.

5–6. Functions

a. HSC is the designated Assigned Responsible Agency for operations, maintenance, and support of OHMIS after system deployment.

b. USAEHA is designated Proponent Agency for OHMIS. The OHMIS Coordinating Office has been established under the Director of Occupational and Environmental Health.

(1) The functional program manager will—

(a) Coordinate the separate module manager's efforts for the maintenance and update of reference files that reflect Army policy regarding OH surveillance, exposure monitoring, and exposure definitions.

(b) Evaluate the effectiveness of corporate and local OH programs and the conduct of corporate and local OH programs against established objective, discrete, measurable, and attainable performance standards adjusted for existing resources.

(c) Respond, as appropriate, to queries for information derivable for the OHMIS data base.

(2) The individual module managers will respond directly to queries from the field relating to use or function of the three modules.

c. The Fort Detrick Director of Information Management is designated as the Application System Developer for OHMIS. As such, the Director will provide technical systems administration. The information center will provide assistance to users with hardware and/or software.

d. At the installation level, the chief, PVNTMED services, will ensure systems administration security and the proper use of OHMIS.

5–7. Forms

a. The following occupational health patient forms are used to document both the workload requirements and activities of OH programs and the specific recipients of these activities:

(1) Occupational Health Patient Form, DA Form 5931.

(2) USAREUR Occupational Health Form, DA Form 5932.

(3) Occupational Health Patient Form—Supplemental, DA Form 5933 to be used in Panama, Puerto Rico, Guam, and the Virgin Islands, and Japan.

(4) Korea Occupational Health Encounter Form, DA Form 5934.

b. The data can be used to—

(1) Obtain the information required for summary or statistical reports.

(2) Help standardize Occupational Health Program elements and the services provided.

(3) Initiate epidemiologic studies.

(4) Increase program management efficiency.

(5) Serve as a tracer or audit trail for services.

c. Instructions for preparing these forms are found in MIM's Supplemental User's Instructions, available from the Commander, USAEHA, ATTN: HSH[illegible]O–F, Aberdeen Proving Ground, MD 21010–5422.

Section III
Occupational Health Services

5–8. General

This section identifies the clinical and preventive medicine services authorized for military personnel and civilian employees within the Occupational Health Program.

5–9. Medical examinations

a. Job-related examinations. Preplacement, job transfer, periodic, and termination examinations will be provided to all military personnel and civilian employees potentially exposed to health hazards in the work environment. Termination examinations will be provided on termination of assignment or termination of employment for all employees who have been included in a periodic job-related medical surveillance program unless an examination has been conducted within the past 90 days. The 90-day exception does not apply in cases where the content of the periodic examination differs from the termination examination, for example, high risk microwave or laser workers, or where a more stringent requirement exists. The chief, OH, or his or her representative, will review the HHIM (chap 5, sec II) annually and when operations change. Such a review is performed to determine the scope and frequency of job-related examinations for military personnel and civilian employees potentially exposed to health hazards. The medical surveillance matrix of the MIM will assist the OH care provider in making this determination by providing regulatory and recommended guidance for job-related examinations on each hazard in the matrix. The medical surveillance matrix is based on the hazards identified in the HHIM. The following documents will provide supplemental information:

(1) Part 1910, title 29, Code of Federal Regulations (CFR) (29 CFR 1910).

(2) National Institute for Occupational Safety and Health (NIOSH) Publication No. 81–123.

(3) DOD 6055.5–M.

(4) TB MED 501.

(5) TB MED 502.

(6) TB MED 506.

(7) TB MED 509.

(8) TB MED 510.

(9) TB MED 513.

(10) TB MED 523.

(11) TB MED 524.

(12) TB MEDs, DA pamphlets, and other documents concerning job-related medical surveillance requirements as they are developed and formally issued.

b. Military. In addition to routine entrance and periodic examinations performed under AR 40–501, certain assignments will require further preassignment, periodic, and termination examinations that are specific for any potential chemical, physical, or biological hazards.

c. Civilian. In addition to job-related examinations required by *a* above, civilian employees assigned to positions requiring specific physical fitness standards will be provided examinations according to Office of Personnel Management (OPM) policy (FPM chap 339 and FPM chap 930). If necessary, job-related medical evaluations may be made a condition of employment. Employees not required to have preplacement examinations (FPM chap 339) should be scheduled for baseline health screening evaluations if resources permit. The baseline evaluations may include a health history, blood pressure determination, vision screening, and hearing tests.

d. Other required examinations. Fitness for duty and disability retirement examinations will be accomplished according to FPM chapter 339. Medical examinations for individuals potentially exposed to chemical surety materials will be accomplished per the applicable DA pamphlets.

e. Health maintenance examinations. While not a requirement for civilian employees, health maintenance examinations are encouraged, subject to availability of health resources. Such examinations may include single or multiple disease screening or more detailed medical evaluations, and can be offered on an age-related basis or to specific target groups.

f. Follow-up. A follow-up system should be developed and maintained for all health examination and screening programs to identify and report their effectiveness and to assure indicated counseling and referral.

5–10. Illness and injury

a. Treatment for civilian employees.

(1) *Occupational illness and injury.* Diagnosis and treatment of injury or illness sustained in performance of official duties is authorized by AR 40–3 and under the Office of Workers' Compensation Program (FPM chap 810). Employees who request examination and treatment will be provided it at no cost at any Army MTF, other Federal MTF, or by a physician or hospital of his or her choice. If an Army dispensary, clinic, hospital, emergency room, or local facility under contract with the Army is available at the activity, locally prescribed procedures will require that the injured employee be initially referred to that MTF.

(2) *Nonoccupational illness and injury.* Definitive diagnosis and treatment of nonoccupational illness and injury cases are not responsibilities of the Occupational Health Program except—

(a) In an emergency. The employee will be given the attention required to prevent loss of life or limb or relieve suffering until placed under the care of the employee's personal physician.

(b) For minor disorders. First aid, or palliative treatment may be given if the condition is one for which the employee would not reasonably be expected to seek attention from a personal physician, or to reduce absenteeism by enabling the employee to complete the current work shift before consulting a personal physician. Requests for repetitive treatment of nonoccupational disorders will be discouraged.

(c) Minor treatments or services such as administering allergy treatments, monitoring blood pressure, providing physiotherapy, and so forth. These may be furnished at the discretion of the responsible physician if resources are available. A request must be submitted in writing by the employee's personal physician. Medications, if required, must be provided by the employee.

(d) In cases of employees with an alcohol or drug abuse problem. These employees should be encouraged to seek assistance and counsel from the alcohol and drug abuse prevention and control program. AR 600–85, FPM Supplement 792–2, and DA Pam 600–17 provide further guidance. OH functions in this program include initial counseling and referral of employees to treatment resources.

b. Treatment for military personnel. AR 40–3 authorizes diagnosis and treatment for both occupational and nonoccupational illness and injury for military personnel. All incidents of military noncombat job-related illnesses and injuries will be reported to the proper occupational health and safety officials. Definitions of reportable occupational illness and injury are found in AR 385–40, chapters 2 and 4, and in that publication's glossary.

c. Medical directives. Comprehensive medical directives for emergency care and treatment of occupational and nonoccupational illnesses and injuries by the nursing staff will be prepared, signed, annually reviewed, and revised (if necessary) by the responsible physician to—

(1) Assure proper handling of emergencies in the absence of, or prior to, the arrival of a physician.

(2) Direct the care to be given for minor incidents not requiring personal attention of a physician.

(3) Authorize other activities by the nursing staff.

d. First aid. In general, the placement of first-aid kits in work areas is discouraged. Exceptions should be made where work areas are geographically located distant from an MTF or where extremely hazardous exposures may occur and require immediate treatment for exposure. If first-aid kits are placed in work areas, their contents, intended use, and maintenance will be approved by medical personnel. Personnel rendering first-aid treatment will have approved first-aid training. All first-aid treatment rendered will be reported to OH personnel.

5–11. Epidemiologic investigations

Such investigations will be conducted after the occurrence of suspected or proven occupational illnesses. Identification of apparent excessive numbers of occupational injuries will be reported to safety personnel. Investigations will be made, in coordination with safety officials when indicated, of employee reports of unhealthful working conditions. Situations that represent an imminent danger to Army personnel will be reported under AR 385–10.

5–12. Immunizations and chemoprophylaxis

a. Appropriate immunizations will be provided personnel with increased risk of infection related to potential job hazards or when required for official foreign travel. Other immunizations may be offered to civilian personnel to reduce absence due to sickness. Immunizations offered to civilian personnel will be based on current recommendations published by the USPHS (AR 40–562/NAVMEDCOMINST 6230.3/AFR 161–13/CG COMDTINST M6230.4D).

b. Civilians traveling under military sponsorship will be provided appropriate immunizations and chemoprophylactic medications.

5–13. Illness absence monitoring

Medical support of the illness absence monitoring program for civilian employees will include—

a. Screening, treatment (para 5–10*a*(2)), and/or referral of employees who become ill during duty hours.

b. A medical evaluation in support of a claim controversion and for employees who are expected to be absent from work for 2 weeks or more due to a job-related illness or injury. Medical personnel will provide this evaluation by reviewing medical reports and/or performing an appropriate examination. Specialty consultation should be requested when indicated.

c. Evaluation of employee health status on return to duty after any absence due to job-related illness or injury.

d. Evaluation of employee health status on return to duty after absence due to illness not described in *c* above. The IMA and appropriate personnel officers will determine the duration of absence or types of illness or injury requiring such evaluation with the exception of food handlers and patient care personnel. Employees excepted will report to the OH service for evaluations after any absence due to illness.

e. Recommendations concerning work limitations.

5–14. Chronic disease and handicapped personnel

Civilian employees with chronic diseases or disabilities can be productive members of the work force. The following employment guidelines will be used:

a. Medically evaluate their work capability as a basis for proper job placement.

b. Identify employees with chronic diseases or disabilities that may affect or be affected by the work assignment. Health records will be identified and will contain clinical data regarding the condition and current treatment and the name of the personal physician.

c. Provide periodic counseling to the employee and/or supervisor when indicated.

5–15. Occupational vision

a. An occupational vision program oriented toward preservation of eyesight is an essential part of the Occupational Health Program. Guidance provided in TB MED 506 will be followed to develop and conduct the occupational vision program. An effective occupational vision program must include—

(1) Determination of which jobs or areas are eye hazardous.

(2) A job analysis to determine the visual skills required for optimal job performance.

(3) A visual assessment of workers, through [illegible] of an approved vision screening device, to determine whether they possess the required visual skills.

(4) Ocular surveillance (per OTSG Policy Letter 86–01.0) of personnel whose occupations are in the laser or microwave field and biennial vision screening for workers in all other potentially eye-hazardous job positions.

(5) Vision screening of individuals using video display terminals (VDTs) per Memorandum, U.S. Army Health Professional Support Agency, SGPS–PSP–O, 1 Sep 1988, subject: Policy for Use of Video Display Terminals (VDTs).

(6) Elective periodic vision screening for employees in noneye-hazardous positions, resources permitting and not more frequently than triennially.

(7) Referral of employees not possessing the desired visual skills for a complete professional vision evaluation and necessary correction. Military personnel will obtain the examination at appropriate MTFs. Civilian employees in eye-hazardous positions as determined by the installation safety officer under TB MED 506 will be provided this service at Government expense, if they have not worn prescription glasses before or their present prescription is inadequate as determined by administrative vision screening. Employees not in eye-hazardous positions, as defined in AR 40–2, will obtain such professional examinations at their own expense.

(8) Supervision of the use of eye protection (industrial safety eyewear) and eye hygiene.

(9) First aid and care of occupational eye injuries and disease.

(10) Worker education on proper eye protection and benefits of the occupational vision program.

(11) Periodic surveys of work areas to promote adequate illumination and to evaluate other aspects of the work environment related to visual performance and eye safety.

(12) Review of contact lens use to assure their safe wear. Contact lens use will be prohibited during gas chamber exercises, field training, and combat. Personnel whose medical records document a medical requirement to wear contact lenses for medical reasons are not permitted to be in a prohibited environment with or without contact lenses. Personnel wearing contact lenses for medical reasons may apply for a waiver from this limitation. Waiver approval or disapproval is determined at the MEDCEN level. Individuals participating in research studies with approved protocols are exempt from these restrictions.

b. Industrial thickness spectacle lenses are recommended for all persons who have useful vision in only one eye (monocular individual). Active duty and retired military personnel will obtain eyewear per AR 40–63. Monocular civilian employees working in noneye-hazardous occupations will obtain such eyewear at their own expense.

c. Procurement of industrial safety spectacles both plano and prescription will be per AR 385–10. These spectacles will be provided to all military and civilian personnel working in potential eye-hazardous occupations and will meet the criteria of 29 CFR 1910.33 and ANSI Standard Z87.1.

5–16. Hearing conservation

a. General. The hearing conservation program is designed to protect the employee from hearing loss due to occupational noise exposure. Implementation and maintenance procedures appear in TB MED 501.

b. Program functions.

(1) The installation commander will—

(a) Meet the hearing conservation program requirements according to this regulation and AR 385–10.

(b) Issue a command emphasis letter endorsing the installation's hearing conservation program.

(c) Include hearing conservation as an item of interest in the local command inspection program.

(2) The IMA will—

(a) Ensure that a physician determines the diagnosis of noise-induced hearing loss. (See TB MED 501.)

(b) Notify the civilian [illegible]nnel officer of an individual sustaining a permanent hearing loss which creates a hazard to the individual and others.

(c) Maintain audiometric testing and noise exposure records. (See AR 40–66, AR 25–400–2, and TB MED 501.)

(d) Provide audiometric test records and exposure information on request. (See TB MED 501.)

(e) Report significant threshold shift. (See chap 3 and TB MED 501.)

(f) Provide health education materials on request. (See TB MED 501.)

(3) The flight surgeon will fit the SPH-4 aviator's helmet and inspect the helmet condition annually per AR 95–3.

(4) The safety officer (per AR 385–10) will—

(a) Conduct inspections.

(b) Include noise hazard abatement projects in the hazard abatement plan.

(5) The civilian personnel officer will—

(a) Ensure that OH is included on the inprocessing and outprocessing checklists for new, transferring, or terminating personnel. (This alerts the IMA of the audiometric evaluations required for these personnel.)

(b) Include (per AR 385–10) in the job description, where applicable, the requirement to wear PPE (hearing protectors).

(c) Ensure (per AR 385–10) that the following responsibilities are included in a civilian supervisor's performance standards, where applicable—

1. Enforce the use of PPE.

2. Ensure that employees report for mandatory medical examinations.

(d) Notify supervisors when termination audiometric evaluations are required for individuals under their supervision. Include termination audiograms on the outprocessing checklists for noise-exposed personnel.

(e) Inform the IMA and safety officer of all workers' compensation claims for hearing loss.

(6) The director of engineering and housing will—

(a) Erect and maintain danger signs per AR 385–30 and AR 420–70.

(b) Implement, whenever feasible, acoustical engineering control measures when exposures to steady noise exceed the time-weighted criteria.

(7) The hearing conservation officer will manage and coordinate all aspects of the hearing conservation program outlined in this regulation. These responsibilities include—

(a) Drafting and staffing an installation standing operating procedure (SOP) detailing the hearing conservation program.

(b) Ensuring that medically trained personnel fit individuals with preformed earplugs, and then examine individuals at least annually to ensure proper earplug condition and fit.

(c) Requisitioning and maintaining a supply of preformed earplugs.

(d) Providing a pair of preformed earplugs and a carrying case to all noise-exposed personnel.

(e) Ensuring that monitoring audiometry is [illegible] MED 501 and USAEHA Technical Guide (TG) [illegible]

(f) Providing health education annually.

(g) Conducting unannounced inspections of noise[illegible] areas.

(h) Evaluating program participation, quality [illegible] program effectiveness.

(8) The industrial hygiene program manager, per [illegible] 503, will—

(a) Use approved and calibrated equipment, and survey [illegible] pected noise-hazardous areas and equipment at least [illegible] within 30 days of any change in operations.

(b) Establish a time-weighted average for all civilian [illegible] in noise-hazardous areas and soldiers working in noise-[illegible] industrial type operations.

(c) Maintain a current inventory of all noise-hazardous [illegible] using DD Form 2214 (Noise Survey) until HHIM [illegible] date noise information.

(d) Provide the names of noise-exposed personnel and the magnitude of their noise exposure to the—

1. Hearing conservation officer.

2. Unit commander or supervisor of the individual.

(e) Establish risk assessment codes (per AR 385–10) and forward the noise survey results, which indicate a violation, to the designated safety and occupational health official for inclusion in the violation inventory log.

(f) Establish appropriate contours and advise unit commanders or supervisors how to properly post these contours.

(9) Unit commanders or supervisors of noise-hazardous areas will—

(a) Appoint a unit hearing conservation manager and ensure that this individual inspects helmets and/or noise muffs and requisitions hearing protectors to ensure an adequate supply.

(b) Prepare a unit SOP detailing the hearing conservation program.

(c) Purchase new equipment that generates the lowest noise levels feasible.

(d) Notify the IMA of any suspected hazardous-noise levels or changes in hazardous-noise levels in their work areas.

(e) Endorse a command emphasis letter explaining the importance of hearing conservation.

(f) Provide appropriate hearing protectors free of charge to their noise exposed personnel per AR 385–10.

(g) Ensure that noise-exposed personnel under their supervision—

1. Are provided appropriate audiometric evaluations.

2. Attend annual health education briefings.

3. Follow recommendations from audiometric examinations, medical evaluations, and noise surveys.

4. Wear hearing protectors.

5. Report for scheduled medical examinations.

6. Are notified of their exposure measurements.

7. Are allowed to choose from the appropriate approved hearing protectors.

(h) Ensure that all soldiers and noise-exposed civilians under their supervision retain a pair of preformed earplugs as an item of individual equipment.

(i) Require noise-exposed soldiers (per AR 670–1) to wear earplugs and carry the earplug carrying case as part of the battle dress uniform when appropriate.

(j) Provide copies of regulations, technical bulletins, and other hearing conservation documents to employees, or their representatives, on request.

(k) Ensure that noise-hazardous areas and equipment are marked with proper danger signs and decals.

(l) Post 29 CFR 1910.95 in noise hazardous workplaces.

(m) Monitor the use of engineering controls.

(n) Refer any personnel under their supervision to the MTF for any hearing problems or complaints associated with the wearing of hearing protectors.

(o) Initiate disciplinary action when appropriate.

(10) Noise-exposed personnel will—

(a) Correctly wear approved and properly fitted hearing protectors when exposed to hazardous-noise levels.

(b) Report for all scheduled medical examinations and health education briefings concerning hearing conservation.

(c) Report any hearing problems or difficulties associated with hearing protectors to their supervisor.

(d) Maintain hearing protectors in a sanitary and serviceable condition.

(e) Wear noise dosimeters to evaluate noise exposure, when requested.

(f) Keep hearing protection in their possession.

5–17. Occupational health counseling

a. OH counseling is concerned with two major areas: health implications of the work environment and general health promotion and maintenance. This includes—

(1) The 29 CFR 1960 mandates counseling for employees during job-related health screening or assessment that incorporates appropriate ann[illegible]on in the health record. This requires coordinated action of [illegible] staff and supervisors.

(2) Employee orientation to the available OH services.

(3) Supervisor orientation and guidance regarding responsibilities for employee health.

b. The elements of an occupational health education (OHE) program are defined in paragraph 5–18.

5–18. Occupational health education

a. The Occupational Health Education Program is an integral part of the Occupational Safety and Health Program.

b. The objectives are to—

(1) Ensure that employees (civilian and military) are aware of the actual and potential hazards of their workplace.

(2) Identify, evaluate, and modify those work practices that can be changed through OHE.

5–19. Chemical and/or nuclear surety

OH support will be provided to all workers involved in chemical and/or nuclear surety operations. The exact services will depend on the onsite exposures, but will include all medical aspects of the chemical and nuclear surety programs as described in AR 50–5, AR 50–6, and DA Pam 40–8.

5–20. Reproductive hazards

a. The reproductive hazards program assures that—

(1) Male and female employees are informed about potential work area reproductive hazards.

(2) The pregnant employee (military and civilian) and her fetus are not endangered by the employee's work assignment.

b. The program will include—

(1) Identifying work areas or occupations that present potential health reproductive hazards.

(2) Counseling all employees during preplacement or periodic job-related examination about the nature of any potential hazards to reproduction.

(3) Informing females about availability of job accommodation or transfer in the event of pregnancy (FPM chap 630 and AR 40–501).

(4) Instituting policy or procedure to ensure prompt notification to the OH clinic by pregnant employees as soon as the pregnancy is known.

(5) Assessing the employee's job assignment and work environment when pregnancy is known. When justified, specific job limitations should be recommended after consultation with the person's physician. Limitations due to pregnancy will be treated like any other medically certified temporary disability (FPM chap 630, AR 40-501, and AR 635–100).

(6) Providing periodic follow-up and counsel as indicated, including pregnancy outcome evaluation.

5–21. Records and forms

a. Obtain a health history from each permanent civilian employee upon employment and initiate a medical record. Records will be maintained by the appropriate MTF and kept confidential according to AR 40–66. They will be disposed of under AR 25–400–2. Entries into medical records will meet the requirements of AR 40-66. Medical records of civilian employees who are also military medical beneficiaries will be cross-coded to identify this dual status.

b. Results of atmospheric sampling affecting the employee conducted under the Occupational Health Program will be included in the military or civilian medical records and retained per AR 25–400–2. Documentation of sampling, even for negligible results, is important in assessing the present and past exposure history and in meeting legal obligations. (Atmospheric sampling results and recommendations will be posted in the work area to notify the employee and the supervisor.)

c. The following forms are available for use by the OH service.

(1) Outpatient treatment record forms authorized by AR 40–66.

(2) DD Form 689 (Individual Sick Slip).

(3) DD Form 1141 (Record of Occupational Exposure to Ionizing Radiation).

(4) DD Form 2215 (Reference Audiogram).

(5) DD Form 2216 (Hearing Conservation Data).

(6) Office of Workers' Compensation Program Forms under FPM chapter 810.

(7) SF 78 (United States Civil Service Commission Certificate of Medical Examination).

(8) SF 93 (Report of Medical History).

d. Nonmedical forms that may be filed in the employee medical record to provide supplementary medical data include—

(1) OF 345 (Physical Fitness Inquiry for Motor Vehicle Operators).

(2) SF 177 (Statement of Physical Ability for Light Duty Work).

e. Overprints of standard forms may be used when approved under AR 40–66 to meet specific needs; such as, a hazard specific health history check list overprinted on SF 600 (Health Record—Chronological Record of Medical Care).

5–22. Reports

a. DA Form 3076 (RCS MED–20). RCS MED–20 will be submitted biannually by each MTF according to paragraph 3–12.

b. DA Form 3075. DA Form 3075 will be used according to paragraph 3–12 to assist in compiling data for RCS MED–20.

c. Log of Federal Occupational Injuries and Illnesses (unnumbered OSHA form). (See AR 385–40, 29 CFR 1960.67, and OSHA 2014 for use.) Coordination with the safety officer is required to assure complete collection and appropriate review and use of report data.

Section IV
Industrial Hygiene

5–23. General

Industrial hygiene is an integral part of the DA OSH programs.

5–24. Essential elements of the installation industrial hygiene portion of the Occupational Safety and Health Program

The essential industrial hygiene elements to be implemented at each installation are specified in TB MED 503.

Section V
Personal Protective Equipment

5–25. General

The use of PPE is an integral part of the Occupational Safety and Health Program for all soldiers and civilian employees and requires input from both medical and safety personnel who are qualified in determining when, where, and what type of equipment will be used. Individuals who deliberately or carelessly violate regulations regarding the wearing of personal protective equipment and clothing will be subject to disciplinary action under AR 690–700, appendix A, and the Uniform Code of Military Justice (UCMJ).

5–26. Functions

a. Installation, activity, and/or unit commanders will provide PPE to persons who, by the nature of their jobs, are required to wear this equipment (AR 385–10).

b. Installation and/or activity safety personnel, with assistance from MEDDAC or MEDCEN industrial hygiene personnel, will—

(1) Designate areas requiring the use of PPE (such as eye-hazardous areas or areas requiring the use of a hard hat).

(2) Ensure that all PPE is stored and maintained properly.

(3) Ensure that all PPE is used as required.

c. MEDDAC and/or MEDCEN industrial hygiene personnel will—

(1) Conduct the OH hazard evaluation (para 5–24) to identify areas where potential exposures may require the use of PPE such as protective eyewear, respirators, or hearing protectors.

(2) Evaluate the adequacy of the following:

(a) Safety glasses and other eye-protective equipment.

(b) Earplugs and other hearing protective equipment according to paragraph 5–13 and TB MED 501.

(c) Provide technical assistance for the installation respiratory protection program per AR 11–34 and TB MED 502. Medical fitness requirements for respirator use are addressed in TB MED 509.

(d) Provide technical assistance and guidance within the installation hazard communication program.

(e) USAEHA will provide assistance to MEDDACs and/or MEDCENs and installation commanders in the selection of approved PPE upon request.

Section VI
Asbestos Monitoring

5–27. Medical surveillance

Medical questionnaires must be administered to all employees who—

a. Are exposed to asbestos, tremolite, anthophyllite, actinolite, or a combination of these minerals above the action level.

b. Will therefore be included in the medical surveillance program according to TB MED 513.

5–28. Forms

a. DD Form 2493–1 (Asbestos Exposure, Part I—Initial Medical Questionnaire) must be obtained for all new employees who are provided preplacement medical examinations according to TB MED 513. This initial questionnaire must also be obtained on all employees currently enrolled in the asbestos medical surveillance program if they have not previously completed the form.

b. DD Form 2493–2 (Asbestos Exposure, Part II—Periodic Medical Questionnaire) must be obtained for all employees who are provided annual medical examinations according to TB MED 513.

c. These forms will be filed in the civilian employee's medical record and the military health record.

Chapter 6
Community and Family Health

6–1. General

Community and family health programs are intended to improve the level of health and increase the potential for self-sufficiency for servicemembers, their families, and other members of the military community. The cornerstone of the programs is a comprehensive community assessment that includes evaluation of health needs, based on actual or potential health problems, identification of and coordination with resource agencies, and prioritization of specific program elements. A program document developed by the community health nursing section of PVNTMED service will describe the community and list nursing objectives and goals designed to promote, protect, and restore health.

6–2. Goals

The goals of the community and family health programs are to—

a. Discover and assess actual and potential health problems of persons and families.

b. Assist persons and families in understanding their health problems and how to cope with them.

c. Assist persons and families in changing their behavior or their environment to promote health and safety.

d. Provide or secure health care and other services that persons or families may need, but cannot provide for themselves.

e. Provide or secure support for persons and families in times of stress as an interim measure while they learn to resolve or accept their situation.

f. Coordinate with and use community resources for individual families to conserve and achieve maximum use of Army CHN resources.

g. Provide continuity in health care by planning and supporting the transition from hospital to home care.

6–3. Functions

a. MEDDAC and/or MEDCEN commanders. MEDDAC and/or MEDCEN commanders have overall responsibility for the health care of persons or families in the military community.

b. Chief, PVNTMED. The chief, PVNTMED, through the CHN, assists in the overall responsibility as the principal health adviser with extensive access in the residential community and as the interface agent between the MTF and the community.

c. CHN. The specific functions of the CHN include but are not limited to—

(1) Assessing the total health needs, morbidity trends, and resources in the community.

(2) Planning, developing, organizing, implementing, and evaluating programs to meet the identified needs in the community.

(3) Providing health promotion, health education, and disease prevention programs for servicemembers and other members of the military community.

(4) Conducting a home visiting program.

(5) Supporting patient advocacy in the community.

(6) Evaluating, training, and supervising other healthcare personnel in community health nursing.

(7) Writing prescriptions for medicines when authorized by the MEDDAC and/or MEDCEN credentials committee per AR 40–2 and AR 40–400.

(8) Providing consultation to the OH nurse as outlined in paragraph 5–4*h*.

(9) Acting as health adviser to the CDS staff as directed by the MEDCEN or MEDDAC commander.

6–4. Program elements

a. Maternal health.

(1) Maternal health is concerned with the physical and emotional health of pregnant and post partum women and the parenting role of women in general. The CHN will assure that programs are provided for the military community that will enhance the understanding of all phases of the birth process and will foster awareness of the stress associated with the role of parenting in the military community.

(2) The effects of the work environment on the pregnant employee and her fetus, and the effect of the pregnant employee on the work situation (para 5–20) are primarily the responsibility of the OH nurse per guidelines developed by the OH physician. For military women, the program should be coordinated with the CHN or obstetrics and gynecology nursing staff.

b. Child health.

(1) *Program availability.* The CHN will assure that programs are available to provide parent education, well-child supervision, and support services for high-risk families. Programs will be fully coordinated with those of other military health and welfare organizations and civilian organizations.

(2) *CDS support.* PVNTMED personnel will provide health and environmental support to CDS staff and facilities per AR 608–10. Specifically—

(a) The CHN will provide health consultation to CDS staff regarding communicable disease control and disease prevention, assist CDS staff with "special needs" infants and children, and provide education and training in health related areas.

(b) Environmental health section staff will provide environmental consultation and inspection to center-based programs; specific services include, for example, consultation, inspection, and training to center-based programs, depending on local policy.

(3) *Army family advocacy program (AFAP) support.* The CHN will support AFAP per AR 608–18. Specifically, the CHN will—

(a) Provide services directed toward prevention of spouse and child abuse; for example, health education to individuals, families, and groups on subjects such as prenatal, parenting, and child development concerns.

(b) Assist with identifying high-risk families and provide direct services to selected families.

(c) Act as nursing consultant to the MTF staff to identify suspected abuse and neglect cases.

(d) Refer cases to a family advocacy case management team (FACMT) when the CHN suspects that spouse abuse or child abuse and neglect may exist.

(e) Provide nursing input into the assessment, intervention, and evaluation process of individual cases discussed during FACMT meetings.

(f) Receive referrals from FACMT for family health counseling and provide this service in the clinic, CHN office, or family home.

(g) Conduct a nursing assessment of the family in the home when indicated.

(4) *School health.* The Army CHN will provide health program supervision at on-post dependent schools that are not otherwise provided with public health nursing services. Close liaison should be maintained with nursing service at all schools attended by military dependents.

c. Community health. Programs will be established to identify persons or groups having special health needs and to provide and/or coordinate required health services.

d. Chronic disease control. The objectives are to—

(1) Identify risk factors that are associated with specific chronic diseases.

(2) Evaluate and control environmental factors that are associated with the development of chronic disease (such as occupational hazards and safety hazards).

(3) Promote knowledge regarding risk factors associated with the development of chronic disease.

(4) Facilitate, through education, the change of client behavior to reduce risk factors associated with the development of chronic disease.

(5) Identify persons at risk of developing chronic disease and initiate preventive and early treatment programs.

(6) Participate in a coordinated plan of rehabilitation for personnel with chronic disease.

e. Family safety. Family safety will be addressed by the CHN.

(1) As a routine part of home evaluation, the CHN will be alert to the common hazards in the home and instruct the family on safety.

(2) All home accidents resulting in medical care should be reported to the CHN.

6–5. Referrals

a. Referrals will be prepared under AR 40–407.

b. Telephonic referrals are acceptable for emergency situations or to alert the CHN of the written referral.

c. Referrals to the health nurse should be made regarding, but not necessarily limited to—

(1) All infants with a diagnosis of failure to thrive.

(2) Cases in which multifaceted health and social problems require home evaluation in planning and providing effective treatment.

(3) Cases requiring continuity of care from hospital to home.

(4) Persons or groups requiring health counseling regarding control of communicable or chronic diseases.

(5) Patients that require other health nursing services.

Chapter 7
Health Information and Education

7–1. General

Health information embodies the dissemination of information to the general public to raise awareness of good health practices, nutrition, and physical fitness; to raise the public's index of suspicion regarding specific disease indicators; to inform the public of risk factors that will predispose them to the development of disease;

and to inform the public of available health [illegible]es. Health education is a more specific and individual effort [illegible]nfluence patients to become active participants in their treatment or health maintenance by modifying their behavior or life-style.

7–2. Goals

The goals of health information and education are to—

a. Inform the military community through the mass media about health, illness, and disability with general instructions on health protection, including efficient use of healthcare delivery systems.

b. Inform and motivate health practitioners to use all available health education resources for their patients. It must be understood that health education programs are not intended to replace the patient-practitioner relationship and individual counseling.

c. Furnish a comprehensive service within the MEDCEN or MEDDAC to educate patients to assume maximum responsibility for their treatment and health maintenance applicable to their condition. Appropriate behavioral modification will improve management and reduce dependence on the MTF.

7–3. Functions

a. TSG will provide consultation and assistance to commanders in planning and implementing programs of health information and health education.

b. MEDCEN and MEDDAC commanders will encourage and promote health information and education programs by programming resources for the development of such programs.

c. Chief, DPCCM, in coordination with chief, PVNTMED service, will plan, develop, implement, and evaluate programs of health information for the community and health education for the patient. The extent and the effectiveness of the program will depend on the resources obtained and resourcefulness of the personnel.

Chapter 8
Medical Safety

8–1. General

This chapter contains—

a. The practices and procedures that govern the accomplishment of a safety program in Army MTFs and that supplement Army safety regulations in the AR 385-series.

b. Guidance for medical commanders, MTF safety personnel, supervisors, PVNTMED personnel, OH personnel, and hospital engineering and/or maintenance personnel to provide a safe and healthful environment for the staff, patients, and visitors in an MTF.

8–2. Army Medical Department unit safety

a. Safety program management functions and responsibilities for MEDDACs and MEDCENs are the same as for all units as prescribed in AR 385–10.

b. Accident reporting and recordkeeping procedures and responsibilities are defined in AR 385–40.

8–3. Hospital safety

a. The hospital commander has overall responsibility for safety in the hospital. However, all personnel who are employed in an MTF must be involved in an active safety program.

b. An SOH advisory council committee will be organized with representation from the administration, PVNTMED service, medical staff, nursing staff, engineering and maintenance, housekeeping, and nutritional care. The committee will meet regularly and keep written minutes of its meetings. The findings of the committee and appropriate recommended corrective actions will be reported in the committee minutes and all minutes will be signed and approved by the commander.

c. The hospital will have written safety policies to include procedures for safety of patients and accident reporting procedures.

d. A safety officer or s[illegible] manager will have authority defined in writing to act upon ha[illegible]ous conditions within the hospital.

e. A safety orientation program will be provided for all new employees. Ongoing safety education will be provided by the supervisor for all employees and will be documented. Educational programs will be developed for specific areas and activities within the hospital. All employees will be instructed by their supervisors as to the hazards inherent in their jobs and the safety rules pertaining to their specific duties. Education related to job hazards will be coordinated with OH personnel, the safety manager or officer, and the infection control nurse, when appropriate.

f. The hospital will have a written policy that prohibits smoking in the hospital or permits smoking only in designated areas. As a minimum, smoking will be controlled to protect the rights of nonsmokers from secondhand smoke. Smoking will be specifically prohibited in patient care areas, laboratories (including dental labs), darkrooms, supply rooms, pharmacies, dining facilities, snack bars, hospital exchanges, storage rooms, medical supply warehouses, material distribution supply areas, mechanical rooms, stairways, locker rooms, and where flammable and combustible liquids, and flammable gases and oxygen are used or stored.

8–4. Medical systems safety and health

a. Hazards.

(1) Significant safety and health exposures that are unique to treatment facilities can affect patients, visitors, and staff with potentially lethal consequences.

(2) PVNTMED service personnel will develop a close working relationship with the MEDDAC safety officer or manager and engineering and maintenance personnel to coordinate the identification and elimination of hazards. Refer to USAEHA TG No. 152 for additional guidance.

b. Fixed facilities.

(1) Electrical safety requirements are defined in the Accreditation Manual for Hospitals (AMH), Joint Commission on Accreditation of Healthcare Organizations (JCAHO); the National Fire Prevention Association (NFPA) Standards 70 and 99; and 29 CFR 1910.

(2) Fire safety requirements are defined in the AMH, JCAHO; NFPA Standards; and 29 CFR 1910.

(3) General safety requirements are defined in the AMH, JCAHO; 29 CFR 1910; and the AR 385-series.

(4) Environmental health requirements are defined in TB MED 2, the AMH, JCAHO; and chapters 4 (sec III), 11, 12, and 14 of this regulation.

(5) Industrial hygiene requirements are defined in TB MEDs 6, 266, 501, 502, 503, and 510; NIOSH Publications 75–137, 77–140, 77–171, and 77–200; and 29 CFR 1910.

c. Field operations. Until definitive military-unique safety criteria for field operations and mobile facilities are issued, every attempt should be made to comply with the intent of codes and standards for fixed facilities (*b* above).

Chapter 9
Radiation Protection

9–1. General

a. The Army radiation protection program is directed towards safeguarding personnel from unnecessary exposure to ionizing and nonionizing radiation. The program is based on—

(1) Control of radiation sources.

(2) Control of personnel.

(3) Monitoring and education of personnel.

(4) Measurements of radiation emissions.

(5) Medical examinations to detect evidence of changes due to radiation.

b. Protection depends on exercise of command authority, individual compliance, and an organization specifically devoted to radiation protection.

9–2. Purpose

This chapter prescribes the methods for the control of potential health hazards resulting from the procurement, possession, storage, transportation, use, and disposal of radioactive materials or equipment capable of producing potentially hazardous ionizing or nonionizing radiation. This chapter is not intended to conflict with or supersede established procedures for radiological defense.

9–3. Goal

The two radiation protection primary goals are to minimize the—

a. Ionizing radiation exposure (individual and collective) to as low as reasonably achievable (AR 40–14/DLAR 1000.28).

b. Release of radioactive effluents into the environment (AR 200–1).

9–4. Organization

a. Radiation control committee. AR 40–14/DLAR 1000.28, AR 385–11, and TB MED 525 prescribe the requirements for the composition and responsibilities of the radiation control committee. The radiation control committee should also advise the commander on nonionizing radiation hazards and methods to control these hazards.

b. Radiation protection officer.

(1) The commander will designate (in writing) an RPO and an alternate RPO whose primary duties are to manage the radiation protection program. The RPO will be provided training, equipment, and a support staff commensurate with the extent of his or her responsibilities. The RPO will be responsible for managing the ionizing radiation protection requirements specified in AR 40–14/DLAR 1000.28, AR 385–11, and TB MED 525 as well as the Nonionizing Radiation Protection Program (AR 40–46 and USAEHA TG No. 153). Complete program files should be maintained by the RPO to include the current records of inventory, SOPs, and records of related safety instruction.

(2) Medical activities with nuclear medicine services require a full-time RPO qualified under TB MED 525.

9–5. Medical surveillance

a. Personnel potentially exposed to ionizing radiation in their occupational environment will receive medical examinations as required by AR 40–14/DLAR 1000.28.

b. Personnel potentially exposed to nonionizing radiation will receive medical examinations as required by AR 40–46, TB MED 523, TB MED 524, and USAEHA TG No. 153.

9–6. Personnel dosimetry

a. Ionizing radiation.

(1) The DA policies regarding ionizing radiation exposure standards, the use of personnel dosimeters, and the recording of occupational exposure to ionizing radiation are specified in AR 40–14/DLAR 1000.28.

(2) Bioassay procedures will be performed when radioactive materials are used in such a manner that they could be inhaled, ingested, or absorbed into the body (AR 40–14/DLAR 1000.28).

(a) The necessity, frequency, and methodology for performing bioassay procedures will depend on the radionuclide(s), their chemical and physical form, and the amount of material potentially available for entry into the human body (AR 40–14/DLAR 1000.28).

(b) Unless prescribed elsewhere the type of analysis and the frequency of the bioassay procedure will be determined by the IMA in consultation with the RPO.

(c) Bioassay services are available from the Commander, USAEHA, ATTN: HSHB–ML–R, Aberdeen Proving Ground, MD 21010–5422. Specimens should be sent directly to USAEHA. Do not send the specimens through command channels. Each specimen should be accompanied by a properly completed laboratory form (SF 557 (Miscellaneous)). The following information, in addition to the data normally entered on laboratory forms, is required in the remarks block to enable USAEHA to evaluate the internal exposure from radioactive material:

1. Possible e ıre date and time (if known), in case of acute exposure.

2. Duration of exposure, in case of chronic exposure.

3. Chemical and physical form of radionuclide and suspected activity involved.

4. Suspected route of entry.

5. Any additional information concerning the situation that prompted the request (if necessary, on a separate sheet or consultation sheet (SF 513, (Medical Record—Consultation Sheet)).

(3) All actual or alleged overexposures to ionizing radiation will be investigated and reported under AR 40–14/DLAR 1000.28 and AR 385–40.

(4) The RPO will calculate the collective exposure to ionizing radiation of all persons for which a DD Form 1141 is maintained. This calculation will include the most recent 3 months of reported exposures.

(5) The RPO will report quarterly the following information to the radiation control committee:

(a) Collective exposure: Person-roentgen equivalent man (person-rem) in a quarter. (Person-rem is calculated by adding all exposures during a quarter.)

(b) Average exposure: rem/quarter. (Rem/quarter is obtained by dividing person-rem by the total number of persons monitored.)

(c) Highest exposure: rem.

b. Nonionizing radiation. No suitable personnel dosimeters are available.

9–7. Protective clothing and equipment

a. Ionizing radiation.

(1) Concentrations of airborne radioactive materials located in the breathing zone of radiation workers will not exceed concentrations as specified in 10 CFR 20.103 without adequate respiratory protection (TB MED 502).

(2) Protective clothing and respiratory protective equipment may be required to minimize the exposure of the worker. When required, such equipment and clothing will be identified for control purposes. (See AR 385–10 and AR 385–32.)

(3) Adequate respiratory protection programs will be established to assure that equipment appropriate to the potential hazard is selected, used, and maintained (TB MED 502). The use of respiratory protection is not a suitable substitute for proper ventilation, containment, and process controls, and will not be used in place of other feasible engineering controls.

(4) A respirator that is not used routinely, but maintained ready for emergency use, will be inspected after each use and at least monthly to assure that it is in satisfactory operating condition (TB MED 502). A record will be maintained of inspection dates and findings (AR 25–400–2).

(5) When laboratory hoods are used to maintain minimum levels of airborne radioactive material in work or storage areas, the airflow in the hood will have an average velocity of at least 100 linear feet per minute (fpm) (30 meters/minute (m/min)) plus-or-minus 10 percent through the fully open face. Glove box hoods must have an inward average velocity of 50 fpm through doors/ports or 0.25 inch static pressure on a closed system. Hoods should be provided with a dual speed fan to permit operation at a higher velocity while the hood is in use and at a lower velocity when it is closed. Bypass openings will be provided to maintain proper hood and room pressure balance. The variations in air velocity through the open face will not exceed plus-or-minus 20 percent. Each hood will have an independent exhaust system with the fan installed outside the building or at the point where the exhaust leaves the building to ensure that the duct work inside the building is under negative pressure. The point of discharge should be at least 10 feet (3.1 m) above the roof and 100 feet (31 m) from any air intake to minimize radioactive effluents being carried back into the same or adjacent buildings. The fan should discharge into a vertical stack with no directional baffles or projections (TM 5–810–1).

(6) Laboratory hoods should be evaluated and flow measurements made at least semiannually. Documentation of such measurements will be maintained under AR 25-400-2.

b. Nonionizing radiation. PPE is only used when other control measures do not provide adequate protection. TB MED 524 provides guidance for the proper use and marking of laser eye protectors.

9-8. Radiation detection and measuring equipment

a. Ionizing radiation.

(1) All radiation protection survey instrumentation for health and safety monitoring of radiation sources will be calibrated at the frequency specified in TB 750-25.

(2) All pocket dosimeters used for health and safety purposes will be calibrated, inspected, and certified.

(3) Radiation protection survey instrumentation will have a DA Label 80 (U.S. Army Calibrated Instrument) placed in a conspicuous location indicating the date the instrument was calibrated as specified in DA Pam 738-750. Energy dependence and any necessary correction factors should be provided with the calibration data.

(4) Faulty radiation protection survey instrumentation will be tagged with a DA Form 2417 (U.S. Army Calibration System Rejected Instrument) to avoid use before being repaired (DA Pam 738-750).

(5) The operational status of all radiation protection survey instrumentation will be verified before removal of shielding from a radiation source or entering a known or suspected radiation field.

(6) All radiation measuring equipment used with nuclear medicine procedures will be calibrated as specified in TB MED 525.

(7) All dosimetry systems used in the calibration of therapeutic x-ray and gamma-beam equipment will be calibrated as specified in TB MED 521.

b. Nonionizing radiation. Other than the use of recommended instrumentation for the measurement of microwave oven leakage, the instrumentation required to adequately assess the hazards of high intensity ultraviolet, infrared, visible, ultrasound, radio frequency, microwave, and laser radiation is highly specialized and expensive. Therefore, it should only be purchased when personnel capable of making the assessment are assigned.

9-9. Control of radiation sources

a. Control of both ionizing and nonionizing radiation hazards.

(1) Commanders of installations or activities responsible for the design or development of equipment capable of producing radiation or the incorporation of equipment or radioactive materials into Army systems will ensure that such equipment or devices have been evaluated for potential health hazards by USAEHA. This evaluation will take place during the research, development, test, and evaluation phase of the equipment and before acceptance or adoption (AR 70-1 and AR 385-10). A reevaluation of the equipment must be made if substantial modifications are made between the initial USAEHA evaluation and final acceptance or adoption.

(2) Commanders of installations or activities will ensure that—

(a) SOPs are published and enforced. They will specify the safety policies concerning operational limitations placed upon equipment, and the control of the movement of personnel to ensure that the exposure of personnel is minimized. Under no circumstances should exposure exceed established limits (AR 40-14/DLAR 1000.28, AR 40-46, and USAEHA TG No. 153). Copies of these SOPs will be forwarded to the RPO.

(b) All persons working in or frequenting any portion of a controlled area where radioactive materials are used or stored, or where equipment capable of producing radiation is energized, will be informed of the radiation hazard involved and instructed regarding the rules and procedures to be observed (AR 40-14/DLAR 1000.28, AR 40-46, and USAEHA TG No. 153). Instruction topics will include—

1. Safe working techniques and procedures.

2. Proper use of protective equipment and devices.

3. Procedures to be followed when an accident or incident occurs or in other emergency situations.

4. Daily preoperational, operational, and postoperational checks or surveys to ensure proper radiation safety.

5. Procedures for maintaining an operational log for each piece of equipment that will identify when interlocks and other control or warning devices are bypassed or overridden.

(c) Records of these instructions will be maintained by the RPO. They will include a brief outline of the instructions and a list of persons who received these instructions (AR 25-400-2).

(d) All controlled areas will be properly marked, have proper warning signs, and, where required, have proper warning signals and safety switches (AR 385-30, TB MED 521, and TB MED 525).

(e) Individuals are designated (in writing) to receive notice in the event of emergencies such as major spills or accidental release of radioactive material, bodily injury, fire, and major malfunction of equipment that may produce or generate potentially hazardous radiation fields. A list of those persons and phone numbers will be posted in each controlled (restricted) area.

(f) A comprehensive inventory of radioactive material and equipment capable of producing radiation will be maintained (AR 40-46, AR 385-11, and TB MED 525). A copy of this inventory will be forwarded to the RPO.

b. Control of ionizing radiation hazards.

(1) Commanders of installations or activities will not possess, use, or transfer radioactive materials or use equipment capable of producing ionizing radiation in such a manner that could cause any person to receive a dose equivalent in excess of the radiation exposure standards specified in AR 40-14/DLAR 1000.28. Personnel responsible for the Radiation Protection Program will be continually vigilant concerning means to reduce exposure of personnel to ionizing radiation.

(2) The prevention of radioactive contamination is especially important for persons working with unsealed radioactive materials. Every user will maintain constant vigilance to minimize or prevent contamination and to contain its spread (AR 385-11 and TB MED 525).

(3) The RPO will perform surveys of all laboratories and work areas where radioactive materials are used or stored (AR 385-11, AR 700-64/DLAM 4145.8/NAVSUPINST 4440.34/MCO 10330.2/AFR 67-12, and TB MED 525). Radiation surveys should be performed routinely to indicate any changes in radiation levels in the work area. The surveys will evaluate the effectiveness of controls and procedures, ventilation, respiratory protective equipment, fixed and transferable surface contamination, airborne radioactive materials, and general exposure levels in the work area and environments. The frequency of any radiation survey will depend on such factors as the type of operation, the type and level of the radiation, the rate at which changes could unknowingly develop, the potential hazard, and the degree of personnel involvement. Since there may be possibilities of radiation or radioactive contamination occurring in generally unexpected locations, it is desirable to occasionally monitor so-called "clean/cold" or uncontrolled (unrestricted) areas.

(4) Smoking, eating, drinking, or applying cosmetics will not be permitted in work areas where unsealed radioactive materials are used or stored. Food or drink will not be stored in an area where radioactive materials are stored.

(5) To reduce the possibility of fire or other major disasters, buildings where radioactive materials are used and stored should be constructed of fire retardant materials. Fire prevention and military police personnel will be informed of any buildings or areas where potential radiation hazards may exist. Specified conditions under which it is safe to handle emergencies will be explained carefully to firefighters, security guards, and military police, and included in the appropriate SOP. These conditions will be respected unless they are modified by the responsible RPO or safety manager.

(6) All ionizing radiation accidents or incidents will be investigated and reported according to the requirements in AR 40-14/DLAR 1000.28 and AR 385-40.

(7) The planning, procurement, installation, calibration, preventive maintenance, evaluation, and use of diagnostic and therapeutic x-ray and gamma-beam equipment will be according to TB MED 521.

(8) Radiation therapy equipment used for human treatment will be calibrated by a qualified expert as required by TB MED 521. Evidence of calibration will be retained so it will be available to a surveyor or inspector (AR 25-400-2).

(9) As required by TB MED 521, a radiation protection survey by a qualified expert will be performed on all new or modified diagnostic or therapeutic facilities before clinical use.

(10) Industrial radiographic facilities will be classified and governed by procedures or conditions of the facility's Nuclear Regulatory Commission (NRC) license, DA radioactive material authorization or permit, or National Bureau of Standards Handbooks (NBSHs) 107, 111, or 114, as appropriate.

(11) A radiation protection survey by a qualified expert will be performed on all new or modified industrial radiographic facilities before placing the equipment in routine operation.

(12) Radiation protection surveys will be performed periodically by the RPO to determine the exposure or exposure rate in the environment during operation of the equipment. These surveys will be conducted in areas as deemed necessary to evaluate and control the potential radiation hazard (AR 385-11 and USAEHA TG No. 153).

(13) All radioactive material, other than nuclear weapons, will be transported (shipped and received) according to the requirements of AR 385-11, Technical Manual (TM) 55-315, and TM 55-4470-400-12-1, as appropriate. The reporting of packaging and handling deficiencies will be under AR 700-68/DLAR 4145.25/NAVSUPINST 4000.34/AFR 67-8/MCO P4400.105, and discrepancies in shipment will be reported under AR 55-38/NAVSUPINST 4610.33/AFR 75-18/MCO 4610.19/DLAR 4500.15.

(14) The disposal of unwanted radioactive material will be per AR 385-11.

c. Control of nonionizing radiation hazards. Commanders of installations or activities responsible for the operation or testing of nonionizing generating equipment will take the necessary measures to ensure that—

(1) The potentially hazardous system has been evaluated by USAEHA before operation, and hazards criteria for the system are available and being observed.

(2) Personnel working in the vicinity of such equipment are informed of potential personal health hazards.

(3) SOPs are published and enforced to deal with operational limitations placed on the equipment and control of the radiation field to minimize personnel exposure.

(4) Periodic operational checks are conducted on all radiation safety devices such as alarms, lights, and interlocks installed on or near radiating sources. Such tests should be conducted prior to system operation. Defective devices should be repaired or replaced before continuing operation. A log should be maintained of all such cases.

(5) Safety procedures prescribed in TB MED 523 or TB MED 524, as applicable, are being complied with.

(6) When interlocks and other control or warning devices are bypassed or overridden, operational logs must indicate the purpose and duration.

(7) All nonionizing radiation areas are properly marked, have appropriate warning signs and, where required, have proper warning signals and safety switches.

(8) All alleged overexposures or accidents involving nonionizing radiation will be reported under the requirements in AR 40-400 and AR 385-40.

d. Monitoring personnel. Monitoring personnel will ensure that personnel potentially exposed in their occupations to ionizing radiation or radioactive materials are appropriately monitored. (See para 9-5.)

9-10. Licenses and authorizations

a. TB MED [illegible] gives policies and procedures for the control and use of radioactive materials for medical purposes. It also prescribes the requirements and procedures for obtaining an NRC license or DA radioactive material authorization for the possession and use of materials not under specific licensing control of the NRC, the materials being used for medical purposes.

b. AR 385-11 prescribes policies and procedures for the control and use of radioactive materials for nonmedical purposes. It also prescribes the requirements and procedures for obtaining an NRC license or DA radioactive material authorization or permit for the possession and use of materials not under specific licensing control of the NRC for nonmedical purposes.

c. AR 385-11, AR 700-64/DLAM 4145.8/NAVSUPINST 4000.34/AFR 67-8/MCO 4400.105, and TB MED 522 prescribe policies and procedures for the control of radioactive commodities within the DA supply system.

9-11. Radiologic facility shielding analysis

a. Design plans for the modification of existing medical radiographic facilities and design or construction specifications for new medical radiographic facilities must be reviewed by a qualified expert prior to modification or construction.

(1) The CONUS qualified expert review will be provided by either a MEDCEN having an assigned nuclear medical science officer or the USAEHA.

(2) The OCONUS qualified expert review will be provided by either the 7th Medical Command or the USAPACEHEA.

b. Plans and design specifications for industrial radiologic facilities will be reviewed and evaluated by a qualified expert before the modification or construction of a new industrial radiologic facility.

9-12. Laser and radiofrequency radiation exposure incidents: reporting procedures and registry maintenance

a. The radiological hygiene consultant to TSG will request that USAEHA conduct an on-site investigation when—

(1) An employee's lesion or ocular complaint may have resulted from exposure to nonionizing radiation.

(2) An exposure to radiofrequency radiation is five times or more the permissible exposure limit.

b. If an alleged laser or radiofrequency radiation exposure occurs, the affected installation—

(1) Calls USAEHA within 24 hours to forward incident information.

(a) During duty hours, contacts the Chief, Laser Microwave Division (AUTOVON 584-3932), or the Chief, Occupational and Environmental Medicine Division (AUTOVON 584-3534).

(b) During nonduty hours, contacts the duty officer, or noncommissioned officer-of-the-day (AUTOVON 584-4375).

(2) Ensures that the potentially exposed individual(s) receive(s) an appropriate medical evaluation within 24 hours of the exposure.

(3) Develops and transmits an—

(a) RCS MED-16 report per AR 40-400.

(b) RCS DD-R&E (AR) 1168 (Radiological Incident Report) per AR 385-40.

c. USAEHA will conduct investigations of alleged laser or radiofrequency radiation exposures and maintain the U.S. Army Laser and Radiofrequency Radiation Incident Registry.

Chapter 10
Pest and Disease Vector Prevention and Control

10-1. General

DA pest management, as a single comprehensive program, encompasses—

a. Personnel training.

b. Pest surveillance.

c. Recommendations for and implementation of IPM practices.

d. Assessment of environmental, safety, [illegible] health consequences of IPM practices.

e. Technical support.

10–2. Objectives

The comprehensive IPM program—

a. Provides prevention and control of pests that could cause major medical or economic harm.

b. Protects personnel and the environment from the toxic effects of pesticides.

c. Assures the preparedness of field units to prevent and control vector-borne disease in time of war, military conflict, or national disaster. (See chap 14.)

10–3. Functions

a. Armed Forces Pest Management Board. Under AR 10–64/OPNAVINST 6700.2/AFR 160–29/MCO 5420.18A, the board is a joint activity of DOD that—

(1) Develops and recommends policy to the Assistant Secretary of Defense (Production and Logistics) for the DOD Pest Management Program.

(2) Serves as a scientific advisory body to DOD components on pest management.

(3) Coordinates and develops requirements for pest management related research, development, and testing within DOD.

(4) Operates the Defense Pest Management Information Analysis Center.

(5) Maintains liaison with other Federal agencies having similar programs.

b. Installation medical authority. The IMA will—

(1) Establish and evaluate health criteria and standards of pest management programs; provide advice and technical guidance to program operators on safe storage, use, and disposal of pesticides; provide training of personnel involved in pest and disease vector control operations; and review installation and field unit pest management programs and plans, and provide technical assistance and evaluation of the health, safety, effectiveness, and environmental soundness of the programs.

(2) Conduct surveillance of vectors and pests affecting the health and welfare of the Army community; conduct ecological and biological studies of pests, as required; determine pest resistance to pesticides; monitor pesticide levels in the environment; and evaluate the safe use of pesticide dispersal equipment and material.

(3) Recommend that the commander assure the proper use of insect or arthropod repellents by soldiers entering areas where the risk of vector-borne diseases and/or troublesome numbers of pest bites occur. Maximum repellent protection can be provided to the soldier by use of the new topical repellent lotion (national stock number 6840–01–284–3982) on exposed skin surfaces and use of the clothing repellent, permethrin, on the battle dress uniform. The new clothing repellent has a regulatory agency label pending.

(4) Conduct operations, as required, for the control of disease vectors and animal reservoirs through TOE PVNTMED teams and for training AMEDD personnel. Operations of these types will be coordinated with the facility engineer to preclude duplication.

(5) Assure, through coordination with the facility engineer, that the installation pest management program complies with those laws and regulations relevant to the health and safety aspects of pest management.

c. Facility engineer. Conducts control programs for animal and plant pests under AR 420–10, AR 420–74, and AR 420–76.

d. Quartermaster laundry and bath units. Provide repellent impregnation of uniforms and delousing operations when recommended by the IMA.

e. USAEHA. The USAEHA will—

(1) Provide consultative, field, and laboratory services for second- and third-level support of the IMA functions listed above.

(2) Function as executive agent for the DOD pesticide regulatory action system which includes—

(a) Providing pest and [illegible]ticide information to medical and other DOD activities via [illegible]OD Pesticide Hotline.

(b) Reviewing pest management regulatory documents proposed by Federal and State agencies.

(c) Drafting DOD responses to regulatory proposals.

10–4. Pesticides

a. The use of pesticides to control medically and economically important pests will remain an integral part of the DA pest management program. However, nonchemical IPM techniques will be emphasized to minimize the unnecessary introduction of toxic substances into the environment. Where nonchemical IPM methods fail to adequately manage a pest population, chemical control may be used as a supplement. However, chemical control will only be used in conjunction with nonchemical control measures.

b. The use of preventive or scheduled periodic pesticide treatments is prohibited unless approved by the pest management consultant concerned and based upon surveillance data or past pest problems.

c. Pesticide monitoring programs will be established to assess possible adverse environmental or public health effects and to monitor the health and safety of persons occupationally exposed to pesticides. (See para 11–10.)

d. Procurement, storage, use, and disposal of pesticides will be under AR 200–1, AR 420–76, Executive Orders, and Federal laws and regulations as applicable. Oversea commands will abide by applicable U.S. Code sections and Status of Forces Agreements.

e. Only personnel trained and/or certified under AR 420–76, and/or the DOD plan for certification of applicators of restricted use pesticides, will apply or supervise the application of pesticides.

f. Units authorized to use pesticides will procure only those items and amounts authorized in SB 3–40 and CTA 50–970. Every effort will be taken to maintain the integrity and operational usefulness of those pesticide items subject to deterioration or degradation. Medical units requiring nonstandard pesticide items or standard pesticides not identified in the TOE or TDA will submit requisitions to the MACOM surgeon for approval prior to the submission of the requisitions to supply channels.

g. Pesticides and equipment issued or distributed to military personnel and occupants of family housing for use in self-help programs (AR 420-22) will normally be restricted to standard issue items identified by the AFPMB as being available for use by untrained and uncertified personnel. Center managers will be guided by MACOM professional pest management personnel and the IMA in standard or nonstandard item selection and issue.

h. Guidelines for selecting, selling, and handling pesticides in post exchanges and commissaries are as follows:

(1) Pesticides selected for sale in post exchanges and commissaries will be registered for "General Use" by the EPA or by the State in which the facility is located. Items with labels indicating that only professional pest management personnel may utilize the product or items labeled "Restricted Use" will not be sold.

(2) All pesticides sold in post exchange and commissary facilities will be arranged separately on sales display shelves and in storage according to type (that is, herbicides, insecticides, rodenticides, fungicides, and disinfectants). Pesticides will be segregated from all food products in storage, during transportation, and while on display. Segregation means there will be sufficient space between pesticides and food items so that spillage or leakage will not contaminate food.

(3) Employees handling pesticides will be familiar with proper measures for safe handling. They will use display practices that minimize accidental breakage by customers and the handling of products by children. They will also be familiar with cleanup procedures for spills (app C).

i. Guidelines for pesticides spills are as follows:

(1) Guidance on the cleanup and disposal of small quantity pesticide spills (1 quart (qt) or less) is given in appendix C. Larger spills will be reported and decontaminated according to the installation's oil and hazardous substances spill control and contingency plans (AR 200–1, paras 8–10 and 8–11).

(2) Immediate assistance for emergency type pesticide spills that threaten life or gross contamination of the environment can be obtained by calling the Chemical Transportation Emergency Center (CHEMTREC). The telephone number for CHEMTREC is (800) 424–9300. For spills outside CONUS or within the Military District of Washington, call (202) 483–7616.

(3) Information on decontamination of nonemergency type pesticide spills may also be obtained by dialing the CHEMTREC number given above. The operator must be told immediately that—

(a) No emergency exists.

(b) The call is a request only for decontamination information.

j. Information on applicable Federal and DA regulations, EPA, and State registered pesticides and pesticide label information may be obtained from USAEHA by calling the DOD Pesticide Hotline at (301) 671–3773 or AUTOVON 584–3773. An answering device is available to receive questions outside the normal USAEHA duty hours.

10–5. Pest control equipment and devices

a. Equipment and devices listed in Federal Supply Catalog Identification Lists (C–3000/6300 and C–6700/9500) will normally be used in pest management operations. Only standard items will be requisitioned by medical TOE units. Activities other than TOE organizations authorized to conduct pest management operations or evaluations may requisition standard or nonstandard pesticide dispersal equipment. Requests for approval to purchase nonstandard items will be submitted to the MACOM pest management professional for approval. Approval will be obtained prior to initiating procurement action.

b. Medical personnel conducting health assessments of pest management programs will ensure that equipment used is compatible with the pesticide formulation being applied and that equipment is properly calibrated. USAEHA will provide technical assistance in the calibration of ultra low volume equipment and droplet size determination.

c. Dispersal equipment will be rinsed before the equipment is used for application of another pesticide or at the conclusion of each day's activities. Rinse water from spray equipment will not be placed into a sanitary sewer, but should be used as a diluent for subsequent spraying operations or treated as a pesticide-related waste and disposed of per current Federal, State, or host country requirements.

10–6. Training and certification

a. Commanders will ensure that only personnel trained and/or certified under AR 420–76 and/or the DOD plan for certification of pesticide applicators for restricted use pesticides will apply or supervise the application of pesticides except for those pesticides that have been identified specifically for use by untrained, uncertified personnel by the AFPMB (DOD Directive 4150.7).

b. The Academy of Health Sciences (AHS), U.S. Army, will conduct certification and recertification training to meet the standards outlined in the DOD plan. In addition, AHS will conduct other resident and nonresident training as requested by the Office of the Chief of Engineers and other military or Federal organizations to meet specific pest management training needs. Pest management professionals requiring certification may direct their requests to the AFPMB. Recertification must be obtained every 3 years.

c. Training and/or certification for the aerial application of pesticides is provided by the Air Force 907th Tactical Airlift Group Spray Branch, Rickenbacker Air National Guard Base, Ohio, AUTOVON 950–4694/3106 or commercial (614) 492–4694/3106.

10–7. Pest surveillance

a. Installation pest management programs will involve—

(1) Surveillance of pest populations.

(2) Recommendations of measures to control pests.

(3) Application of pest control measures.

(4) Reevaluation of pest populations to determine the effectiveness of control.

b. The IMA will conduct surveillance of pests of medical importance using the guidance provided in USAEHA TG No. 102 and recommend appropriate IPM measures. IPM recommendations will be coordinated with MACOM pest management professionals.

c. Surveillance will be recorded using the guidance provided in USAEHA TG 102. The time or labor expended by the IMA in surveillance activities will be transmitted to the facilities engineer for inclusion on the monthly DD Form 1532 (Pest Management Report). Results of surveillance will be reported to the director of facilities engineering pest management personnel for their use in determining appropriate control measures. Chemical control measures will be initiated only after nonchemical control methods have been fully implemented and have failed to control the pest population. At no time will pesticides be applied in a food handling facility without current surveillance data documenting a pest infestation.

d. Records of surveillance activities and pest management recommendations will be maintained to provide documentation and permit short- and long-term assessments of the effectiveness and environmental consequences of the installation pest management programs.

e. The USAEHA will provide pest identification services as required.

f. Upon request, USAEHA will provide special onsite investigative services in the identification and assessment of pest problems.

10–8. Pest resistance

USAEHA will support CONUS installations with pest resistance surveys and/or provide laboratory and technical assistance as required. OCONUS installations will be supported by medical laboratories in oversea commands. Pest resistance support will be coordinated with installation professional pest management personnel.

10–9. Pest management in Army food handling establishments

a. General. IPM program principles and measures will be applied in food handling establishments (as defined in 38 FR 21685). At no time will pesticides be applied in a food handling establishment without current or historical surveillance data documenting the pest infestation. The effectiveness of chemical control measures will be assessed by the IMA, and the results will be conveyed to the pest control activity. Additional guidance on pest management operations in food handling establishments is provided in TB MED 530.

b. Food preparation areas. Pesticide applicators will coordinate with food service personnel to ensure the safety, effectiveness, and efficiency of the pesticide treatment. Pesticide treatments will be conducted only when the food preparation area is not in operation and must be used according to the pesticide label precautions. Automatic aerosol pesticide dispensing devices will not be used in food serving or preparation areas. Insect electrocutors or sticky fly papers may be located in nonfood areas of food handling establishments, provided that their use is in a manner that will preclude contamination of any food or food-contact surfaces and their use is not in lieu of proper sanitation. Pesticides, except disinfectants, will not be stored in food serving facilities.

10–10. Pest management in Army MTFs

a. General. The management of pest infestations in MTFs will be accomplished through timely surveillance and effective pest management procedures according to USAEHA TG 106. MEDDAC or MEDCEN commanders will investigate pest problems and determine pest management measures required in patient areas.

b. Pesticide applications in patient areas. Pesticides will not be applied while patients are in the immediate area. Patient areas (including, but not limited to, emergency rooms, examining rooms, wards, operating rooms, infant nurseries) will not receive preventive pesticide treatments but will be treated only when an actual

infestation is evident and nonchemical control measures have failed.

c. Food service areas in an MTF. Pest management in food service areas is addressed in paragraph 10–9. Cockroach infestations in portable food carts are difficult to control. Routine procedures for either nonchemical or chemical control will consist of numbering carts and subjecting them to the treatment of choice on a regularly scheduled basis (USAEHA TG 106). Carts treated with nonresidual pesticides will not be used to transport food to patients until the carts have been steamcleaned or sterilized. Residual insecticides will never be applied to food carts because of the potential of contaminating food items. Technical assistance in controlling cockroaches in food carts may be obtained from USAEHA.

10–11. Pest management of military subsistence and stored materials

The surveillance and control of arthropods, rodents, birds, and other pests of subsistence and stored products will be conducted under DOD Directive 4150.7 and MIL STDs 904 and 1486. Reporting of losses due to pests will be conducted as outlined in DA Pam 40–17. Additional technical information concerning surveillance and control of stored product pests can be found in TM 5–632/NAVFAC MO–310/AFM 9–16. Upon request, professional assistance and guidance will be provided by the IMA or installation veterinary personnel.

10–12. Aerial dispersal of pesticides

Aerial dispersal of pesticides will be conducted under AR 40–574/AFR 91–22 and AR 420–76. All aerial dispersal of pesticides must receive appropriate prior MACOM approval. Upon request, entomologists assigned to the IMA, MACOM, or USAEHA will provide assistance in the preparation and evaluation of aerial applications. Actual application will be conducted under the direct and continuing supervision of an applicator certified in the category of aerial dispersal of pesticides.

10–13. Pesticides and pesticide container disposal

Pesticides and containers that are excess because of unserviceability, registration cancellation, or other reasons will be disposed of under 40 CFR 165. Guidance is available in AFPMB Technical Information Memorandum (TIM) No. 21. In no event will pesticides or pesticide containers be disposed of in such a way as to needlessly contaminate the environment or in a manner inconsistent with the label. Contact USAEHA, Waste Disposal Engineering Division, for pesticide disposal instructions (AUTOVON 584–2024).

10–14. Protective clothing and equipment

Responsibilities, policies, and procedures for providing protective clothing and equipment are specified in AR 385–10 and TB MED 502. Items will be requested and maintained under AR 710–2. Supply management data necessary to request standard pest management protective equipment may be obtained from AFPMB TIM No. 14. Current information on protective equipment, to include respirators approved for use with pesticides, may be obtained from the Industrial Hygiene Directorate, USAEHA (AUTOVON 584–3946).

10–15. Medical surveillance

All personnel known as pesticide applicators will be included in medical surveillance, health education, and respiratory protection programs as part of the Occupational Health Program.

10–16. Pest quarantine

The USPHS and the U.S. Department of Agriculture (USDA) policies and procedures in AR 40–12/SECNAVINST 6210.2/AFR 161–4 will be followed to prevent the introduction and dissemination of animal or plant pests of medical and agricultural importance. Guidance on materials and methods suitable for quarantine operations can be found in TM 5–632/NAVFAC MO–310/AFM 9–16.

10–17. Retrograde m[illegible]el treatment

Retrograde programs are essential to prevent the importation into the United States, its territories, trusts, and possessions of pests of medical or agricultural importance. The IMA responsible for the operation of retrograde programs will ensure the full implementation of AR 700–93.

10–18. Personal-use protective measures

a. Commanders will assure the proper use of insect or arthropod repellents by soldiers entering areas where the risk of vector-borne diseases and/or troublesome numbers of pest bites occur.

b. Insect bed nets and head nets should be considered for use in situations where their use will provide protection from bites of vector and pest species.

c. Commanders will assure the proper wearing of the battle dress uniform by soldiers to provide protection from bites of vector and pest species.

d. DA Poster 40–5 should be placed in residential, military training, hunting, and recreational areas and wild game reserves to—

(1) Warn individuals that they are entering an area infected with ticks that can transmit tick-borne diseases such as Lyme.

(2) Explain the precautions an individual should take when entering and exiting a tick infested area.

e. DA Poster 40–5 is available through normal publications channels; however, its use is controlled as follows:

(1) CONUS—Each MEDCEN commander will decide when and where in the MEDCEN's geographical area the poster will be used.

(2) OCONUS—Each major medical command commander (for example, 7th Medical Command Commander) will decide when and where in the command's geographical area the poster will be used.

(3) Modification of the poster—None is allowed.

(4) Local reproduction—None is allowed.

Chapter 11
Environmental Quality

11–1. General

a. The AMEDD fulfills a major role in the Army's effort to protect the natural environment. This chapter prescribes policies and assigns responsibilities for associated PVNTMED programs.

b. The goal is to minimize adverse environmental impact and protect community health with minimum impairment of the Army's mission or readiness.

c. Technical support may be obtained from USAEHA, 10th Medical Laboratory, and USAPACEHEA if it is beyond the local preventive medicine organizations' capability to provide the assistance.

11–2. Functions

a. The MACOMs—

(1) Establish procedures to ensure that health and welfare factors are considered during environmental assessments.

(2) Monitor health and welfare aspects of Army operations to ensure that they meet environmental objectives.

b. HSC, in addition to its MACOM functions, will—

(1) Ensure that PVNTMED personnel coordinate with environmental personnel to establish installation level PVNTMED liaison with local health regulatory agencies and supported Army activities and units.

(2) Provide MACOMs with technical assistance that includes investigations, consultations, special studies, and routine environmental surveys.

(3) Provide, through PVNTMED, AMEDD support [illegible] goals, standards, and procedures issued in AR 200[illegible]

(4) Provide AMEDD support of the Army's [illegible] pliance achievement program operated by [illegible] Engineers.

11-3. Wastewater

a. Objective. The DA objective is to dispose of Army waterborne wastes in a manner that protects water resources from contamination and preserves the public health.

b. Functions. PVNTMED will—

(1) Monitor environmental impact by reviewing wastewater data generated by routine and special Army surveillance programs.

(2) Monitor the performance of pollution abatement facilities by conducting frequent visits during routine operations.

(3) Assist installations in preparing applications for Federal and State discharge permits, review permits for general acceptability of specific parameters, and provide guidance for integrating the Best Management Practice Plan into National Pollutant Discharge Elimination System permits.

11-4. Air quality

a. Objective. The DA objective is to reduce pollutant emissions from Army stationary and mobile sources to the lowest practicable limit to protect health and ensure compliance with appropriate Federal, State, and local regulations.

b. Functions. Installation PVNTMED personnel will—

(1) Evaluate proposed and existing stationary and/or regulated sources of air pollution to ensure that they do not present a potential for adverse health effects.

(2) Maintain an up-to-date inventory of stationary air pollution sources.

(3) Inspect stationary air pollution sources periodically to assess compliance with applicable standards.

(4) Assist in the development of air pollution emergency episode plans per applicable air pollution control regulations.

(5) Assist in the preparation of Federal, State, and local air pollution permits.

11-5. Solid waste

a. Objective. The DA objective is to manage Army solid waste to ensure compliance with appropriate Federal, State, and DA regulations in a manner that permits maximum opportunity for resource recovery without jeopardizing natural resources or health and the environment.

b. Functions. Installation PVNTMED personnel will—

(1) Monitor the installation's management of solid wastes, including the stages of segregation, storage, transportation, and disposal and/or sale.

(2) Evaluate community complaints and provide health and welfare recommendations to the facilities engineer.

(3) Assist installations in preparing applications for landfill permits, review permits for general acceptability, and provide guidance in site selection.

11-6. Hazardous wastes

a. Objective. The DA objective is to manage Army hazardous waste to ensure compliance with appropriate Federal, State, and DA regulations in a manner that permits maximum recovery and protects health and the environment.

b. Functions. Installation PVNTMED personnel will—

(1) Provide technical assistance regarding potential health effects for identifying unknown waste and for selecting and/or evaluating storage, treatment, and disposal methods.

(2) Assist installations in preparing permits for hazardous waste treatment, storage, and disposal facilities; in reviewing permits for health-related implications; and in providing guidance on the operation of hazardous waste facilities in conformance with regulatory requirements and in a manner protective of health and environment.

(3) Assist and advise hazardous waste generators on means to reduce the amount of waste.

11-7. Healthcare facility wastes (general, infectious, pathological, hazardous, and radiological)

a. Objective. The DA objective is to manage healthcare facility wastes in a manner that protects health and the environment and ensures compli with appropriate Federal, State, and DA regulations.

b. Functions. The healthcare facility waste management functions are normally delegated as follows:

(1) PVNTMED personnel monitor the identification, segregation, transportation, treatment, storage, and disposal of infectious and pathological wastes.

(2) Healthcare facility personnel ensure the proper handling, identification, segregation, transport, and treatment of infectious, pathological, and general wastes to prevent the potential dissemination of microorganisms. USAEHA TG 147 contains guidelines for use in training personnel in safe handling and disposal of infectious waste.

c. Requirements.

(1) *General waste.*

(a) Areas generating general waste will follow the same reasonable and prudent methods that are used for collecting refuse generated in nonmedical facilities.

(b) The waste will be collected at regular intervals by MTF or contractor personnel trained in proper collection and handling procedures.

(c) Healthcare facility waste handlers should receive initial training in the proper handling and disposal of all wastes. Handlers should receive periodic (at least annual) refresher training on program changes and new developments.

(2) *Infectious waste.*

(a) Units and activities that generate infectious waste will store the waste in the area of generation until collected. Containers with lids (as appropriate) and lined with impervious, tear-resistant, and distinctively colored (for example, red) plastic bags will be used in the area of generation.

(b) Container liners will be tightly sealed; for example, with twist ties, rubber bands, and/or tape, before leaving the area of generation.

(c) The waste will be collected at regular intervals by MTF or contractor personnel trained in proper collection and handling procedures.

(3) *Pathological waste.*

(a) Areas that generate pathological waste will handle the waste as outlined in (2)*(a)* through *(c)* above.

(b) When storage of pathological waste is necessary, the enclosed waste will be placed under refrigeration until it is transferred for treatment.

(4) *Transportation within the healthcare facility.*

(a) General waste.

1. General waste will be transported within the healthcare facility as described for infectious waste in *(b)* below, unless the facility has a gravity chute or pneumatic tube system. In this case the sealed bags of waste will be placed in a larger plastic bag, sealed, and transported to the system openings.

2. All general wastes will be taken to outside collection points for subsequent incineration or disposal at an approved sanitary landfill.

(b) Infectious waste.

1. Infectious waste will be transported in the original container or the sealed bags can be transferred to larger carts.

2. Infectious waste will be manually transported to the incinerator or autoclave for treatment.

3. Carts used to transport infectious waste will be of a type that can be easily cleaned and that will not disclose their contents to hospital personnel. If soiled, containers and carts will be cleaned after each use.

4. Routes used for transporting infectious waste within the MTF will be carefully selected to minimize patient and personnel exposure and congestion.

(c) Pathological waste. Pathological waste will be transported and handled the same as infectious waste in *(b)* above.

(5) *Transportation outside the healthcare facility.*

(a) All Federal, State and local regulations and requirements for transportation manifesting and/or tracking will be followed.

(b) The transportation of medical wastes in privately owned vehicles is prohibited.

(6) *Treatment and disposal.*

(a) General waste. General waste will be stored outside the healthcare facility in leakproof containers such as dumpsters and compactors.

1. Containers for storage, transportation, and disposal will be cleaned and sanitized as needed.

2. The containers (dumpsters) will be transported to the sanitary landfill and must be cleaned before return to the healthcare facility.

(b) Infectious waste.

1. Infectious waste will be incinerated or autoclaved (steam) as a method of treatment to render the waste noninfectious.

2. The ash, or noninfectious waste from treatment by steam sterilization, can be disposed of at the sanitary landfill.

3. All infectious waste incinerators must be permitted as required by State or local air pollution regulations.

4. Infectious waste transported to a contract or other off-post incinerator (or other treatment site) will be handled by a manifest procedure whereby a given identifiable quantity of waste is receipt-accepted at the disposal site. These receipts are to be returned and made part of the generators' record of waste production and disposal.

(c) Pathological waste.

1. Pathological waste will be incinerated or steam sterilized as a method of treatment.

2. After incineration the ash can be disposed of at the sanitary landfill.

3. If steam sterilized, the pathological waste will be subjected to destruction (grinder) and flushed into the sanitary sewer or incinerated.

4. All pathological waste incinerators must be permitted as required by State or local air pollution regulations.

5. Pathological waste transported to a contract or other off-post incinerator (or other treatment site) will be handled by a manifest procedure whereby a given identifiable quantity of waste is receipt-accepted at the disposal site. These receipts are to be returned and made part of the generators' record of waste production and disposal.

(d) Liquid waste. Liquid waste (for example, feces, urine, vomitus, and blood) will be disposed of in the sanitary sewer. Care should be taken to ensure that contamination of hospital personnel and the immediate environment does not occur during disposal. However, liquids from the microbiology laboratory will be steam sterilized before disposal in the sanitary sewer. Liquids from the surgical suite may require steam sterilization at the discretion of the infection control committee before disposal in the sanitary sewer or incinerator.

(e) Needles, syringes, and sharps.

1. Immediately following use, needles, syringes, and other sharps should be placed into rigid, impervious (for example, plastic) containers. These items should not be recapped, clipped, or otherwise intentionally broken or destroyed prior to being placed into these containers.

2. The rigid sharps containers will be clearly labelled to indicate they contain infectious waste consisting of sharps. These containers will be designed to prevent removal of the contents and will be safeguarded by some method (for example, locked in place or under supervision) to prevent misuse or access by unauthorized persons.

3. Sharps containers, when full, will be sealed and transported either separately or in larger infectious waste containers along routes used for other infectious waste. These items will be transported manually to the incinerator, autoclave, or other treatment system. Sharps transported individually to an off-post incinerator (or other treatment site) will be processed by a manifest procedure as described for infectious waste.

4. The treatment system used must render the sharps containers and their contents noninfectious. If, following treatment, the contents of the containers remain intact (for example, potentially reusable), safeguards must exist to prevent reuse of these items while they await final disposal.

d. Contingency plans. [illegible]ingency plans will be developed to ensure safe storage, transportation, and disposal in the event the primary method is temporarily disabled or unavailable. This may include written agreements with local civilian hospitals.

11-8. Environmental noise

a. Objective. The DA objective is to control noise from Army sources in a manner that protects community health and welfare without impairing mission or readiness. Specific environmental noise criteria for continuous noise sources are contained in TM 5-803-2/AFM 19-10/NAVFAC P-970. Army policy on land use planning where high noise areas adjacent to Army installations is contained in AR 200-1 and AR 210-20.

b. Functions. Installation PVNTMED personnel will—

(1) Monitor Army operations and activities to ensure compliance with Army and regulatory agency standards.

(2) Provide technical assistance concerning noise abatement, procedures, and controls.

11-9. Spill control

a. Objective. The objective is to prevent the discharge of oil, fuels, and hazardous substances to the environment, and to promptly contain and neutralize such spills.

b. Functions. Installation PVNTMED personnel will—

(1) Review the status of control measures to ensure compliance with health aspects of regulatory agency guidelines.

(2) Provide technical assistance concerning control, containment, and neutralization as appropriate.

(3) Assist installations in preparing spill prevention control and countermeasure plans and installation spill contingency plans.

11-10. Pesticide monitoring

a. Objective. The DA pesticide monitoring program objective is to promote the judicious use of pesticides and ensure the use and disposition of pesticides in a safe manner with minimal health or environmental effect.

b. Functions. USAEHA will—

(1) Investigate all alleged hazardous incidents resulting from the use or disposition of pesticides. As required, USAEHA will conduct scheduled repetitive environmental sampling and analysis for pesticides.

(2) Conduct pesticide monitoring activities that support the national pesticide monitoring program.

(3) Conduct and report special investigations of alleged incidents so that the reports are compatible with the National Environmental Pesticide Data System.

(4) Coordinate the statistical and chemical technologies routinely employed with QA programs of the National Pesticide Monitoring Program.

(5) Periodically evaluate Army pesticide monitoring data to determine common factors that will help implement improved procedures.

Chapter 12
Sanitation

12-1. General

a. Sanitation is one of the most cost-effective [illegible] the military for preventing disease and improving [illegible] well-being.

b. This chapter outlines the basic requirements [illegible] Sanitation Program. Certain subjects, however, [illegible] requirements, are covered elsewhere under [illegible] in this regulation or in TB MEDs, TMs, and [illegible] adopted as Army policy by this regulation.

12-2. Fixed installation drinking [illegible]

a. Importance. Few [illegible] have as far-reaching [illegible] lance of drinking water [illegible]

control of this vital commodity, co[illegible]ous and effective communication must exist between the facilities engineer and PVNTMED personnel.

b. Fixed installation supplies. Fixed installation supplies are water systems that are enclosed or are protected distribution systems that transfer water from production points to consumption. Sanitary control of fixed installation supplies will be under TB MED 576.

c. Water quality surveillance. Water quality surveillance will be under AR 420–46 and TB MED 576, which includes discussion about compliance with the Safe Drinking Water Act Amendments of 1986, Public Law 99–339 as amended. Installations and/or activities in regions where the Safe Drinking Water Act is applicable will also comply with all subsequent amendments to the act as defined by AR 420–46 and TB MED 576.

(1) In States and territories not having primacy and in States where primary enforcement has been granted by the EPA, Army installations classified as suppliers of water will comply with substantive and procedural requirements of the National Primary Drinking Water Regulation (NPDWR) (AR 420–46 and AR 200–1).

(2) In the OCONUS areas outside those defined in AR 420–46, Army installations classified as suppliers of water will comply with the standards in NPDWR or the host country, whichever are more stringent. Any requests for deviation from the CONUS drinking water standards will be submitted in writing to the theater surgeon with a copy furnished to HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258.

d. Chlorination. Chlorination of water will conform with AR 420–46 and TB MED 576.

e. Fluoridation. Fluoridation of water will be according to AR 420–46 and TB MED 576.

f. Cross connections. Cross connections between potable and nonpotable distribution systems are not permitted. TB MED 576 and TM 5–660/AFR 91–26/NAVFAC MO–210 discuss cross connections and provide proper references. The current National Standard Plumbing Code will be followed in the design, maintenance, and renovation of water distribution systems and in the selection of all plumbing fixtures.

g. Installation commander functions. This commander ensures that appropriate samples are collected from all potable water sources and are analyzed for chemical parameters by a certified laboratory in CONUS and validated by USAEHA's laboratory QA program in OCONUS laboratories. All test data are forwarded to appropriate regulatory authorities. Copies are provided to the IMA for medical review and/or evaluation and to the Commander, USAEHA, ATTN: HSHB–ME–W, Aberdeen Proving Ground, MD 21010–5422, for additional evaluation and for inclusion in the Army's drinking water surveillance program data base. USAEHA can provide technical and/or operational assistance for such requirements. The USAEHA operates a laboratory, certified by Federal and State regulatory authorities, to perform analyses of specially requested services. Details of these activities are in TB MED 576.

h. PVNTMED functions. The PVNTMED will—

(1) Provide medical evaluation of monitoring data for the potable water supply and distribution system as necessary to fulfill the requirements of NPDWR, National Secondary Drinking Water Regulations (as applicable), and TB MED 576. USAEHA can provide technical assistance for such activities, and maintains a laboratory certified by Federal and State regulatory authorities to support specially requested services. (Routine analyses obtained to comply with regulatory requirements will be the responsibility of the installation commander and engineers. The responsible IMA and USAEHA will receive copies of all potable water analyses, because engineers must coordinate with and obtain necessary assistance from the PVNTMED on all matters pertaining to health and esthetic aspects of regulatory compliance. This process is detailed in TB MED 576.)

(2) In cooperation with the engineers, maintain liaison with proper Federal, State, and local regulatory authorities regarding current drinking water regulations.

(3) Interpret [illegible]lts of water quality analyses.

(4) Approve concentrations and types of chemical additions to potable water supplies.

(5) Maintain records, under NPDWR and AR 25–400–2, that reflect the chemical, radiological, and microbiological quality of the installation potable water.

(6) Conduct programmed sanitary inspections of the entire potable water system on a yearly basis.

(7) Perform special sanitary surveys as conditions warrant.

(8) Develop information whereby installation personnel and family members can be notified of any degradation or contamination of the potable water system and recommend appropriate corrective action to the installation commander.

(9) Perform independent surveillance of Government-owned, contractor-operated facilities per TB MED 576.

(10) Conduct bacteriological, concurrent chlorine residual, and fluoride surveillance analysis (if applicable) of the potable water system for supplied and purchased sources under the requirements of NPDWR, AR 420–46, and TB MED 576.

(11) Provide information and guidance to the installation commander concerning the following:

(a) Current requirements for, availability of, and regulations concerning potable water.

(b) The need for and method of water conservation.

(c) Available methods to reduce pollution of water supply by installation activities.

12–3. Ice manufacture

a. In CONUS, Alaska, and Hawaii, sanitary inspections of ice manufacturing facilities are the responsibility of the U.S. Army Veterinary Service. When circumstances dictate, and water potability certification by the military is necessary, veterinary personnel will collect samples and submit them to the appropriate Army PVNTMED activity for testing. Results of the tests will be provided to veterinary personnel for use in completing their inspection report.

b. In OCONUS, PVNTMED personnel will conduct sanitary inspections of ice manufacturing, storage, and distribution facilities; and will, in coordination with appropriate veterinary personnel, recommend approval of commercially-operated plants. Approved commercial ice plants will be listed in the Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement or in the locally approved establishment list (AR 40–657/NAVSUPINST 4355.4/AFR 161–32/MCO P10110.31).

c. Sanitary requirements for ice manufacture are detailed in MIL STD 906. Additional requirements follow:

(1) Plumbing installation will be according to the requirements of the current National Standard Plumbing Code or local jurisdiction plumbing code, whichever is more strict.

(2) Surfaces of floors, walls, and ceilings of all rooms used for manufacture, processing, and storage of ice will be smooth, impervious, and nontoxic (under use conditions).

(3) All can fillers, coresucking devices, and drop tubes will be handled in a manner to prevent contamination. Freezing cans will be disinfected by steam or by being submerged for 2 minutes in a 100 parts per million (ppm) free available chlorine solution.

(4) Only dedicated vehicles will be used for transporting ice. An exception is granted for transportation of packaged and/or containerized ice in enclosed clean multi-use vehicles.

12–4. Water supply afloat

All Army floating vessels will use the procedures contained in AR 56–9 to provide and maintain a safe and sanitary water supply. Bacteriological, physical, and chemical requirements for potable water will meet the criteria in AR 56–9 and TB MED 576. Assistance in monitoring these requirements will be provided by the MEDDAC and/or MEDCEN PVNTMED service supporting the vessel's home port or port of call.

12-5. Field water supply program

a. Significance. Field water supplies refer to water systems of a nonpermanent nature used in training exercises and actual operations. The water may be transported from point of production to point of use in temporary conduits or unprotected portable containers. The provision of and sanitary control of potable water in the field is of significant importance to the well-being and morale of all concerned.

b. Sanitary control. Sanitary control of field water supplies will be according to AR 700-136, FM 10-52, FM 21-10/AFM 161-10, and TB MED 577.

12-6. Swimming pools

a. Guidance. Sanitary control and operation of Army swimming pools and swimming areas will be under AR 420-46, TM 5-662, and TB MED 575.

b. PVNTMED functions. Installation PVNTMED personnel will—

(1) Assist the installation commander in the sanitary control of swimming facilities.

(2) Maintain current information that includes engineering plans, type, location, size, maximum bather load, and operating hours for all swimming facilities.

(3) Provide training for lifeguards and applicable facilities engineer personnel in the sanitary operation and monitoring of swimming facilities. PVNTMED personnel also will ensure that all lifeguards are certified by the American Red Cross (Advanced Life-saving Certificate or Water Safety Instructor Certificate). (A training and instruction packet for swimming pool operators is available from the Academy of Health Sciences, U.S. Army, PVNTMED Division, ATTN: HSHA-ISM, Fort Sam Houston, TX 78234-6100, AUTOVON 471-3659.)

(4) Perform annual preseason and/or preopening inspections of swimming facilities in conjunction with the installation engineer, morale support officer, and safety officer to identify and correct any deficiencies before operations begin. Swimming facilities will not open until deficiencies noted during the preseason and/or preopening inspection have been corrected.

(5) Inspect, on a periodic basis, the swimming facilities and operational logs to ensure that proper operation and monitoring is being performed under TB MED 575.

(6) Perform bacteriological sampling at the frequency specified in TB MED 575.

(7) Ensure that chlorine residual analyses are accomplished by an approved method.

(8) Maintain records of sanitary surveys, inspections, results of bacteriological sampling, and other pertinent information.

(9) Maintain liaison with local and State recreational water authorities and with the installation engineer, morale support officer, and safety officer.

(10) Conduct a yearly sanitary survey of all natural swimming areas under installation control.

(11) Conduct medical and/or technical reviews of all swimming facility construction and renovation plans. USAEHA, or other applicable supporting laboratory or agency, can provide assistance in this review.

12-7. Troop housing sanitation

a. Aspects involved. Important health and sanitation considerations concerning bachelor officer quarters and bachelor enlisted quarters housing include provision of adequate floor space, temperature control, lighting, ventilation, humidity control, and adequacy of latrine and handwashing facilities. Location and construction of new installations and buildings or renovation of existing facilities offer a unique opportunity to provide a healthy and sanitary environment. Responsibilities, procedures, and considerations for peacetime investigations and selection of proposed Army installation sites are contained in AR 210-30. Policies, responsibilities, and procedures for development and approval of permanent Army installation master plans are contained in AR 210-20.

b. Basic allowances.

(1) Basic facilities and allowances for Army installation peacetime missions are described in AR 210-11.

(2) To minimize disease agent transmissions, the normal sleeping space allowance for persons in basic training is prescribed at not less than 72 square feet of floor space per person, exclusive of stairs, halls, latrines, utility rooms, recreation areas, storage rooms, or other administrative areas. All available billeting, including temporary facilities and tents when necessary, will be used to ensure this minimum space allowance. Commanders will schedule utilization of common use facilities such as dining facilities, classrooms, theaters, and latrine facilities to avoid overcrowding.

c. Plumbing fixture requirements. Plumbing fixture requirements for various types of buildings are in TM 5-810-5/AFM 88-8 and DOD 4270.1-M. Plumbing design and installation will conform to the current National Standard Plumbing Code.

d. Ventilation. Heating and ventilation influence troop health and comfort. Barracks are ventilated to dilute unpleasant odors, tobacco smoke, airborne microorganisms and dusts, and to reduce temperature and humidity during warm weather. No amount of extra ventilation can compensate for overcrowding. In nonmechanically-ventilated quarters, windows should be partially opened (except during extremely cold weather) when persons are sleeping. Local agreements should be reached between the installation engineer and medical authority to achieve desired ventilation with minimum loss of heating equipment efficiency. Policies for installation and design of air-conditioning, evaporative cooling, dehumidification, and mechanical ventilation equipment and systems are contained in DOD 4270.1-M and TM 5-810-1.

12-8. Barber and beauty shops

Sanitary requirements for barber and beauty shops are detailed in appendix D.

12-9. Drycleaning

General guidance related to customer-operated and commercial drycleaning operations can be obtained from the Commander, USAEHA, Aberdeen Proving Ground, MD 21010-5422.

12-10. Mobile home parks

Sanitary requirements for mobile home parks are described in appendix E.

12-11. Child development services facilities

Guidance relative to the sanitary requirements for CDS facilities is in AR 608-10. Environmental sanitation inspections will be conducted monthly for center-based CDS facilities. For quarters-based family child care homes, see AR 608-10.

12-12. Recreational areas

a. Recreational areas must be constructed and operated to provide a pleasant, safe, and sanitary recreational area while at the same time providing adequate protection of the environment.

b. A comprehensive presite selection of recreational areas is required. General requirements for site selection and development are outlined in Public Health Service Publication No. 1195 and TM 5-803-12. Particular attention must be placed on providing an adequate potable water supply, waste disposal, drainage, prevention of soil erosion, and protection of watersheds.

c. Natural bathing areas and swimming pools will be designed and operated under AR 420-46, TB MED 575, and TM 5-662.

d. Potable water will be supplied to all recreational areas except to those designated as wilderness areas.

e. Adequate solid waste disposal will be provided. Containers will be emptied and cleaned on a schedule approved by the IMA.

f. Liquid waste disposal will be through a sanitary sewer.

g. Nonwaterborne waste disposal systems will not be used unless approved by the IMA. When approved, nonwaterborne waste disposal facilities will be vermin-proofed, equipped with self-closing doors, adequately screened, and protected from inclement weather. Handwashing facilities should also be provided. The IMA will participate in establishing the cleaning and emptying

schedules (as appropriate) with installation facilities engineer personnel.

12-13. Laundry operations

a. Fixed laundry operations will be designed and operated under AR 210-130.

b. Field laundry operations will be designed and operated under FM 10-280.

12-14. Sports facility sanitation

a. Environmental considerations concerning Army sports facilities include prevention of infections due to contamination of equipment, towels, clothing, and other common use items, and provision of adequate facilities and housekeeping.

b. Common use items such as athletic shoes must be disinfected with an approved fungicide spray and must be air dried thoroughly before being reissued. Towels and issued athletic clothing must be laundered before being reissued.

c. Whirlpool baths, steam cabinets, and other therapy-type equipment must be disinfected between users using either a disinfectant solution containing a minimum of 50 ppm free available chlorine or an iodine disinfectant providing the equivalent of 25 ppm available iodine. Equipment must be rinsed with potable water after disinfection.

d. Showers and locker room floors and benches will be cleaned and disinfected at least daily. Toilet facilities will be cleaned at least daily. Disinfectant products will be applied according to manufacturers' instructions.

e. Athletic fields will be provided with adequate potable water supplies and convenient latrine facilities.

f. Temporary and mobile food services will be operated according to paragraph 12-17 of this regulation and TB MED 530.

12-15. Confinement facilities

a. Sanitary inspection requirements for Army detention and confinement facilities are outlined in AR 190-38 and AR 190-47. The IMA will provide required support to carry out the requirements outlined in these ARs.

b. Particular attention must be given to providing adequate floor space, temperature control, ventilation, and housekeeping in detention cells, isolation rooms, prisoner dormitories, dining facilities, and other common use areas.

12-16. Disinfectant selection

a. Complete evaluation of disinfectant products for microbiological effectiveness is beyond the capability of most PVNTMED services and should not be undertaken. Disinfectants, sanitizers, and other chemical or physical agents designed to reduce or inhibit the growth of microorganisms may be used in food service facilities, hospitals, and other areas as appropriate. Only products that have been approved by the EPA, the Food and Drug Administration (FDA), the USDA, or any combination of the above three agencies as required by Federal law will be used.

b. Selection of a disinfectant, sanitizer, or other such product is dependent on the following criteria:

(1) The product is approved for the intended use.

(2) The product is compatible with the local water supply considering hardness, hydrogen ion concentration (pH), and other physical and chemical parameters.

(3) The product is safe, nonirritating, and nontoxic when used according to directions.

(4) The product must perform the intended and stated task satisfactorily.

12-17. Food service sanitation

a. The attainment of quality food service is paramount at all levels of command. Food is easily contaminated and will readily support the growth of many disease-producing microorganisms. The trend to larger facilities and centralized preparation increases the potential for large-scale illness and resultant loss of mission effectiveness.

b. The essential elements to be implemented for the food service sanitation program are in TB MED 530. Additional guidance on expedient methods for field food service operations is presented in FM 8-250 and FM 21-10/AFM 161-10.

c. Veterinary personnel will conduct necessary sanitary inspections described in AR 40-657/NAVSUPINST 4355.4/AFR 161-32/MCO P10110.31 and other inspections related to veterinary aspects of procurement, processing, storage, shipment, receipt, and distribution of food. PVNTMED personnel will assess the adequacy of food service sanitation practices and storage of food products at the food preparation facility.

12-18. Commissary and troop issue subsistence activity sanitation

Commissary and troop issue subsistence activity sanitation procedures and policies are presented in the Commissary Operations Manuals, MIL STD 668, MIL STD 903, and in TB MED 530. Veterinary personnel will conduct the necessary sanitation inspections relating to the procurement, processing, storage, shipment, receipt, and distribution of food.

Chapter 13
Environmental Laboratory Services

13-1. General

a. Quality analytical chemistry laboratory support is needed to assess the nature and extent of potential hazards in the environment of personnel served by the PVNTMED service of each MEDDAC or MEDCEN. This need is reflected in local, State, and Federal requirements that apply to environmental chemistry laboratory support.

b. This chapter gives guidance to PVNTMED services for effective laboratory support to fulfill their operational requirements to promote health and prevent disease.

13-2. Coordination

a. The resources of the local PVNTMED service are the first to be considered by a MEDDAC or MEDCEN in dealing with an environmental problem.

b. If local PVNTMED service resources are not adequate to meet requirements, the USAEHA or the OCONUS support laboratory will provide support per paragraph 1-8.

c. Coordination with USAEHA or the OCONUS supporting laboratory will be made before sample collection unless the samples are to be analyzed locally.

13-3. PVNTMED service

a. Laboratory services provided by PVNTMED services in each MEDDAC and/or MEDCEN will vary according to the size and location of the installation, mission of the units supported, and personnel assigned. The local service will establish, as a minimum, a laboratory capability to monitor fluoride, chlorine residual, pH, and bacteriological parameters to ensure adequate surveillance and sanitary control of installation water supplies and recreational waters (TB MEDs 575 and 576).

b. Surveillance of chemical, pesticide, and radiological levels in drinking waters will be performed per TB MED 576.

13-4. Certification and/or accreditation

a. Federal facilities within the 50 States, the District of Columbia, and those OCONUS areas specified in AR 420-46 must comply with all Federal, State, and local requirements regarding the Safe Drinking Water Act Amendment of 1986 (Public Law 99-339), as implemented by EPA in 40 CFR 141 and 142. For the purposes of certification, Federal laboratories that conduct routine monitoring of public drinking water supplies are to be considered local laboratories and will be certifiable under a State or regional EPA program. Details on the EPA's water supply laboratory certification program and the technical criteria considered essential to

generate valid data are found in EPA 570[illegible]2-002. Commanders of installations located elsewhere will assure compliance with TB MED 576 as interpreted by the local medical authority.

b. Per AR 420-46, laboratory facilities performing operational (such as microbiological and chemical) analyses will comply with substantive and procedural requirements, if any, issued by State or regional EPA authorities.

13-5. Quality assurance

a. Data reliability. The role of the environmental laboratory is to provide qualitative and quantitative data to be used in decision-making. Because of the importance of laboratory analyses and the resulting actions they produce, a program to ensure the reliability of the data is essential.

b. Quality control of laboratory analyses.

(1) An established, routine, quality control program applied to every analytical test is important to the reliability of the final results. Quality control guidelines for laboratories performing water and wastewater analyses are in EPA handbook 600/4/79-019, produced by the Analytical Quality Control Laboratory, National Environmental Research Center, Cincinnati, Ohio, and in EPA manual 600/8/78-017, produced by the Environmental Monitoring and Support Laboratory, Cincinnati, Ohio (EMSL-CI). Known value quality control samples for microbiology and chemistry will be furnished by EMSL-CI directly to EPA regions and through the regions to local laboratories. Requests for samples will be made through the appropriate EPA regional office.

(2) USAEHA provides proficiency testing surveys for quality control of water and wastewater analyses. PVNTMED services and OCONUS supporting laboratories wishing to participate in this program should address their requirements to the Commander, USAEHA, ATTN: HSHB-ML-A, Aberdeen Proving Ground, MD 21010-5422.

(3) AR 750-25 establishes a single DA test, measurement, and diagnostic equipment (TMDE) calibration and repair support program to ensure that all TMDE receive calibration on a recurring basis as required. TB 750-25 describes procedures and responsibilities for obtaining, providing, and receiving calibration service.

Chapter 14
Field Preventive Medicine

14-1. General

a. Preventable personnel losses from heat, cold, or disease become important because history has repeatedly shown that nonbattle losses have played a significant role in the outcome of military operations. This chapter establishes field PVNTMED responsibilities.

b. Guidance herein applies to field training exercises, disaster relief operations, as well as contingency force deployment. Included are—

(1) Individual preventive medicine measures (PMM).

(2) Company-level PMM.

(3) Division-level PMM.

(4) PVNTMED team support.

14-2. Individual support

The soldier will employ all protective measures possible. Each soldier, as a minimum, will protect against—

a. Heat incapacitation in hot climates by drinking a sufficient volume of water at frequent intervals.

b. Cold injury in cold climates by wearing proper cold-weather clothing and frequently changing socks to keep feet dry, by careful handling of gasoline-type liquids, and by avoiding contact between skin and cold metal.

c. Mosquito, fly, tick, and other arthropod-borne diseases by using insect repellents, netting, and insecticide aerosols; by taking approved chemoprophylaxis; and by wearing the uniform properly.

d. Enteric disease by usi[illegible]dine tablets whenever water quality is uncertain, by avoiding unapproved civilian food vendors, and by properly disposing of bodily wastes.

e. Skin disease by washing the body as often as practicable.

f. Other hazards by using appropriate measures as described in FM 21-10/AFM 161-10.

14-3. Company-level PMM

Companies, troops, batteries, and units of equivalent size are responsible for those PMM that affect units as a whole or are beyond the resources of an individual soldier. FM 21-10/AFM 161-10 will be used as a guide with maximum use of company-level PMM therein. Commanders will ensure that their units conduct PMM.

a. Functions. As a minimum, units deploying to the field will—

(1) Before deployment, appoint a field sanitation team with responsibilities defined in *b* below.

(2) Before deployment, incorporate PMM into SOPs.

(3) Have the capability to use pesticides and vegetation controls.

(4) Bury and/or burn wastes to prevent the breeding of insects and rodents. Consult the environmental coordinator or PVNTMED personnel to ensure compliance with local environmental regulations and laws during field exercises.

(5) Protect food during storage and preparation to prevent contamination (TB MED 530).

(6) Monitor unit water sources to assure adequate supplies and disinfection.

(7) Arrange for maintenance of immunizations and prophylaxis.

(8) Use other appropriate measures under FM 21-10/AFM 161-10.

(9) Assure command supervision of individual PMM.

(10) Request assistance for problems exceeding unit capabilities.

(11) Deploy to the field with field sanitation equipment listed in table 14-1.

b. Field sanitation teams.

(1) When organic or attached medical personnel are available, they will be appointed and will serve as the field sanitation team for the unit. They will serve as advisers to the commander, train unit personnel in individual PMM, and supervise or conduct basic PVNTMED services. Company and battery-sized units deploying without organic or attached medical personnel will appoint a field sanitation team. These field sanitation teams provide the small-unit commander with—

(a) Organic expertise to monitor the status of unit PMM.

(b) Limited capability to control insect and rodent vectors in the unit area.

(2) The field sanitation team will conduct training within the unit on individual PMM against disease and injury as these relate to an assessment of the medical threat in the prospective or defined areas of operation.

(a) Composition. Company aidmen (military occupational specialty 91A) organic or attached to deployed units will be trained and will function as the unit field sanitation team. If medical personnel are not available, two soldiers will be selected and trained, one of whom must be a noncommissioned officer. Neither the organic or attached aidman nor selected soldiers will have less than 6 months remaining with the unit on the date of appointment.

(b) Training. Members of field sanitation teams (organic or attached medical or nonmedical personnel) will receive training from supporting medical resources before deployment or field exercises to assure that small units have the PVNTMED resources to operate in adverse disease and/or climatic environments. Instruction will address use, maintenance, and care of the field sanitation team equipment as well as communicable disease control, food service sanitation, water supply, waste disposal, and arthropod and rodent control.

(c) Coordination. In nonoperational areas, pesticide spraying is generally accomplished by facilities engineer personnel. Such services will reduce the field sanitation team workload. Teams should

coordinate with engineer personnel. [illegible] sanitation team spraying will be conducted as necessary to s[illegible]lement engineer coverage and to maintain team familiarization with control techniques. Pesticide recommendations to control specific vectors or pests are found in AFPMB TIM 24. Large populations of insect or rodent pests in the unit area will warrant a request for support by a PVNTMED (LA) team. (See para 14–5*d*(2) below.)

(d) Equipment. The recommended stocking of field sanitation team materials is listed in table 14–1. All deployable units will maintain, transport, and use listed items in support of both training exercises and contingency mission.

14–4. Division-level PMM

The next echelon of PVNTMED support is at the division. This level of support is provided by the PVNTMED section in the medical battalion of the infantry (light), airborne, and air assault divisions. In armored and mechanized divisions, this support is provided by PVNTMED elements of the main support battalion. The services provided include identification of PVNTMED problems and training of unit field sanitation teams and back-up company-level PMM which are beyond the capability of unit personnel due to their complexity, scope, or specialized nature.

14–5. PVNTMED team support

Although the main thrust of PVNTMED occurs within small units in the form of individual and company-level PMM, some problems will require additional expertise and equipment for resolution. Such skills and materiel are concentrated in PVNTMED teams that can be used to support units operating in areas of highest disease risk.

Table 14–1
Field sanitation team materials

National stock number: 6810–00–255–0471
Description: Calcium Hypochloride, 6 oz
Unit/Issue: BT
Allowance: 3
Authority: CTA 50–970

National stock number: 6545–00–914–3480
Description: Chest, No. 3, 30x18x10, Alum
Unit/Issue: EA
Allowance: 1
Authority: CTA 8–100

National stock number: 6850–00–270–6225
Description: Chlorination Kit, Water purification
Unit/Issue: KT
Allowance: 10
Authority: CTA 50–970

National stock number: 6840–00–810–6396
Description: Disinfectant, food service, 12's
Unit/Issue: BX
Allowance: 2
Authority: CTA 50–970

National stock number: 3740–00–132–5936
Description: Duster, Manually operated, tubular pump
Unit/Issue: EA
Allowance: 1
Authority: CTA 50–970

National stock number: 8415–01–012–9294
Description: Glove, Chemical and Oil Protective
Unit/Issue: PR
Allowance: 1
Authority: CTA 50–900

National stock number: 4240–00–190–6432
Description: Goggles, Industrial, non-vented
Unit/Issue: PR
Allowance: 1
Authority: CTA 50–970

National stock number: 6840–01–284–3982
Description: Insect Repellent, personnel application, 2 oz
Unit/Issue: BT
Allowance: 384
Authority: CTA 50–970

National stock number: 6840–01–210–3392
Description: Insecticides, Chlorpyrifos, 42%, 40 ml, 12's
Unit/Issue: BX
Allowance: 1
Authority: CTA 50–970

National stock number: 6840–01–067–6674
Description: Insecticides, d-Phenothrin, 2%, 12 oz
Unit/Issue: CN
Allowance: 144
Authority: CTA 50–970

National stock number: 6840–00–242–4217
Description: Insecticides, lindane, 1%, 2 oz
Unit/Issue: BT
Allowance: 192
Authority: CTA 50–970

National stock number: 3740–00–252–3384
Description: Mousetrap, spring, 12's
Unit/Issue: DZ
Allowance: 2
Authority: CTA 50–970

National stock number: 3740–00–260–1398
Description: Rattrap, spring, 12's
Unit/Issue: DZ
Allowance: 2
Authority: CTA 50–970

National stock number: 3740–01–234–3448
Description: Repair Parts Kit, sprayer
Unit/Issue: EA
Allowance: 1
Authority: TIM No. 24

National stock number: 6840–00–753–4973
Description: Rodenticides, anticoagulant bait, 5 lb
Unit/Issue: CN
Allowance: 2
Authority: CTA 50–970

National stock number: 3740–00–641–4719
Description: Sprayer, insecticides, hand, 2 gal
Unit/Issue: EA
Allowance: 1
Authority: CTA 50–909

National stock number: 3740–00–252–3383
Description: Swatter, fly, 12's
Unit/Issue: PG
Allowance: 1
Authority: CTA 50–970

National stock number: 6850–00–985–7166
Description: Water purification tablet, iodine, 50's
Unit/Issue: BT
Allowance: 400
Authority: CTA 8–100

Note. Unit/Issue entries are computer entry codes; for example, BT is the code for bottle and PG is package.

a. PVNTMED teams will—

(1) Prepare for deployment in support of contingency or disaster relief operations within 24 hours after notification. Predeployment measures will include—

(a) Readiness of authorized equipment and vehicles.

(b) Stocking of prescribed expendables.

(c) Procurement of CTA 50–900 equipment for augmentation personnel.

(d) Rehearsal of loading plans.

(e) Coordination with the Armed Forces Medical Intelligence Center and Armed Forces Pest Management Information Analysis Center, as applicable, concerning epidemiologic and vector information on regions of likely deployment.

(2) Participate in field training exercises, as [illegible]ted. Staff coordinating procedures will be emphasized to a[illegible]e that the supported unit will make full use of technical resources if strategic deployment becomes necessary.

(3) Not normally be used as field sanitation teams for hospitals, headquarters, or other units to which attached.

b. HSC will—

(1) Maintain a roster of professional fillers to facilitate augmentation of Forces Command PVNTMED teams in the event of disaster relief operations or contingency force deployment.

(2) Schedule annual liaison visits for key filler personnel to facilitate rapport and to assure both individual and team deployment readiness.

c. USAPACEHEA will maintain an active capability to—

(1) React to requests from Commander in Chief, U.S. Army, Pacific (CINCUSARPAC) for assistance in disaster relief operations. Perform necessary liaison with key CINCUSARPAC personnel to assure effective disaster relief response.

(2) Perform basic field PVNTMED operations in areas of mobilizing troop concentrations (within the Pacific Theater), until PVNTMED teams organic to the mobilizing force can arrive on site and become mission effective. Participate in field exercises to ensure this capability is well practiced.

d. The full range of PVNTMED services will be provided.

(1) *Command and control, AM teams (if deployed).* The AM teams will provide command and control for PVNTMED teams in the area of operations. The operations of individual teams will be decentralized, whenever possible, with attachment to corps elements at greatest risk.

(2) *Entomology service, LA teams.* The LA teams will provide entomology support for all elements in the area of operations with support priority to combat units. During the strategic deployment phase of contingency operations, emphasis will be on preemptive suppression of high risk vectors near assembly areas and along routes of movement. As tactical elements deploy for action, LA teams will be prepared to extend services in response to requests from division and corps surgeons.

(3) *Environmental sanitation service, LB teams.* The division preventive medicine section will monitor the status of company-level PMM. They will provide consultative support as necessary, to include the onsite training of field sanitation teams. Support priority will go to combat units. During the strategic deployment phase of contingency operations, emphasis will be on assembly areas near points of debarkation. As tactical elements deploy for action, LB teams will be prepared to shift emphasis forward to brigade and/or battalion trains in response to requests from division surgeons. LB teams will coordinate with civil affairs and military police to assure that refugee enclaves and prisoner compounds do not become foci of epidemic disease.

(4) *Environmental engineering service, LC teams.* The LC teams will provide the same services cited for LB teams. During the strategic deployment phase of contingency operations, emphasis will be on points of debarkation (airfields and ports). As corps elements deploy from initial staging areas, support priority will shift to corps support groups and area support groups as they become established along lines of communication. LC teams will coordinate with LB teams to assure optimum use of technical resources in the corps as a whole. LC teams will coordinate with the engineers and civil affairs to assure restoration of water, wastewater treatment, and waste disposal facilities in towns and villages within the area of operations.

(5) *Epidemiology service, LD teams.* The LD teams will provide epidemiologic services in the area of operations. During the strategic deployment phase of contingency operations, emphasis will be on population centers near assembly areas and along proposed routes of movement to assure early detection of disease. As corps elements deploy for action, support priority will shift to combat units in response to requests from division surgeons.

(6) *Entomology laboratory, LE teams.* The LE teams will provide entomological laboratory support for LA teams in the area of operations with initial e[illegible]sis on pesticide resistance assessments to facilitate early p[illegible]rement of alternative pesticides, if warranted.

(7) *Veterinary, JA/JB teams.* The JA/JB teams will provide veterinary medical support in areas of operations with initial emphasis on wholesomeness and acceptability of food supplies or sources.

(a) Initial emphasis will concentrate on protection of the disrupted populace from potentially epidemic diseases.

(b) Early coordination with host nation public health authorities will be accomplished to assure consonance with local environmental constraints and to permit use of local resources.

(c) Overall emphasis will be on restoration of local capacity for self-support.

Appendix A
References

Section I
Required Publications

AMH (JCAHO)
Accreditation Manual for Hospitals, Joint Commission on Accreditation of Healthcare Organizations. (Cited in para 8–4*b*.) (May be obtained from the JCAHO, 875 N. Michigan Avenue, Chicago, IL 60611.)

ANSI Z87.1
Practice for Occupational and Educational Eye and Face Protection. (Cited in paras 5–4*l*(3) and 5–15*c*.) (May be obtained from the American National Standards Institute Incorporated, 1430 Broadway, New York, NY 10018.)

AR 10–5
Department of the Army. (Cited in paras 3–4*d* and 3–10.)

AR 11–34
The Army Respiratory Protection Program. (Cited in para 5–26*c*(2)(*c*)).

AR 25–400–2
The Modern Army Recordkeeping System (MARKS). (Cited in paras 1–7, 4–5*h*(17), 5–16*b*(2)(*c*), 5–21*a* and *c*, 9–7*a*(4) and (6), 9–9*a*(2)(*c*) and *b*(8), and 12–2*h*(5).)

AR 40–12/SECNAVINST 6210.2/AFR 161–4
Medical and Agricultural Foreign and Domestic Quarantine Regulations for Vessels, Aircraft, and Other Transports of the Armed Forces. (Cited in para 10–16.)

AR 40–14/DLAR 1000.28
Control and Recording Procedures for Exposure to Ionizing Radiation and Radioactive Materials. (Cited in paras 9–3*a*; 9–4*a* and *b*; 9–5*a*; 9–6*a*; and 9–9*a*(2)(*a*) and (*b*) and *b*(1) and (6).)

AR 40–35
Preventive Dentistry. (Cited in para 1–4*h*(1).)

AR 40–46
Control of Health Hazards from Lasers and Other High Intensity Optical Sources. (Cited in paras 9–4*b*(1); 9–5*b*; and 9–9*a*(2)(*a*), (*b*), and (*f*).)

AR 40–63/AFR 167–3
Ophthalmic Services. (Cited in para 5–15*b*.)

AR 40–66
Medical Record and Quality Assurance Administration. (Cited in paras 4–11*b*; 5–16*b*(2)(*c*); and 5–21*a*, *d*(1), and *f*.)

AR 40–68
Quality Assurance Administration. (Cited in para 4–9*e*.)

AR 40–400
Patient Administration. (Cited in paras 3–1; 3–2; 3–12*a*(4); 4–5*b*(4), *c*(4), and *d*(3); 6–3*c*(7); 9–9*c*(8); 9–12*b*(3)(*a*); B–2*c*; and B–3*b*.)

AR 40–407
Nursing Records and Reports. (Cited in paras 3–15 and 6–5*a*.)

AR 40–501
Standards of Medical Fitness. (Cited in paras 5–9*b*, 5–20*b*(3) and (5), 5–26*c*(2)(*b*), and B–4.)

AR 40–562/NAVMEDCOMINST 6230.3/AFR 161–13/CG COMDTINST M6230.4D
Immunizations and Chemoprophylaxis. (Cited in paras 4–3*a*(3); 4–4; 4–5*a*(3)(*c*), *b*(3), *d*(2)(*b*), and *f*(2)(*a*); and 5–12.)

AR 40–574/AFR 91–22
Aerial Dispersal of Pesticides. (Cited in para 10–12.)

AR 40–657/NAVSUPINST 4355.4/AFR 161–32/MCO P10110.31
Veterinary/Medical Food Inspection and Laboratory Service. (Cited in paras 12–3*b* and 12–17*c*.)

AR 50–5
Nuclear Surety. (Cited in para 5–19.)

AR 50–6
Chemical Surety. (Cited in para 5–19.)

AR 55–38/NAVSUPINST 4610.33/AFR 75–18/MCO 4610.19/DLAR 4500.15
Reporting of Transportation Discrepancies in Shipments. (Cited in para 9–9*b*(13).)

AR 56–9
Watercraft. (Cited in para 12–4.)

AR 95–3
General Provisions, Training, Standardization, and Resource Management. (Cited in para 5–16*b*(3).)

AR 200–1
Environmental Protection and Enhancement. (Cited in paras 1–6*a*, 9–3*b*, 10–4*d*, 10–4*i*(1), 11–2*b*(3), 11–8*a*, and 12–2*c*(1).)

AR 210–10
Administration. (Cited in para 4–5*e*(2)(*e*).)

AR 210–11
Installations—Billeting Operations. (Cited in para 12–7*b*(1).)

AR 210–20
Master Planning for Army Installations. (Cited in paras 11–8*a* and 12–7*a*.)

AR 210–30
Selection of Sites for Army Installations. (Cited in para 12–7*a*.)

AR 385–10
Army Safety Program. (Cited in paras 1–4*a* and *c*; 5–4*a*(5)(*b*), *b*, and *f*; 5–11; 5–15*c*; 5–16*b*(1)(*a*), (4), (5)(*b*) and (*c*), (8)(*e*), and (9)(*f*); 5–26*a*; 8–2*a*; 9–7*a*(2); 9–9*a*(1); and 10–14.)

AR 385–11
Ionizing Radiation Protection (Licensing, Control, Transportation, Disposal, and Radiation Safety). (Cited in paras 9–4*a* and *b*(1); 9–9*a*(2)(*f*), and *b*(2), (3), (12), (13), and (14); and 9–10*b* and *c*.)

AR 385–30
Safety Color Code Markings and Signs. (Cited in paras 5–16*b*(6)(*a*) and 9–9*a*(2)(*d*).)

AR 385–32
Protective Clothing and Equipment. (Cited in para 9–7*a*(2).)

AR 385-40
Accident Reporting and Records. (Cited in paras 5-4*b*, 5-10*b*, 5-22*c*, 8-2*b*, 9-6*a*(3), 9-9*b*(6) and *c*(8), and 9-12*b*(3)*(b)*.)

AR 420-10
Management of Installation Directorate of Engineering and Housing and Personnel. (Cited in para 10-3*c*.)

AR 420-22
Preventive Maintenance and Self-Help Programs. (Cited in para 10-4*g*.)

AR 420-46
Water and Sewage. (Cited in paras 3-8*c*(1), 12-2, 12-6*a*, 12-12*c*, and 13-4.)

AR 420-70
Building and Structures. (Cited in para 5-16*b*(6)*(a)*.)

AR 420-74
Natural Resources: Land, Forest, and Wildlife Management. (Cited in para 10-3*c*.)

AR 420-76
Pest Management. (Cited in paras 10-3*c*, 10-4*d* and *e*, 10-6*a* and 10-12.)

AR 600-8
Military Personnel Operations. (Cited in para 5-4*c*.)

AR 600-20
Army Command Policy. (Cited in para 4-3*a*(3).)

AR 600-110
Identification, Surveillance, and Administration of Personnel Infected with Human Immunodeficiency Virus. (Cited in para 4-5*e*(2) and *g*.)

AR 600-240/BUPERINST 1752.1/AFR 211-18/MCO 1752.1
Marriage in Oversea Commands. (Cited in para 4-5*e*(2)*(a)*.)

AR 608-10
Child Development Services. (Cited in paras 6-4*b*(2) and 12-11.)

AR 608-18
The Army Family Advocacy Program. (Cited in para 6-4*b*(3).)

AR 670-1
Wear and Appearance of Army Uniforms and Insignia. (Cited in para 5-16*b*(9)*(i)*.)

AR 700-64/DLAM 4145.8/NAVSUPINST 4000.34/AFR 67-8/MCO P4400.105
Radioactive Commodities in the DOD Supply Systems. (Cited in paras 9-9*b*(3) and 9-10*c*.)

AR 700-68/DLAR 4145.25/NAVSUPINST 4440.128/MCO 10330.2/AFR 67-12
Storage and Handling of Compressed Gases and Gas Cylinders. (Cited in para 9-9*b*(13).)

AR 700-93
Processing and Shipping DOD Sponsored Retrograde Materiel Destined for Shipment to the United States, Its Territories, Trusts, and Possessions. (Cited in para 10-17.)

AR 700-136
Land Based Water Resources Management in Contingency Operations. (Cited in para 12-5*b*.)

AR 710-2
Supply Policy Below the Wholesale Level. (Cited in para 10-14.)

CTA 8-100
Army Medical Department Expendable/Durable Items. (Cited in table 14-1.)

CTA 50-900
Clothing and Individual Equipment. (Cited in table 14-1 and para 14-5*a*(1)*(c)*.)

CTA 50-909
Field and Garrison Furnishings and Equipment. (Cited in table 14-1.)

CTA 50-970
Expendable/Durable Items (Except: Medical, Class V, Repair Parts and Heraldic Items). (Cited in para 10-4*f* and table 14-1.)

DA Cir 11-88-7
Internal Review Checklists. (Cited in the Internal Control Systems paragraph of the title page.)

DA Pam 40-8
Special Occupational Safety and Health Standard for the Evaluation and Control of Occupational Exposure to Nerve Agent GB. (Cited in para 5-19.)

DA Pam 40-17
Veterinary Activities (RCS MED-25(R6)). (Cited in para 10-11.)

DA Pam 738-750
The Army Maintenance Management System (TAMMS). (Cited in paras 9-8*a*(3) and (4).)

DOD 4270.1-M
Construction Criteria Manual. (Cited in paras 12-7*c* and *d*.) (This and the DOD publication listed below may be obtained from the Commanding Officer, ATTN: Code 301, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

DOD 6055.5-M
Occupational Health Surveillance Manual. (Cited in para 5-9*a*(3).)

FM 8-33/NAVMED P-5038
Control of Communicable Diseases in Man (14th Edition). (Cited in para 4-2*a*.)

FM 8-250
Preventive Medicine Specialist. (Cited in para 12-17*b*.)

FM 10-52
Field Water Supply. (Cited in para 12-5*b*.)

FM 21-10/AFM 161-10
Field Hygiene and Sanitation. (Cited in paras 12-5*b*, 12-17*b*, 14-2*f*, and 14-3.)

FPM Chap 339
Qualifications Requirements (Medical). (Cited in paras 5-4*c* and 5-9*c* and *d*.)

MIL STD 906
Sanitary Standards for Ice Plants. (Cited in para 12-3*c*.)

NBSH 107
Radiological Safety in the Design and Operation of Particle Accelerators. (Cited in para 9-9*b*(10).) (This and the National Bureau of Standards handbooks listed below may be obtained from the Superintendent of Documents, Government Printing Office, Washington, DC 20402.)

NBSH 111
Radiation Safety for X-Ray Defraction and Fluorescence Analysis Equipment. (Cited in para 9–9*b*(10).)

NBSH 114
General Safety Standards for Installations Using Non-Medical X-Ray and Sealed Gamma-Ray Sources, Energies up to 10 Mev. (Cited in para 9–9*b*(10).)

NFPA Std 70
National Electrical Code. (Cited in para 8–4*b*(1).) (This and the National Fire Prevention Association publication listed below may be obtained from the National Fire Prevention Association, Batterymarch Park, Quincy, MA 02269.)

NFPA Std 99
Standard for Health Care Facilities. (Cited in para 8–4*b*(1).)

NIOSH Publication No. 75–137
Development and Evaluation of Methods for the Elimination of Waste Anesthetic Gases and Vapors in Hospitals. (Cited in para 8–4*b*(5).) (This and the National Institute for Occupational Safety and Health publications listed below may be obtained from the Superintendent of Documents, Government Printing Office, Washington, DC 20402.)

NIOSH Publication No. 77–140
Occupational Exposure to Waste Anesthetic Gases and Vapors. (Cited in para 8–4*b*(5).)

NIOSH Publication No. 77–171
Control of Occupational Exposure to N_2O in the Dental Operator. (Cited in para 8–4*b*(5).)

NIOSH Publication No. 77–200
Special Occupational Hazard Review with Control Recommendations—Use of Ethylene Oxide as a Sterilant in Medical Facilities. (Cited in para 8–4*b*(5).)

NIOSH Publication No. 81–123
Occupational Health Guidelines for Chemical Hazards. (Cited in para 5–9*a*(2).)

OSHA 2014
Recordkeeping and Reporting Guidelines for Federal Agencies. (Cited in para 5–22*c*.) (May be obtained from the Office of Federal Agency Programs, 200 Constitution Avenue, NW, Washington, DC 20210.)

OTSG Policy Letter 86–01.0
Surveillance of Laser and Microwave/Radiofrequency Workers. (Cited in para 5–15*a*(4).) (May be obtained from the Commander, USAEHA, ATTN: HSHB–MS, Aberdeen Proving Ground, MD 21010–5422.)

Public Health Service Publication No. 1195
Environmental Health Practice in Recreational Areas. (Cited in para 12–12*b*.) (May be obtained from the Interagency Program Retail Food Protection Branch, Food and Drug Administration, 200 C Street, SW, Washington, DC 20204.)

SB 3–40
Pesticides. (Cited in para 10–4*f*.)

TB 750–25
Maintenance of Supplies and Equipment: Army Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Repair Support Program. (Cited in paras 9–8*a*(1) and 13–5*b*(3).)

TB MED 2
Sterilizing Medical, Surgical, Dental and Veterinary Materiel. (Cited in para 8–4*b*(4).)

TB MED 6
Occupational Health and Safety in Dental Clinics. (Cited in para 8–4*b*(5).)

TB MED 81
Cold Injury. (Cited in para B–3.)

TB MED 266
Disinfection and Sterilization of Dental Instruments and Materials. (Cited in para 8–4*b*(5).)

TB MED 501
Occupational and Environmental Health: Hearing Conservation. (Cited in paras 5–9*a*(4); 5–16*a*, *b*(2) and (7); 5–26*c*(2)*(b)*; and 8–4*b*(5).)

TB MED 502
Occupational and Environmental Health: Respiratory Protection Program. (Cited in paras 5–9*a*(5); 5–26*c*(2)*(c)*; 8–4*b*(5); 9–7*a*(1), (3), and (4); and 10–14.)

TB MED 503
The Army Industrial Hygiene Program. (Cited in paras 5–4*d*(4), 5–4*j*(4), 5–16*b*(8), 5–24, and 8–4*b*(5).)

TB MED 506
Occupational and Environmental Health: Occupational Vision. (Cited in paras 5–9*a*(6) and 5–15*a* and *a*(7).)

TB MED 507
Occupational and Environmental Health: Prevention, Treatment, and Control of Heat Injury. (Cited in para B–2.)

TB MED 509
Spirometry in Occupational Health Surveillance. (Cited in paras 5–9*a*(7) and 5–26*c*(2)*(c)*.)

TB MED 510
Interim Guidelines for the Evaluation and Control of Occupational Exposure to Waste Anesthetic Gases. (Cited in paras 5–9*a*(8) and 8–4*b*(5).)

TB MED 513
Guidelines for the Evaluation and Control of Asbestos Exposure. (Cited in paras 5–4*a*(6), 5–4*e*(5), 5–9*a*(9), and 5–28*a* and *b*.)

TB MED 521
Management and Control of Diagnostic X-Ray, Therapeutic X-Ray, and Gamma-Beam Equipment. (Cited in paras 9–8*a*(7) and 9–9*a*(2)*(d)* and *b*(7), (8), and (9).)

TB MED 522
Occupational and Environmental Health: Control of Health Hazards from Protective Material Used in Self-Luminous Devices. (Cited in para 9–10*c*.)

TB MED 523
Control of Hazards to Health from Microwave and Radio Frequency Radiation and Ultrasound. (Cited in paras 5–9*a*(10), 9–5*b*, and 9–9*c*(5).)

TB MED 524
Occupational and Environmental Health: Control of Hazards to Health from Laser Radiation. (Cited in paras 5–9*a*(11), 9–5*b*, 9–7*b*, and 9–9*c*(5).)

TB MED 525
Control of Hazards to Health from Ionization Radiation Used by the Army Medical Department. (Cited in paras 9–4*a* and *b*; 9–8*a*(6); 9–9*a*(2)*(d)* and *(f)*, *b*(2) and (3); and 9–10*a*.)

TB MED 530
Occupational and Environmental Health: Food Service Sanitation. (Cited in paras 10–9*a*, 12–14*f*, 12–17*b*, 12–18, and 14–3*a*(5).)

TB MED 575
Swimming Pools and Bathing Facilities. (Cited in paras 12–6*a* and *b*(5) and (6), 12–12*c*, and 13–3*a*.)

TB MED 576
Occupational and Environmental Health: Sanitary Control and Surveillance of Water Supplies at Fixed Installations. (Cited in paras 12–2, 12–4, 13–3, and 13–4*a*.)

TB MED 577
Occupational and Environmental Health: Sanitary Control and Surveillance of Field Water Supplies. (Cited in para 12–5*b*.)

TIM No. 14
Protective Equipment for Pest Control Personnel. (Cited in para 10–14.) (This and the technical information memorandum listed below may be obtained from the Armed Forces Pest Management Board, Forest Glen Section, WRAMC, Washington, DC 20301–5001.)

TIM No. 21
Pesticide Disposal Guide for Pest Control Shops. (Cited in para 10–13.)

TM 5–632/NAVFAC MO–310/AFM 9–16
Military Entomology Operational Handbook. (Cited in paras 10–11 and 10–16.)

TM 5–660/AFR 91–26/NAVFAC MO–210
Maintenance and Operation of Water Supply, Treatment, and Distribution Systems. (Cited in para 12–2*f*.)

TM 5–662
Swimming Pool Operations and Maintenance. (Cited in paras 12–6*a* and 12–12*c*.)

TM 5–803–2/AFM 19–10/NAVFAC P–970
Environmental Protection: Planning in the Noise Environment. (Cited in para 11–8*a*.)

TM 5–803–12
Planning of Outdoor Recreation Areas. (Cited in para 12–12*b*.)

TM 5–810–1
Mechanical Design: Heating, Ventilating, and Air Conditioning. (Cited in paras 9–7*a*(5) and 12–7*d*.)

TM 5–810–5/AFM 88–8
Plumbing. (Cited in paras 12–7*c* and E–8*d*.)

TM 55–4470–400–12–1
Transportability Guidance for Nuclear Reactor Irradiated Fuel Elements. (Cited in para 9–9*b*(13).)

UCMJ
Manual for Courts-Martial, United States 1984. (Cited in para 5–25.)

Unnumbered Publication
Memorandum, U.S. Army Health Professional Support Agency, SGPS–PSP–O, 1 Sep 88, subject: Policy for Use of Video Display Terminals (VDTs). (Cited in para 5–15*a*(5).) (May be obtained from the Commander, USAEHA, ATTN: HSHB–S, Aberdeen Proving Ground, MD 21010–5422.)

Unnumbered Publication
MIM's Supplemental Users Instructions. (Cited in para 5–7*c*.) (May be obtained from the Commander, USAEHA, ATTN: HSHB–MO–F, Aberdeen Proving Ground, MD 21010–5422.)

USAEHA TG No. 102
Guide for the Conduct of Installation Pest Surveillance Programs. (Cited in paras 10–7*b* and *c*.) (This and the USAEHA technical guides listed below may be obtained from the Commander, USAEHA, ATTN: HSHB–CI–O, Aberdeen Proving Ground, MD 21010–5422.)

USAEHA TG No. 147
Infectious Hazardous Waste Handling and Disposal. (Cited in para 11–7*b*(2).)

USAEHA TG No. 153
Guidelines for Controlling Potential Health Hazards from Radiofrequency Radiation. (Cited in paras 9–4*b*(1), 9–5*b*, and 9–9*a*(2)*(a)* and *(b)* and *b*(12).)

USAEHA TG No. 167
Hearing Evaluation Automated Registry System (HEARS) Audiometer Operation Manual. (Cited in para 5–16*b*(7)*(e)*.)

10 CFR 20.103
Standards for Protection Against Radiation: Exposure of individuals to concentrations of radioactive materials in air in restricted areas. (Cited in para 9–7*a*(1).)

29 CFR 1910
Occupational Safety and Health Administration (OSHA) Standards. (Cited in paras 5–9*a*(1), 5–15*c*, 5–16*b*(9)*(l)*, 5–21*b*, and 8–4*b*.)

38 FR 21685
Insecticides in Food Handling Establishments, Definitions and Policy Statements. (Cited in para 10–9*a*.)

Section II
Related Publications

A related publication is merely a source of additional information. The user does not have to read it to understand this regulation.

ANSI A225.1–1984 Manufactured Home Installation.
(This and the ANSI publication listed below may be obtained from the American National Standards Institute Incorporated, 1430 Broadway, New York, NY 10018.)

ANSI Z16.4–1977
Uniform Recordkeeping for Occupational Injuries and Illnesses.

AR 10–64/OPNAVINST 6700.2/AFR 160–29/MCO 5420.18A
Joint Field Operating Agencies of the Office of The Surgeon General of the Army.

AR 11–2
Internal Control Systems.

AR 40–2
Army Medical Treatment Facilities: General Administration.

AR 40–3
Medical, Dental, and Veterinary Care.

AR 40–10
Health Hazard Assessment Program in Support of the Army Materiel Acquisition Decision Process.

AR 40–25/NAVMEDCOMINST 10110.1/AFR 160–95
Nutritional Allowances: Standards and Entitlements.

AR 70-1
Systems Acquisition Policy and Procedures.

AR 190-24/MCO 1620.2/BUPERINST 1620.4/AFR 125-11/COMDINST 1620.1
Armed Forces Disciplinary Control Boards and Off-Installation Military Enforcement.

AR 190-38
Detention Cell Standards.

AR 190-47
The U.S. Army Correctional System.

AR 210-130
Laundry and Dry Cleaning Operations.

AR 600-85
Alcohol and Drug Abuse Prevention and Control Program.

AR 611-101
Personnel Selection and Classification, Commissioned Officer Classification System.

AR 635-100
Officer Personnel.

AR 690-700
Personnel Relations and Services (General).

AR 750-25
Army Test, Measurement, and Diagnostic Equipment (TMDE) Calibration and Repair Support Program.

C-3000/6300-IL
FSC Groups 30 through 63 (Items of Medical Materiel Only).

C-6700/9500-IL
Identification List: FSC Groups 67 thru 95 (Items of Medical Materiel Only).

DA Pam 600-17
A Commander's, Supervisor's, and Physician's Guide to Alcohol and Alcoholism.

DA Poster 40-5
Lyme Disease Warning.

DOD Directive 4150.7
DOD Pest Management Program. (This and the DOD publications listed below may be obtained from the Commanding Officer, ATTN: Code 301, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

DOD Directive 6050.10
The Armed Forces Pest Management Board.

DOD Instruction 6050.5
Hazardous Material Information System.

DOD Instruction 6055.1
DOD Occupational Safety and Health Program.

DOD Instruction 6055.5
Industrial Hygiene and Occupational Health.

DOD Instruction 6055.12
DOD Hearing Conservation Program.

EPA 570/9-82-
Manual for the Certification of Laboratories Analyzing Drinking Water. (This and the EPA publications listed below may be obtained from the National Technical Information Service, Port Royal Road, Springfield, VA 22161.)

EPA 600/4/79-019
Handbook for Analytical Quality Control in Water and Wastewater Laboratories.

EPA 600/8/78-017
Microbiological Methods for Monitoring the Environment, Water and Wastes.

FM 10-280
Mobile Field Laundry, Clothing Exchange, and Bath Operations.

FPM Chap 250
Personnel Management in Agencies.

FPM Chap 290
Personnel Information (General).

FPM Chap 293
Personnel Records and Files.

FPM Chap 294
Availability of Official Information.

FPM Chap 630
Absence and Leave.

FPM Chap 792
Federal Employees Health and Counseling Programs.

FPM Supp 792-2
Alcohol and Drug Abuse Programs.

FPM Chap 810
Injury Compensation.

FPM Chap 930
Programs for Specific Positions and Examinations.

GTA 8-5-45
Heat Injury Prevention and First Aid.

MIL STD 668
Sanitary Standards for Food Plants.

MIL STD 903
Sanitary Standards for Commissaries.

MIL STD 904
Guidelines for Detection, Evaluation, and Prevention of Pest Infestation of Subsistence.

MIL STD 1486
In-Transit Fumigation of Freight Cars.

NFPA Std 56C
Safety Standards for Laboratories in Health Related Institutions. (This and the NFPA publications listed below may be obtained from the National Fire Prevention Association, Batterymarch Park, Quincy, MA 02269.)

NFPA Std 101
Code for Safety to Life from Fire in Buildings and Structures.

NFPA Std 491M
Manual of Hazardous Chemical Reactions.

NFPA Std 501-A-1984
Mobile Home Installations, Sites, and Communities.

TB MED 288
Medical Problems of Man at High Terrestial Elevations.

TIM 24
Contingency Pest Management Pocket Guide. (May be obtained from the Armed Forces Pest Management Board, Forest Glen Section, WRAMC, Washington, DC 20301-5001.)

TM 5-803-11/NAVFAC P-383/AFM 88-30
Children's Play Areas.

TM 55-315
Transportability Guidance for Safe Transport of Radioactive Materials.

USAEHA TG No. 001
Appendixes E, G, and H for Medical Surveillance Guide, Guide for Job Related Examinations. (This and the USAEHA technical guides listed below may be obtained from the Commander, USAEHA, ATTN: HSHB-CI-O, Aberdeen Proving Ground, MD 21010-5422.)

USAEHA TG No. 028
Handling and Decontamination Guide for Elemental Mercury.

USAEHA TG No. 106
Guide for Pest Control Operations in US Army Medical Treatment Facilities.

USAEHA TG No. 152
Safety and Fire Prevention Guide for Hospital Safety Managers.

USAEHA TG No. 177
A Commander's Guide to Infectious Waste Management at Army Health Care Facilities.

USAEHA TG No. 178
A Commander's Guide to Hazardous Waste Minimization at Army Health Care Facilities.

40 CFR 165
Regulations for the acceptance of certain pesticides and recommended procedures for the disposal and storage of pesticides and pesticides containers.

Section III
Prescribed Forms

DA Form 3075
Occupational Health Daily Log. (Prescribed in para 3-12.)

DA Form 3076
Army Occupational Health Report (RCS MED-20). (Prescribed in paras 3-10 through 3-12.)

DA Form 3897-R
Tuberculosis Registry. (Prescribed in para 4-5*h*(14).)

DA Form 5402-R
Barber/Beauty Shop Inspection. (Prescribed in para D-8.)

DA Form 5931
Occupational Health Patient Form. (Prescribed in para 5-7.)

DA Form 5932
USAREUR Occupational Health Form. (Prescribed in para 5-7.)

DA Form 5933
Occupational Health Patient Form—Supplemental. (Prescribed in para 5-7.)

DA Form 5934
Korea Occupational Health Encounter Form. (Prescribed in para 5-7.)

DD Form 2215
Reference Audiogram. (Prescribed in para 5-21*d*(4).)

DD Form 2216
Hearing Conservation Data. (Prescribed in para 5-21*d*(5).)

DD Form 2493-1
Asbestos Exposure, Part I—Initial Medical Questionnaire. (Prescribed in para 5-28*a*.)

DD Form 2493-2
Asbestos Exposure, Part II—Periodic Medical Questionnaire. (Prescribed in para 5-28*b*.)

Section IV
Referenced Forms

DA Form 2417
U.S. Army Calibration System Rejected Instrument.

DA Form 3761
Army Health Nursing Activities.

DA Label 80
U.S. Army Calibrated Instrument.

DD Form 689
Individual Sick Slip.

DD Form 1141
Record of Occupational Exposure to Ionizing Radiation.

DD Form 1532
Pest Management Report.

DD Form 2214
Noise Survey.

DOL Form CA 16
Authorization for Examination and/or Treatment.

DOL Form CA 17
Duty Status Report.

HEW Form CDC 73-2936A
Venereal Disease Epidemiologic Report.

HEW Form PHS 731
International Certificates of Vaccination.

OF 345
Physical Fitness Inquiry for Motor Vehicle Operators. (Replaces SF 47, which may be used.)

SF 78
United States Civil Service Commission Certificate of Medical Examination.

SF 93
Report of Medical History.

SF 177
Statement of Physical Ability for Light Duty Work.

SF 513
Medical Record—Consultation Sheet.

SF 557
Miscellaneous.

SF 600
Health Record—Chronological Record of Medical Care.

SF 601
Health Record—Immunization Record.

Unnumbered OSHA Form
Log of Federal Occupational Injuries and Illnesses. (May be obtained from the Office of Federal Agency Programs, 200 Constitution Avenue, NW, Washington, DC 20210.)

Appendix B
Climatic Injury Control

B–1. General
Climatic injuries of military importance include those disabilities to troops caused by climatic or altitudinal factors.

B–2. Heat injuries
TB MED 507 contains a comprehensive discussion of heat casualty prevention. The wet bulb globe temperature (WBGT) index and the wet globe thermometer (WGT) are the best means of evaluating the degree of heat stress imposed by all environments. Commanders and medical personnel should utilize at least one of these indexes during all operations in heat, and especially for acclimatizing the troops. A portable WBGT Kit, NSN 6665–00–159–2218, and a WGT kit, Botsball type, NSN 6665–01–103–8547, are available through supply channels.

a. The following actions, if emphasized by the commander, will reduce the risk of heat injury:

(1) *Acclimatization to heat.* Acclimatization is acquired by working in hot environments for gradually increasing periods of time on a daily basis over a period of 1 to 2 weeks.

(2) *Water intake.* Adequate water intake is the single most important factor in avoidance of heat injury. An unlimited water drinking policy, particularly during times of increased physical stress, will be enforced.

(3) *Salt.* Undissolved salt tablets should never be used. There is sufficient salt in the American diet to preclude the use of supplemental salt solutions under normal circumstances. If salt supplements are required, salt solutions prepared as described in TB MED 507 should be given.

b. Each major unit should publish an annual directive on the prevention of heat injuries. Unit commanders and cadre should be offered an annual orientation class on heat injury prevention by medical personnel. A pocket-sized guide to heat injury (graphic training aid (GTA) 8–5–45) is available for individual use.

c. All heat injuries requiring hospital admission, or any significant clusters of heat injuries that occur in one unit that do not require hospitalization (such as heat exhaustion) will be reported using RCS MED–16 under AR 40–400.

B–3. Cold injuries
Careful prior planning and adequate training of commanders and individual soldiers are essential to minimize cold injury casualties. TB MED 81 describes the types of cold injuries and proper preventive measures. All personnel should know how to use the wind chill chart in table 1, TB MED 81.

a. Unit commanders and cadre should be offered an annual orientation to cold injury prevention by medical personnel.

b. Cold injuries requiring hospital admission or any significant number of nonhospitalized cold injuries that occur in a unit will be reported using RCS MED–16 under AR 40–400.

B–4. High altitude
Acute mountain sickness may produce significant numbers of casualties for troops who are suddenly placed in a high altitude environment. Prevention is best achieved by thorough medical screening (AR 40–501) and acclimatization to altitude. A detailed discussion on high altitude is found in TB MED 288.

B–5. Requests for assistance
Commanders may request technical assistance on problems relating to heat, cold, and high altitude from the U.S. Army Research Institute of Environmental Medicine, Natick, MA 01760. Requests should be addressed through command channels to HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258.

Appendix C
Recommended Procedures for Cleanup of Pesticide Spills

C–1. General
These guidelines provide simple instructions on cleaning up small spills of pesticides (1 qt or less).

C–2. Personnel protection
a. If the pesticide gets into the eye or on the skin, immediately flush with water under low pressure. Further, the skin should be washed with soap and water. Remove contaminated clothing and blot up any pesticides on the clothing.

b. Once the pesticide is washed off and clothes changed, the persons should go to the nearest MTF. Exposed persons should know what pesticide they were exposed to and its strength or concentration.

C–3. Cleanup and disposal
Spilled pesticides should be cleaned up immediately. The steps below should be followed.

a. Block off or isolate the immediate area where the spill occurred.

b. Pour cat litter, sawdust, or other absorbent material on the spill to soak it up. Ventilate the room by opening doors and windows and turning on exhaust fans.

c. Scoop up the contaminated absorbent and pour it into a plastic bag.

d. Mop up the spill area with warm water containing 1 cup of bleach (sodium hypochlorite) per gallon of water.

e. After mopping, place the mophead into the bag with the contaminated absorbent. Close and seal the bag and place it in a refuse container for pickup by an approved sanitation disposal service.

f. Cleanup personnel should wear coveralls and waterproof footwear (rubbers or galoshes). They should not eat, drink, or smoke during the cleanup and should wash thoroughly afterwards with soap and clean water.

g. Broken or damaged pesticide containers should be discarded in the same manner as the absorbent material.

Appendix D
Barber and Beauty Shop Sanitation

D–1. General
Skin disease agents may be transmitted either through direct contact or by fomites such as towels, combs, clippers, or razors. Skin diseases of concern include scalp ringworm (Tinea capitis), ringworm of the bearded area of face and neck (Tinea barbae), and impetigo and staphylococcal infections.

D–2. Employee hygiene

a. Barbers and beauticians will not work when ill with communicable disease or other conditions which might be transferred to a patron.

b. The IMA will determine and state in a written policy if preemployment medical evaluations to ensure freedom from communicable disease, examinations before returning to work after illness, and special examinations are required. Examination authority, including incident hospitalization, is contained in AR 40–3.

c. Barbers and beauticians must keep their person and clothing clean when attending patrons. Smocks and/or uniforms will be changed daily.

d. Barbers and beauticians are prohibited from smoking, eating, and drinking in the work areas (such as in back bar areas, styling stations, and shampoo and drying areas). Smoking, eating, and drinking will be confined to designated employee break areas only. Customers are prohibited from smoking in barber and beauty shops.

D–3. Sanitary facilities

a. Barber and beauty shops will not be located in food service or sleeping areas.

b. Barber and beauty shops will be provided an adequate supply of hot and cold running water, proper plumbing fixtures, and adequate waste disposal. At fixed installations, a minimum of one lavatory will be provided for each two chairs. The lavatory will be located conveniently to both chairs served.

c. Shop interiors will be adequately lighted and ventilated.

d. Shops will be maintained in a sanitary condition at all times. Cut hair will be removed frequently from the floors.

e. Closed sanitary receptacles will be provided for waste materials and soiled linens.

D–4. Multiple service and disposable article sanitation (instruments, towels, and disposables)

a. Barber chair headrests will be covered with a clean sheet of paper or clean towel for each patron.

b. Freshly laundered towels or individual disposable sanitary neck strips will be used for each patron.

c. Reusable clean haircloths will be changed at least daily.

d. Use of common (natural bristle) brushes, neck dusters, shaving brushes, sponges, and powder puffs are prohibited. Excepted are synthetic hair brushes that are specifically designed to allow adequate cleaning and sanitizing between patrons. Use of automatic dispensers, brushless shaving cream, and clean towels in place of brushes or dusters is recommended.

D–5. Sanitary practices

a. Without the written consent of a medical officer, patrons will not be served in barber or beauty shops when their face, neck, or scalp is inflamed, contains pus, or has erupted boils or pimples. Lice infested personnel will not be served and will be referred immediately for medical treatment.

b. Therapeutic practices such as treating blackheads, infected hairs, sores, or lesions are prohibited. Pulling of hairs from ears, nostrils, eyebrows, and mustaches is also prohibited.

c. Material used to stop blood flow will be in powder or liquid form, and should be applied with a freshly laundered towel or sterile absorbent cotton. Such material must be approved by a medical authority. The use of lump alum or styptic pencils is prohibited.

d. Caution should be exercised in the purchase and use of cosmetics, tonics, lotions, hair dyes, and bleaches. Some preparations have been implicated in skin and eye irritation and hair loss. All barber and beauty supplies must be approved by the USDA, FDA, or EPA for intended use.

D–6. Sanitization of instruments

a. Barbers and beauticians will clean all barbering instruments immediately after use on each patron. Scissors, combs, and tools will be thoroughly washed with soap and hot water to remove all film, oil, and debris, and then dried with a clean towel or clean disposable tissue.

b. Razors will be routinely disinfected between patrons to eliminate the possibility of transmission of infectious diseases such as hepatitis B. New disposable razors may be used on each patron if disinfection of reusable razors cannot be assured.

c. Removal of hair and debris from the exterior clipper surfaces may be accomplished with a stiff bristle brush used only for this purpose.

d. If, in the course of a barbering process, it is suspected that a patron has a communicable disease or infection, the barbering instruments will be washed and disinfected immediately after use.

e. Instruments not intended to penetrate the skin, but which may become contaminated with blood (for example, razors), will be thoroughly cleaned and sanitized after use.

f. Disinfection will employ any liquid chemical disinfectant specifically formulated for barbering tools use and carrying a label registered by the USDA or EPA, or one approved by PVNTMED personnel. Germicides that are mycobactericidal are preferred because mycobacteria are one of the most resistant groups of microorganisms. Disinfectants will be used according to label instructions. Other disinfection procedures, such as ultraviolet, will be used only with medical authority approval. Disinfection solutions will be prepared and changed frequently enough to ensure bactericidal effectiveness when used or at least once daily.

g. Containers for instrument disinfection will be provided with covers and be of sufficient size to accommodate all instruments.

h. At the close of each day's operation, all barbering tools used will be washed and disinfected.

i. All barbering instruments disinfected in a chemical solution will be rinsed in running water to remove chemicals before patron use.

D–7. Posting of regulation

A copy of this appendix will be maintained (preferably in a folder on a magazine rack) for customer inspection in each barber and beauty shop.

D–8. Inspection form

a. DA Form 5402–R (Barber/Beauty Shop Inspection) will be locally reproduced on 8½- by 11-inch paper. DA Form 5402–R is located at the back of this regulation.

b. Requirements on this form are directly related to requirements in this appendix. Use of this form is strongly recommended for all PVNTMED services.

D–9. Field barber's kit

All military personnel using the field barber's kit (national stock number 3590–00–058–1837) at organizational and unit levels will sanitize all barbering instruments before and after each use per paragraph D–6.

Appendix E
Mobile Home Parks Sanitation

E–1. General

Mobile home parks include locations intended for permanent or semipermanent places of residence. They do not include locations of temporary residence intended for recreational vehicles, travel trailers, and similar vehicles.

E–2. Location

Mobile home parks will be located in level, well drained areas and should not be located adjacent to swamps, marshes, breeding places for insects and rodents, or heavy industrial zones. The mobile home park should have good natural drainage. A [illegible] drainage system must be provided. [illegible] danger any water supply. All [illegible] the park will be provided [illegible]

E-3. Individual parking areas

Each area will be at least 45 by 70 feet and surfaced to provide a level, well-drained space under and adjacent to the mobile home. In mobile home parks that allow parking of double wide or extended length mobile homes, minimum individual parking areas for these trailers will be at least 25 feet wider and 20 feet longer than the trailer.

E-4. Mobile home

The mobile home will be of substantial construction and designed and constructed according to standards of commercial-type trailers. At least 35 square feet of floor space per occupant will be provided. Lean-tos, sheds, or additional rooms will not be attached to the mobile homes. Open porches, awnings, and original equipment expandable rooms are authorized, provided a minimum clear area of 10 feet between the mobile home and the individual parking area line is maintained. If locally authorized, centralized or individual storage sheds may be erected, provided they are equipped with suitable foundations and floorings and are not used for human habitation.

E-5. Water supply

Potable water will be provided at each mobile home space by means of suitable sanitary connections. Plumbing and sewage will be designed and installed under the current National Standard Plumbing Code.

E-6. Liquid waste and wash water disposal

A vertical drain pipe equipped with a suitable trap and connected to a sanitary sewer will be provided at each mobile home space. The connection between the drainage system of the mobile home and the vertical drain will be made to exclude insects and rodents, prevent leakage and escaping odors, and otherwise prevent health hazards.

E-7. Human waste disposal

The mobile home water closet connection will only be made by facility engineer personnel and then only when—

a. Mobile home plumbing fixtures and the system are approved by the facilities engineer and the medical authority.

b. The mobile home park sewer system is designed, installed, and operated under Army standards. Liquid wastes will drain into an approved sewer system and/or treatment and disposal facility. Requests for exception will be submitted to HQDA (SGPS-PSP), 5109 Leesburg Pike, Falls Church, VA 22041-3258.

E-8. Service buildings

Each mobile home park will have at least one service building to provide necessary sanitation and laundry facilities.

a. Heating facilities will be capable of maintaining a temperature of 65 degrees Fahrenheit in cold weather.

b. Adequate lighting will be provided inside and outside buildings.

c. Service buildings will be conveniently located within 100 yards of the most remote mobile home space.

d. Every mobile home park will provide adequate toilet and laundry facilities as indicated in TM 5-810-5/AFM 88-8. These fixtures are necessary to provide adequate facilities when mobile homes are repaired, connected, disconnected, and/or used for other emergencies, even though the mobile home park may accommodate only independent coaches.

E-9. Area sanitation

Roads, car parks, sidewalks, and other areas will be provided with surfacing to control dust and mire. Adequate drainage will be provided to prevent accumulations of surface water.

E-10. Illumination and fire protection

Adequate area illumination and fire protection will include a suitable electrical outlet at each mobile home space. Area illumination should be arranged to avoid mobile home occupant annoyance.

E-11. Protection of utility connections

Mobile home utility terminals will be adequately secured. Terminals will be located to assure protection from tampering, breakage, or contamination.

E-12. Design criteria

Design criteria for development and evaluation of mobile home parks are provided in ANSI A225.1-1984 and NFPA Standard 501-A-1984. These publications, in addition to the specific requirements of this regulation, should be used in developing local mobile home park sanitation programs as required.

*Glossary

Section I
Abbreviations

AFAP
Army family advocacy program

AFPMB
Armed Forces Pest Management Board

AHS
Academy of Health Sciences, U.S. Army

AMEDD
Army Medical Department

AMH
Accreditation Manual for Hospitals (JCAHO)

ANSI
American National Standards Institute

AOC
area of concentration (formerly SSI: specialty skill identifier)

ARD
acute respiratory disease

BCG
Bacille Calmette-Guerin

CDS
child development services

CFR
Code of Federal Regulations

CHEMTREC
Chemical Transportation Emergency Center

CHN
community health nurse

CHR
command health report

CINCUSARPAC
Commander in Chief, U.S. Army, Pacific

CONUS
continental United States

CTA
Common Table of Allowances

DA
Department of the Army

DENTAC
dental activity

DHS
director, health services

DLA
Defense Logistics Agency

DOD
Department of Defense

DOL
Department of Labor

DPCCM
department of primary care and community medicine

EMSL–CI
Environmental Monitoring and Support Laboratory, Cincinnati, Ohio

EPA
Environmental Protection Agency

EPICON
epidemiology consultant (assistance) (service)

FACMT
family advocacy case management team

FC
field circular

FDA
Food and Drug Administration

FM
field manual

fpm
feet per minute

FPM
Federal Personnel Manual

GTA
graphic training aid

HHA
health hazard assessment

HHIM
Health Hazard Information Module

HIV
human immunodeficiency virus

HQDA
Headquarters, Department of the Army

HSC
Health Services Command (U.S. Army)

IMA
installation medical authority

INH
isoniazid

IPM
integrated pest management

JCAHO
Joint Commission on Accreditation of Healthcare Organizations

kg
kilogram(s)

m
meter

MACOM
major Army command

MADP
materiel acquisition decision process

MEDCEN
U.S. Army medical center

MEDDAC
U.S. Army medical department activity

MIL STD
military standard

mg
milligram(s)

MIM
Medical Information Module

min
minute

mm
millimeter(s)

m/min
meter(s) per minute

MTF
medical treatment facility

NBSH
National Bureau of Standards handbook

NFPA
National Fire Prevention Association

NIOSH
National Institute for Occupational Safety and Health

NPDWR
National Primary Drinking Water Regulation

NRC
Nuclear Regulatory Commission

OCONUS
outside continental United States

OH
occupational health

OHE
occupational health education

*Section III of this glossary contains copyright material. For notice, see cover.

OHMIS
Occupational Health Management [illegible]mation System

OPM
Office of Personnel Management

OSH
occupational safety and health

OSHA
Occupational Safety and Health Administration

OTSG
Office of the Surgeon General

oz
ounce

PCS
permanent change of station

pH
hydrogen ion concentration

PMM
preventive medicine measures

POC
point of contact

PPE
personal protective equipment

ppm
parts per million

PVNTMED
preventive medicine

QA
quality assurance

qt
quart

RCS
Requirement Control Symbol

rem
roentgen equivalent man

RPO
radiation protection officer

SOH
safety and occupational health

SOP
standing operating procedure

STD
sexually-transmitted disease

TDA
table(s) of distribution and allowances

TG
technical guide

TIM
technical information memorandum

TM
technical manual

TMDE
test, measurement, and diagnostic equipment

TOE
table(s) of organization and equipment

TSG
The Surgeon General

TST
tuberculin skin test

UCMJ
Uniform Code of Military Justice

USAEHA
U.S. Army Environmental Hygiene Agency

USAPACEHEA
U.S. Army Pacific, Environmental Health Engineering Agency

USAREUR
U.S. Army, Europe

USDA
U.S. Department of Agriculture

USPHS
U.S. Public Health Service

VDT
video display terminal

WBGT
wet bulb globe temperature

WGT
wet globe thermometer

Section II
Terms

Disposal
The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

General waste
All healthcare facility waste not classified as infectious, pathological, or hazardous. Examples may include refuse generated in general patient units, emergency rooms, dental areas, surgical suites, administrative areas, and supply areas.

Hazardous waste
Solid waste, or combination of solid waste (except those excluded in 40 CFR 261.4(b)), that because of its quantity, concentration, or physical, chemical, or infectious characteristics may—

a. Cause, or significantly contribute to an increase in mortality or an increase in serious, irreversible or incapacitating, reversible illness.

b. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Healthcare facility
A structure or location where patient care is provided by AMEDD personnel.

Incineration
A method of thermal treatment of general infectious or pathological waste.

Industrial hygiene
The OH science consisting of the recognition, evaluation, and control of workplace health hazards.

Infectious waste
Infectious waste is any waste with pathogens of sufficient virulence and quality capable of causing an infectious disease in an exposed susceptible host. These wastes are generally from patients in strict or respiratory isolation, or with wound and skin precautions; wastes from the microbiology laboratory; surgical waste at the discretion of the infection control committee. State/local definitions may be more restrictive and would then prevail.

Installation medical authority
The unit surgeon, command chief surgeon, MEDDAC and/or MEDCEN commanders, and the DHS, or his or her representative responsible for provision of medical support at the unit, command, or installation concerned.

Occupational medicine staff
Personnel who may include an OH physician, OH nurse, industrial hygienist, industrial hygiene/OH technician, RPO, audiologist, and optometrist.

Pathological waste
Any wastes that include anatomical parts of humans and animals, excluding human corpses and animal carcasses. State/local definitions may be more restrictive and would then prevail.

Permitted sanitary landfill
A landfill that has State or Federal approval to operate and is operated in a manner that protects health and the environment. Waste is compacted and covered with earth daily, scavenging is strictly prohibited, and it is not an attractant to vermin.

Refuse
All solid waste that is not classified as infectious, pathological, or hazardous waste. Often referred to as trash and garbage.

Respiratory isolation
Isolation that prevents transmission of organisms by means of direct contact or droplets that are coughed, sneezed, or breathed into the environment.

Retort
A large steam autoclave, constructed usually of material other than stainless steel, used to treat infectious or pathological waste.

Solid waste
Any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility. It includes other discarded material such as solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. Infectious, pathological, and hazardous wastes are special categories of solid waste. Each of these categories requires specific management in collection, handling, and disposal. The following are not solid wastes—

a. Solid or dissolved material in domestic sewage.

b. Solid or dissolved materials in irrigation return flows.

c. Industrial discharges which are point sources subject to permits under section 402 of PL 92–500 (The Federal Water Pollution Control Act of 1972) as amended.

d. Source, special nuclear, or by-product material as defined by PL 93–485 (Atomic Energy Act of 1974).

Strict isolation
Isolation that prevents the transmission of all highly communicable diseases that are spread by both contact and airborne routes of transmission.

Treatment of hazardous waste
Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste that neutralizes such waste or renders such waste nonhazardous, safer for transport, amenable for recovery, amenable for storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or chemical composition of hazardous waste to render it nonhazardous.

Workplaces

a. Nonmilitary-unique workplaces and operations. DOD military and civilian workplaces and operations generally comparable to those of business and industry in the private sector. Examples include facilities involved and work performed in the repair and overhaul of weapons, vessels, aircraft, or vehicles (except for equipment trials); construction; supply services; civil engineer or public works; medical services; and office work.

b. Military-unique equipment, systems, operations, or workplaces.

(1) Equipment and systems that are unique to the National defense mission, including the operation, testing, and maintenance procedures dictated by the design configuration. Examples include military weapons, aircraft, ships, submarines, missiles and missile sites, early warning systems and sites, military space systems, ordnance, tanks, and tactical vehicles.

(2) Operations or workplaces that are uniquely military, such as field maneuvers; combat training; naval operations; military flight and missile operations; associated research, test, and development activities; and actions required under emergency conditions.

Wound and skin precautions
Precautions that prevent acquisition of infection by personnel and patients from direct contact with wounds and heavily contaminated articles.

Section III
Definitions Extracted from ANSI Standard Z16.4–1977

Appendix
(This Appendix is not an official part of American National Standard for Uniform Recordkeeping for Occupational Injuries and Illnesses, Z16.4–1977, but is included within that publication for information purposes only.)

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Guiding Interpretations and Examples
(The subdivisions of the appendix are numbered to correspond with the section numbers in the standard. Since it is not necessary to have appendix matter for every section in the standard, there are gaps in the numbering in the appendix.)

A2. Definitions

A2.2 Exposure or Employee-Hours. Determination of employee-hours of exposure: Employee-hours of exposure for calculating incidence rates are to be actual hours worked. When actual hours are not available, estimated hours may be used. Employee-hours should be calculated as given under A2.2.1 and A2.2.2.

A2.2.1 Actual Exposure Hours. Employee-hours of exposure for nonexempt employees are to be taken from payroll or time-clock records and include only actual straight-time hours worked and actual overtime hours worked.

A2.2.2 Estimated Exposure Hours. When actual employee-hours of exposure are not available, estimated hours may be used. Such estimated hours should be obtained by multiplying the total employee-days worked for period by the average number of hours worked per day. If the hours worked per day vary among departments, a separate estimate should be made for each department and these estimates added to obtain the total hours. Estimates of overtime hours should be included.

Note. If employee-hours are estimated, indicate the basis on which estimates are made.

A2.2.2.1 Employees Living on Company Property. In calculating hours of exposure for employees who live on company property, only those hours during which employees were actually on duty are to be counted.

A2.2.2.2 Employees with Undefined Hours of Work. For traveling personnel, executives, and others whose working hours are not defined, an average of 8 hours per day is to be assumed in computing exposure hours.

A2.2.2.3 Standby Employees. For standby employees, including seamen aboard vessels, who are restricted to the confines of the employer's premises, all standby hours must be counted.

A2.6 Medical Treatment. Medical treatment versus first aid: The important point to be stressed is that the decision as to whether a case involves medical treatment should be made on the basis of whether the case normally would require medical treatment. The decision cannot be made on the basis of who treats the case. First aid can be administered by a physician and medical treatment by someone other than a physician.

It is not possible to list all types of medical procedures and treatments and on that basis alone determine if first aid or medical treatment was involved. For example, whirlpool treatments, heat treatments, application of hot or cold compresses, or elastic bandages are not in and of themselves either first aid or medical treatment.

What follows is a discussion of diagnostic procedures and preventive procedures and treatments, both of which are not in and of themselves medical treatment. Next is a discussion of treatments that are almost always medical treatment, and comments on medical treatment and first aid for certain types of injuries.

A2.6.1 Diagnostic Procedures

A2.6.1.1 Hospitalization for observation, where no medical treatment is rendered other than first aid, is not considered medical treatment.

A2.6.1.2 Visits to a physician or nurse for observation only or for routine change of dressing are not considered medical treatment.

A2.6.1.3 X-ray examination for fractures is considered diagnostic procedure and as such is not considered medical treatment or first aid. Where the x-ray is negative, the case is not recordable unless the injury required other medical treatment or met one of the other criteria for recordability.

A2.6.1.4 Physical examination yielding few or no findings and not substantiating subjective complaints in questionable cases is not considered medical treatment.

A2.6.1.5 Reactions to or effects of diagnostic procedures that are necessitated by a work-related injury or illness and which meet the criteria for recordability should be recorded.

A2.6.2 Preventive Procedures and Treatments

A2.6.2.1 Tetanus shots, either initial shots or boosters, are considered preventive in nature and are not in and of themselves considered medical treatment. However, treatment of a reaction to a tetanus shot administered because of an injury would be considered medical treatment and would make the case recordable.

A2.6.2.2 Any use of prescription medication normally constitutes medical treatment. However, it should be considered first aid when a single dose or application of a prescription medication is given on the first visit merely for relief of pain or as preventive treatment for a minor injury. This situation can occur at facilities having dispensaries stocked with prescription medications frequently used for preventive treatment and relief of pain and attended by a physician or registered professional personnel operating under the standing orders of a physician. The administration of nonprescription medication in similar circumstances would be considered first aid.

A2.6.2.3 The application of ointments and salves to prevent the drying or cracking of skin at the site of a minor injury can be considered first aid.

A2.6.2.4 The application of antiseptics to minor injuries which do not themselves require medical treatment can be considered first aid. Changing the bandage or dressing on an injury which did not require medical treatment, because the bandage or dressing has become dirty, is considered first aid.

A2.6.2.5 Reaction to preventive medication (not administered because of an occupational injury or illness) administered in-plant (such as flu shots) would not constitute a recordable case.

A2.6.2.6 In-plant treatment of off-the-job injuries and illnesses is not recordable.

A2.6.3 Treatments that Are Almost Always Medical Treatment. These treatments are as follows:

(1) Suturing of any wound
(2) Treatment of fractures
(3) Application of a cast or other professional means of immobilizing an injured part of the body
(4) Treatment of infection arising out of an injury
(5) Treatment of a bruise by the drain of blood
(6) Surgical debridement, that is, the removal of dead or damaged tissue
(7) Treatment of abrasions that occur to greater than full skin depth
(8) Treatment of second- and third-degree burns

Note: Administration of prescription medicines is usually considered medical treatment (see A2.6.2.2).

A2.6.4 Medical Treatment and First Aid for Certain Types of Injuries

A2.6.4.1 Cuts and Lacerations

A2.6.4.1.1 First Aid. Treatment is limited to cleaning of the wound, soaking, application of antiseptic or nonprescription medication, and bandaging on the first visit. Follow-up visits are limited to observation, including changing of the dressing and bandage. Additional cleaning and application of antiseptic are permissible as first aid where required by work duties that are likely to soil the bandage. Application of butterfly closures for cosmetic purposes only can be considered first aid.

A2.6.4.1.2 Medical Treatment. The injury requires butterfly closures (for noncosmetic purposes), sutures (stitches), surgical debridement (cutting away dead tissue), treatment of infection, or other professional treatment.

A2.6.4.2 Abrasions

A2.6.4.2.1 First Aid. This is the same as for cuts and lacerations except that ointments can be added on follow-up visits to prevent drying and cracking of skin.

A2.6.4.2.2 Medical Treatment. The injury requires careful examination for removal of embedded foreign material, multiple soakings, whirlpool treatment, treatment of infection, or other professional treatment. This is any case involving more than a minor, spot-type injury. Treatment of abrasions occurring to greater than full skin depth is considered medical treatment.

A2.6.4.3 Bruises

A2.6.4.3.1 First Aid. Treatment is limited to a single soaking or application of cold compresses on a minor bruise. Follow-up visits are limited only to observation.

A2.6.4.3.2 Medical Treatment. The injury requires multiple soakings, draining of collected blood, or other extended care beyond observation.

A2.6.4.4 Splinters and Puncture Wounds

A2.6.4.4.1 First Aid. Treatment is limited to cleaning of the wound, removal of a foreign object(s) by tweezers or other simple techniques, application of antiseptics and nonprescription medications, and bandaging on the first visit. Follow-up visits are limited to observation, including changing of the bandage. Additional cleaning and application of antiseptic are permissible as first aid where required by work duties that are likely to soil the bandage.

A2.6.4.4.2 Medical Treatment. The injury requires removal of a foreign object(s) by a physician due to the depth of embedment, size or shape of the object(s), or location of the wound. This is also injuries requiring treatment for infection, treatment of a reaction to a tetanus booster, or other professional treatment.

A2.6.4.5 Burns, Thermal and Chemical (Resulting in Destruction of Tissue by Direct Contact)

A2.6.4.5.1 First Aid. Treatment is limited to cleaning or flushing of the surface; soaking; application of cold compresses, antiseptics, or nonprescription medications; and bandaging on the first visit. Follow-up visits are restricted to observation, changing of bandages, or additional cleaning. Most first-degree burns are amenable to first-aid treatment.

A2.6.4.5.2 Medical Treatment. The injury requires a series of treatments including soaks, use of whirlpools, and surgical debridement (cutting away dead tissue). Most second- and third-degree burns require medical treatment.

A2.6.4.6 Sprains and Strains

A2.6.4.6.1 First Aid. Treatment is limited to soaking, application of cold compresses, and use of an elastic bandage on the first visit. Follow-up visits are for observation, possibly including reapplying a bandage.

A2.6.4.6.2 Medical Treatment. The injury requires a series of hot and cold soaks, use of whirlpools, diathermy treatment, or other professional treatment.

A2.6.4.7 Eye Injuries

A2.6.4.7.1 First Aid. Treatment is limited to irrigation, removal of foreign material not embedded in the eye, and application of nonprescription medications. A precautionary visit (special examination) to a doctor is still considered first aid if treatment is limited to the aforementioned items. Follow-up visits are for observation only.

A2.6.4.7.2 Medical Treatment. This is cases involving removal of embedded foreign objects, use of prescription medications, or other professional treatment.

A2.6.4.8 Inhalation of Toxic or Corrosive Gases

A2.6.4.8.1 First Aid. Treatment is limited to removal of the employee to fresh air or the one-time administration of oxygen for several minutes.

A2.6.4.8.2 Medical Treatment. This is any professional treatment beyond the

aforementioned. It includes all cases involving loss of consciousness.

A2.7 Work-Related Cases. The broad concept is that any injury or illness "occurring in and attributable to the work environment" is "work-related." Work environment is comprised of the physical location, equipment, materials processed or used, and the kinds of operations performed by an employee in the performance of his work, whether on or off the employer's premises. There are no stated exclusions of place or circumstance. Therefore, injuries or illnesses occurring in such places as the employee parking lot, lunchroom, or restroom, or during rest or lunch period on the employer's premises, can be work-related. The final determination of whether any case is work-related must be made by the employer. Responsibility or fault does not enter into the decision of whether a case is work-related. In doubtful situations, a case should be recorded.

A2.8 Recordable Cases

Recordable work-related cases are those that involve any of the following:

(1) Deaths, regardless of the time between occupational injury or illness and death.

(2) All occupational illnesses, including, but not limited to, the following categories and examples:

(a) Occupational skin diseases or disorders Examples: contact dermatitis, eczema, or rash caused by primary irritants and sensitizers, or poisonous plants; oil acne; chrome ulcers; chemical burns or inflammations. (Direct contact causing tissue damage only, resulting from a thermal or chemical burn, is classified as an injury, not an illness case.)

(b) Dust diseases of the lungs (pneumoconioses)

Examples: silicosis, asbestosis, coal worker's pneumoconiosis, byssinosis, and other pneumoconioses.

(c) Respiratory conditions due to toxic agents

Examples: pneumonitis, pharyngitis, rhinitis or acute congestion due to chemicals, dusts, gases or fumes; farmer's lung.

(d) Poisoning (systemic effects of toxic materials)

Examples: poisoning by lead, mercury, cadmium, arsenic, or other metals; poisoning by carbon monoxide, hydrogen sulfide, or other gases; poisoning by benzol, carbon tetrachloride, or other organic solvents; poisoning by insecticide sprays such as parathion, lead arsenate; poisoning by other chemicals such as formaldehyde, plastics, and resins.

(e) Disorders due to physical agents (other than toxic materials)

Examples: heatstroke, sunstroke, heat exhaustion, and other effects of environmental heat; freezing; frostbite and effects of exposure to low temperatures; caisson disease; effects of ionizing radiation (isotopes, x-rays, radium); effects of nonionizing radiation (welding flash, ultraviolet rays, microwaves, sunburn).

(f) Disorders associated with repeated trauma

Examples: noise-induced hearing loss; synovitis, tenosynovitis, and bursitis; raynaud's phenomenon; and other conditions due to repeated motion, vibration, or pressure.

(g) All other occupational illnesses

Examples: anthrax, brucellosis, infectious hepatitis, malignant and benign tumors, food poisoning, histoplasmosis, coccidioidomycosis.

(3) Injuries resulting in any of the following:

(a) Lost workdays—either days away from work or days of restricted work activity

(b) Medical treatment other than first aid

(c) Loss of consciousness

(d) Restriction of work or motion

(e) Temporary or permanent transfer

(f) Termination of injured or ill employee

Loss of consciousness of the employee for any period of time is self-explanatory. Restriction of motion is not defined specifically. Each case must be judged individually to determine if there is more than a trivial amount of restricted motion, such as would occur when a small adhesive bandage was placed on the second joint of the finger. It should be noted here that damage to prostheses (such as false teeth) is not in and of itself grounds for recordability unless accompanied by other damage to the body that meets the recordability criteria.

A2.10.1 Lost Workday Cases with Days Away from Work. These are cases that result in 1 or more days away from work. Days away from work are those workdays (consecutive or not) on which the employee would have worked but could not because of occupational injury or illness. The number of lost workdays should not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work. For example, if an employee who is scheduled to work Monday through Friday has a recordable case on Friday and returns to work on Monday, the case does not involve any days away from work even if the employee was unable to work on Friday, Saturday, or Sunday. If this same employee had been scheduled to work on Saturday, even if that Saturday constituted overtime, the Saturday would be counted as days away from work, and the case would be classified as a lost workday case with days away from work.

For employees not having a regularly scheduled shift, for example, certain truck drivers, construction workers, farm labor, casual labor, part-time employees, etc., it may be necessary to estimate the number of lost workdays.

Estimates of the number of days that the employee would have worked should take into account the prior work history of the employee and days worked by employees, not ill or injured, working in the same department or occupation as the ill or injured employee.

In some cases an injured or ill employee will miss one or more scheduled days or shifts besides the day of injury or onset of illness, but it will be uncertain whether the employee was truly unable to work on the days missed. Such cases may arise when a doctor judges that the employee is able to work but the employee decides that he is not. In such cases, the employer should not rely solely on the doctor's opinion. He should make the final judgement himself based on all the evidence at his disposal. Again, the rule should be "when in doubt, record the case"

A2.10.2 Lost Workday Cases with Days of Restricted Work Activity Only. These are cases that result in 1 or more days of restricted work activity but do not result in any days away from work.

Days of restricted work activity include those days (consecutive or not, but excluding the day of injury or onset of illness) on which one of the circumstances described in A2.10.2.1. through A2.1.2.3 occurred.

A2.10.2.1 Temporary Assignment. The employee was assigned to another job on a temporary basis. Even if the employee normally shifts from job to job within an occupational classification, if any switch or transfer is occasioned by a work-related injury or illness, the case involves days of restricted work activity. Such days are meant to cover all days on which the employee was unable to contribute a full day's work on all parts of his permanent job. In cases where an employee is not working at his regular job and is injured or becomes ill and is transferred back to his original job, which he can perform without limitation, there are no days of restricted work activity.

A2.10.2.2 Loss of Part of Shift. The employee worked at a permanent job less than his full shift or normal day. Loss of a full day or shift would constitute a lost workday away from work.

A2.10.2.3 Restricted Work Activity. The employee worked at a permanently assigned job but could not perform all duties normally connected with it. All days (excluding the day of injury or onset of illness) for which the employee was scheduled to work and could not perform all or any part of his normal assignment during all or any part of the workday or shift should be considered days of restricted activity.

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RESERVED

NAME *(Last, First, MI)*	1	2	3	4	5	6	7	8	9	10	11	12

DATE OF BIRTH	STATUS ☐ AD ☐ RET ☐ DEP	BRANCH ☐ ARMY ☐ NAVY ☐ MARINE ☐ AF ☐ OTHER (Specify)

SPONSOR	RANK	SSN	UNIT ADDRESS	DUTY PHONE

HOME ADDRESS *(Include Zip Code)*	HOME PHONE

ACTIVE CASE				
ADMITTED ☐ YES ☐ NO	ADMITTED DATE	DISCHARGE DATE	*ATS CODE	CONTACTS CHECKED ☐ YES ☐ NO

CONTACT		
☐ CLOSE ☐ CASUAL	CONTACT OF	DATE CONTACT TERMINATED

CONVERTER/REACTOR					
SKIN TEST RESULTS			LAST NEGATIVE SKIN TEST		CONTACTS CHECKED ☐ YES ☐ NO
DATE	TYPE	SIZE	DATE	TYPE	

DRUG REGIMEN				
DATE STARTED	TYPE	DOSE	FREQUENCY	LENGTH OF THERAPY

**American Thoracic Society standard diagnostic and therapeutic code.*

DA FORM 3897-R, AUG 90 Previous editions obsolete.

TUBERCULOSIS REGISTRY

For use of this form, see AR 40-5; the proponent agency is the OTSG

REPORTED TO STATE/LOCAL HEALTH DEPARTMENT *(If yes, list name of State or Local Health Department and date reported.)*

☐ YES ☐ NO

X-RAY FINDINGS

DATE	TEST RESULTS	DATE	NOTES

RETURN VISIT ACTIONS *(Use pencil).*

Reverse of DA Form 3897-R, AUG 90

BARBER/BEAUTY SHOP INSPECTION

For use of this form, see AR 40-5; the proponent is TSG

INSTALLATION	BUILDING NO.	FACILITY DESIGNATION

PERSON IN CHARGE OF FACILITY	COPY REPORT FURNISHED TO

TYPE FACILITY 1

— 1. AAFES Barber Shop
— 2. Troop Barber Shop
— 3. Club Barber Shop
— 4. AAFES Beauty Shop
— 5. Club
— 6. Other *(specify)*

RATING 2

— 1. Satisfactory
— 2. Unsatisfactory
— 3. Marginal
— 4. Other *(specify)*

PURPOSE 3

— 1. Regular
— 2. Courtesy
— 3. Pre-opening
— 4. Other *(specify)*

COMMAND		INSTALLATION					FACILITY		INSPECTOR			INSPECTION TIME *(MIN)*			DATE YR		DATE MO		DATE DAY		RESERVED									
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34

Description *(Use reverse for remarks; identify each remark by item number.)*	Reference Paragraph AR 40-5	Deficiency Yes	Deficiency No
EMPLOYEE HYGIENE			
*01 Employees do not work when ill with communicable disease *(e.g., boils, skin infections, etc.)*	E-2a	—	—
02 Current preemployment or periodic medical examination certificates *(only when required by medical authority)*	E-2b	—	—
03 Employees do not return to work after illness unless cleared by the medical authority	E-2b	—	—
04 Clean uniform worn	E-2c	—	—
05 Employees smoke, eat or drink only in designated break areas	E-2d	—	—
SANITARY FACILITIES			
06 Not located in food service or sleeping areas	E-3a	—	—
*07 Adequate hot and cold running water, adequate fixtures and waste disposal, no cross connections	E-3b	—	—
08 Shop area kept clean, adequately lighted and ventilated. Outside area policed	E-3c & d	—	—
09 Adequate closed waste receptacles provided	E-3e	—	—
INSTRUMENTS, TOWELS, AND DISPOSABLES			
10 Headrest covered with clean paper or towel for each patron	E-4a	—	—
11 Only individual freshly laundered or disposable neck strips used	E-4b	—	—
12 Reusable haircloths kept clean and changed at least daily	E-4c	—	—
*13 No common brushes, neck dusters, shaving brushes or other similar multiuse brushes used. *(Exception allowed for synthetic bristle brushes which are designed to be cleaned between patrons and sanitized as required.)*	E-4d	—	—

Description	Reference Paragraph AR 40-5	Deficiency Yes	Deficiency No
SANITARY PRACTICE			
*14 Patrons with boils, pimples or other inflammations referred to medical authority prior to services	E-5a	—	—
*15 Persons with known or suspected lice infestations not served	E-5a	—	—
16 Prohibited practices not conducted *(e.g., treating blackheads, removing hairs from ears, nose, etc.)*	E-5b	—	—
*17 Only approved materials used for stopping blood	E-5c	—	—
18 Materials applied with freshly laundered or disposable cloths. Cloths disposed of properly	E-5c	—	—
*19 Only USDA, FDA, or EPA approved barber and beauty supplies used and only for intended use	E-5d	—	—
SANITATION OF INSTRUMENTS			
*20 Instruments scrupulously cleaned between patrons	E-6a	—	—
21 Hair removed from clippers between patrons	E-6b	—	—
*22 Instruments disinfected as required			
a. in event skin inflammation lesions are discovered on patron being served	E-6c	—	—
b. at close of each day of operation	E-6f	—	—
23 Only USDA or EPA disinfectants used. Disinfectants used in accordance with label instructions	E-6d	—	—
24 Fresh solution prepared at least daily	E-6d	—	—
25 All instruments rinsed with potable water after disinfecting	E-6g	—	—
26 Copy of Appendix E, AR 40-5, posted	E-7	—	—

*Critical deficiencies requiring immediate correction

INSPECTED BY *(signature)*	DATE/TIME	COPY RECEIVED BY *(signature and date)*

REPORTED TO STATE/LOCAL HEALTH DEPARTMENT *(If yes, list name of State or Local Health Department and date reported.)*

☐ YES ☐ NO

X-RAY FINDINGS

DATE	TEST RESULTS	DATE	NOTES

RETURN VISIT ACTIONS *(Use pencil).*

Reverse of DA Form 3897-R, AUG 90

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SANITARY FACILITIES			
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b. at close of each day of operation	E-6f	__	__
23 Only USDA or EPA disinfectants used. Disinfectants used in accordance with label instructions	E-6d	__	__
24 Fresh solution prepared at least daily	E-6d	__	__
25 All instruments rinsed with potable water after disinfecting	E-6g	__	__
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INSPECTED BY *(signature)*	DATE/TIME	COPY RECEIVED BY *(signature and date)*

RSS

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAY 06 1987

MEMORANDUM FOR: William E. Cline, Chief
Nuclear Materials Safety and Safeguards Branch
Region II

FROM: John W. N. Hickey, Chief
Operations Branch
Division of Fuel Cycle, Medical, Academic and Commercial Use Safety

SUBJECT: EVALUATION OF ACCEPTABILITY OF PROPOSED DECOMMISSIONING ACTIVITIES

In your memorandum of April 16, 1987, you requested guidance on the acceptable concentration of Co-60 and Cs-137 in soil to allow the release of the Department of the Army, Fort McClellan, Alabama, facility. The primary pathway for exposure of individuals for these nuclides is by direct radiation. Therefore, the determination of acceptability for surface contamination of ground areas should be based on the following criteria:

External Radiation

The gamma exposure at 1 meter above the ground surface shall not exceed 10 uR/h above background for an area of greater than 30 ft x 30 ft and shall not exceed 20 uR/h above background for any discrete area (i.e., less than 30 ft x 30 ft).

Concentration criteria have also been developed for Co-60 and Cs-137 for situations in which subsurface contamination may be present, such as when burials of material have been made. These criteria are as follows:

Radionuclide	Concentration Limit Above Background (pCi/g)
Co-60	8
Cs-137	15

Where more than one radionuclide is present, the sum of the ratios of the individual radionuclide concentrations to their respective concentration limits shall not exceed 1.

I hope that this information is satisfactory as you evaluate the adequacy of the Department of the Army's decommissioning. If you have further questions, please feel free to contact me.

John W. N. Hickey, Chief
Operations Branch
Division of Fuel Cycle, Medical, Academic, and Commercial Use Safety

Enclosures:
1. Ltr to Mr. Rourk fm JLDascanio dtd 4/6/87.
2. Draft ltr to Dept of Army and Memo to JPotter from JBrable dtd 3/12/87.

Official

CETHA-IR-A (50-6c)

17 APR 1992

MEMORANDUM FOR Chief, Technical Support Division, ATTN: Mr. Robert L. Muhly

SUBJECT: Request for U.S. Army Environmental Hygiene Agency (AEHA) Support

1. Reference:

a. U.S. Army Environmental Hygiene Agency, Radiation Protection Survey No. 28-43-0930-84 U.S. Army Chemical and Military Police Center and School and Fort McClellan, Alabama, July 27- August 2, 1983.

b. U.S. Army Environmental Hygiene Agency, Radiation Protection Study No. 28-43-0012-84 Hot Cell Contamination Fort McClellan, Alabama, February 6, 1984.

2. Fort McClellan, in particular the U.S. Army Chemical School, has raised concerns during the review of the Site Investigation Work Plan that former radiation sites were not included.

3. Request AEHA investigate former radiation areas by 4QFY92 at Fort McClellan, determining maximum exposure rates at the Hot Cell and associated underground storage tanks, Buildings 2281, 4416, and T-812 1/2, radiological training hot spots on Iron Mountain, burial locations in Rideout Field, and former training areas, Bromine and Alpha Fields.

4. The POC for this action is Dr. Kathleen Buchi, ext. 5-1508.

/S/ JTC King

ROBERT J. YORK
Chief
Installation Restoration Division

TM
IRD

MJD
IR-A

PO

DIR

U.S. ARMY ENVIRONMENTAL CENTER
ATTN: SFIM-AEC-IRB
Building E4480
Aberdeen Proving Ground, MD
21010-5401

Installation Restoration Division

DSN 584-1527

FAX (410) 671-1548

TO: FRAN SZROM

OFFICE: CHPPM -

PHONE: - 8234 FAX: 5-8261

NUMBER OF PAGES: Header + 1 DATE:

CLASSIFICATION: Unclassified

FROM: Dean W. Hutchins

OFFICE: SFIM-AEC-IRB

PHONE: (410) 671-1527 FAX: (410) 671-1548

MESSAGE:

FRAN,

I DUG THIS OUT OF THE FILE, WHY WOULDN'T THIS STILL BE IN EFFECT; ALSO WOULD THIS SUFFICE FOR YOUR NEEDS?

DEAN

left voicemail

NOT SUFFICIENT. DETAILS

28 Dec 95 @ 1011

RADIOACTIVE WASTE SHIPMENT & DISPOSAL MANIFEST

24 Hour Emergency Response 800-521-2849 Duty Supervisor

NUCLEAR SOURCES & SERVICES, INC.

P.O. BOX 34042 • HOUSTON, TEXAS 77234 • AREA CODE 713/641-0391 FAX NO. 713-641-6153
SHIPPING ADDRESS: 5711 ETHERIDGE / HOUSTON, TX 77087

GENERATOR NAME Ft McClellan ARMY DEPOT CUST.#
ADDRESS ATZM-CM-AEP, BIDG 3192
CITY Fort McClellan STATE Al ZIP 36205-5000
CONTACT John MAY PHONE 205-848-5737

# OF PACKAGES	WEIGHT (Pounds)	PROPER SHIPPING NAME & HAZARD CLASS (PER 49 CFR 172.101)	ID NUMBER
		Radioactive Material, LSA, n.o.s.	UN2912
		Radioactive Material, n.o.s.	UN2982
		Radioactive Material, special form, N.O.S.	UN2974
2	4700	Hazardous Waste, Solid, nos, 9 (RQ LEAD)	NA3077

TX HAZ MANIFEST # 00922482

THIS IS TO CERTIFY THAT THE HEREIN-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION AND ARE IN COMPLIANCE WITH THE REQUIREMENTS APPLICABLE AT THE DESIGNATED DISPOSAL SITE, AND THAT THE MATERIALS ARE CLASSIFIED AND DESCRIBED IN ACCORDANCE WITH THE REQUIREMENTS OF 10CFR, PART 61 AND PART 20.311 OR EQUIVALENT STATE REGULATIONS:

Timothy Mock — Senior Broker — 4/9/97
Authorized Signature — Title — Date
ATG For US ARMY

THE LISTED MATERIAL WAS RECEIVED BY NSSI:

Authorized Signature — Title — Date

NOTE #1 - Waste Description Codes
1. Dry Solid
2. Bulk Liquid
3. Scintillation Vial
4. Biological
5. Other

NOTE #2 - Solidified or Absorbent Media Codes
1. Celite
2. Vermiculite
3. Other

NOTE #3 - NRC Stability Class Code
S - Stable
U - Unstable

ACTIVITY

ACTIVITY TOTALS: ☐ Curies Millicuries ☒	TRITIUM	C-14	Tc-99	I-129	ALL ISOTOPES
	0	0	0	0	0.0365

Drum Number	Container Type	Container Volume (Cu Ft)	Container Weight (Pounds)	Physical Form	Waste Description (See Note #1)	Solidification or Absorbent (See Note #2)	Chemical Form/ Chelating Agent (10CFR20 311)	CHECK Below if<.01 % Chelating Agent by Weight	Radionuclides	Activity Curie ☒ mCi	D.O.T. Sub-Type (A_1, A_2, LSA, etc)	Special Nuclear Material (Grams)	Source Material (Kilograms)	Waste Form Class	Stability Class (See Note #3)	Radiation Levels mR/HR: Disposal Container Surface	Radiation Levels mR/HR: Survey Instrument Number	Radiation Levels mR/HR: Disposal Container At 1 Meter	Transport Index	Fissile Class	D.O.T. Label 49CFR 173.444
B-12 Box #30	Steel Box	48	4600	Solid	1	none	OXIDES / None	✓	Co-60	0.0095	<DOT	NP	NP	AU	U	<0.1	Ludlum 19 98112		N/A	N/A	Class 9
Drum #1	Steel Drum	25	100	Solid	1	none	OXIDES / None	✓	Co-60	0.027	<DOT	NP	NP	AU	U	~~<0.1~~ 0.2	Ludlum 19 98112		N/A	N/A	Class 9

ORIGINAL

John May

DOT Shipping Papers Page 1 of 1

TEXAS NATURAL RESOURCE
CONSERVATION COMMISSION
P.O. Box 13087
Austin, Texas 78711-3087

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2050-0039, expires 09/30/95

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. AL 4 2 1 0 0 2 0 5 6 2 Manifest Document No. 000001

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
FORT McClellan ARMY DEPOT
ATTN: ATZN-CM-AEP, 6106 J192 Fort McClellan, AL 36205-5000

4. Generator's Phone (205) ~~487~~ 848-5737

A. State Manifest Document Number: 00922482

B. State Generator's ID: AL 4 2 1 0 0 2 0 5 6 2

5. Transporter 1 Company Name: TSMT

6. US EPA ID Number: M O D 0 0 9 5 0 3 8 9 9 8

C. State Transporter's ID:

D. Transporter's Phone: 800-234-8768

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
NSSI / Recovery Services INC
5711 Etheridge
Houston TX 77087

10. US EPA ID Number: T X 0 9 8 2 5 6 0 2 9 4

G. State Facility's ID: 38669

H. Facility's Phone: 713-641-6153

11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
RQ	a. Hazardous Waste, Solid, nos, 9, NA3077 (RQ Lead)	001	DM	00100	100 lbs	D008 OUTS 3194
RQ	b. Hazardous Waste, solid, nos, 9, NA 3077 (RQ Lead)	001	BX	04600	4600 lbs	D008 OUTS 3194
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above
Less Than DOT Radioactive

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
E. R. G. # 171 24 HR Emergency Response: Call Duty Supervisor 800-321-2844

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: Timothy P. Mock | Signature | Month Day Year: 04 09 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials | Date

Printed/Typed Name: THOMAS BRYANT | Signature | Month Day Year: 04 09 97

18. Transporter 2 Acknowledgement of Receipt of Materials | Date

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. | Date

Printed/Typed Name | Signature | Month Day Year

TNRCC-0311 (Rev. 07/13/94)

White - original Pink-TSD Facility Yellow-Transporter Green-Generator's first copy

EMERGENCY RESPONSE

FIRE

Small Fires

- Dry chemical, CO_2, water spray or regular foam.

Large Fires

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Do not scatter spilled material with high pressure water streams.
- Dike fire-control water for later disposal.

Fire involving Tanks

- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from the ends of tanks.

SPILL OR LEAK

- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent dust cloud.
- Avoid inhalation of asbestos dust.

Small Dry Spills

- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Small Spills

- Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

Large Spills

- Dike far ahead of liquid spill for later disposal.
- Cover powder spill with plastic sheet or tarp to minimize spreading.
- Prevent entry into waterways, sewers, basements or confined areas.

FIRST AID

- Move victim to fresh air.
- Call emergency medical care.
- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD (#E-100)

John May

ENVIROCARE OF UTAH, INC.
46 WEST BROADWAY, SUITE 240
SALT LAKE CITY, UTAH 84101
PHONE: (801)532-1330
FAX: (801)537-7345

[7] PAGE 1 OF 5 RECORD #: 2059-01-01
(USE ON ALL CONTINUATION PAGES)

RAIL CAR/TRAILER #: 845019
Consigned to: ENVIROCARE OF UTAH, INC., CLIVE DISPOSAL SITE
INTERSTATE 80, EXIT 49, WEST OF SALT LAKE, UTAH 84029

[1] GEN. NAME: Fort McClellan Army Depot
ADDRESS: ATZN-CM-AEP, BLDG 3192
CITY/ST/ZIP: Fort McClellan, AL, 36205-5000
CONTACT PERSON: John May
PHONE: 205-848-5737

[2] BILL DISPOSAL CHARGES TO:
NAME: USAED, Kansas City (MRK-CTH)
P.O./CONT. #: DACW 41-93-D-9001
ADDRESS: 757 Federal BLDG, 601 E. 12th Street
CITY/ST/ZIP: Kansas City, MO, 64106-2896
PHONE: 816-426-6484

[3]
AGENT/BRKR: Allied Technology Group
CONTACT: Timothy Mock
ADDRESS: 99A Midway Lane
CITY/ST/ZIP: Oak Ridge, TN 37830
PHONE: 423-482-3275
SIGN/DATE: 4/8/97

[4]
CARRIER: TSMT SHIP DATE: 4/8/97
CARRIER EPA # (if any): none
ADDRESS: PO Box 113
CITY/ST/ZIP: Joplin, MO, 64802
CONTACT: Tanya
PHONE: 800-846-8768

MANIFEST DOCUMENT NUMBER
(HAZARDOUS WASTE ONLY):

[5] TOTAL, EACH CLASS # of Pkgs.	Weight ~~Tons~~ lbs	PROPER SHIPPING NAME & HAZARD CLASS (per 49 CFR 172.101)	DOT ID NUMBER
11	42250	less than DOT, remediation debris	

TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material ___ is – OR – X is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by Envirocare of Utah, Inc., and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in Envirocare of Utah, Inc.

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and Envirocare of Utah, Inc.'s facility license.

D. INDEMNIFICATION: Generator agrees to indemnify Envirocare of Utah, Inc., its officers, employees and agents against all loses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD, or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such Matters

[6] SHIPMENT TOTALS

No. of Cont.	Activity in Millicuries					
11	H-3*	0	Ra-228	0.01535		
	C-14*	0	Th-234	0.01726		
	Tc-99*	0				
Volume	I-129*	0				
Cu. Ft.	U-nat	0.0096				
624	Co-60	1.0607				
	Cs-137	0.1074				
	Ra-226	0.0153			Total	1.2257

TOTAL SNM Isotope	Grams	# of Cont.
U-233	0	0
U-235	0	0
Pu	0	0
Total	0	0

PHYSICAL FORM
SOLID
CHEMICAL FORM
OXIDES

* Must show "0" if not present. List additional nuclides and activities in blank spaces provided.

THIS IS TO CERTIFY THAT THE HEREIN-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE D.O.T. REGULATIONS, AND ARE IN COMPLIANCE WITH ALL REQUIREMENTS APPLICABLE AT THE DESIGNATED DISPOSAL SITE, AND THE REQUIREMENTS OF 10 CFR PART 61 AND PART 20.311 OR EQUIVALENT STATE REGULATIONS. IT IS FURTHERED CERTIFIED THAT ALL ITEMS ON THIS RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD HAVE BEEN THOROUGHLY EXAMINED, INCLUDING DIAGRAMS, AND ALL INFORMATION SUBMITTED IS TRUE, CORRECT AND COMPLETE.

TMock

Authorized Signature of Customer — Title: Senior Broker — Date: 4/8/97

Timothy Mock
Printed Name of Authorized Signature

TYPE OF CONTAINER	Container Volume Cu. Ft.	# of Packages	Cu. Ft. Per Container Type
Drums:			
Overpack:			
55:			
30:			
Boxes:			
1st Size:	96	2	192
2nd Size:	48	9	432
3rd Size:			
Rail cars:			
Truck/Trailer:			
Dump:			
Trailer:			
Other:			
Other:			
Other:			
SHIPMENT TOTALS		11	624

THIS AREA IS FOR ENVIROCARE OF UTAH, INC. USE ONLY

CHECK ALL THAT APPLY TO THIS LOAD: DESCRIBE INADEQUACIES IN COMMENTS

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment.

COMMENTS:

SHIPMENT RECEIVED FOR DISPOSAL
SHIPMENT REJECTED FOR DISPOSAL

INSPECTOR DATE

EC INVOICE #:
INVOICE DATE:
EC CUSTOMER #:

DISTRIBUTION:

White, Yellow, Pink - Must accompany waste in transit.

Green - Must be mailed to & be approved by Envirocare of Utah prior to shipment, unless a copy has been sent by fax.

Gold - Customer Copy.

FORM #E-100 Rev. 6/96

called 2/28/98 SMS

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-01
Page 2 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
5	B-25	96	2400	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000545	0.5	0	0.00248	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.060255	55.3	0	0						
										Cs-137	0.006102	5.6	0	0						
										Ra-226	0.000872	0.8	0	0						
										Ra-228	0.000872	0.8	0	0						
										Th-234	0.000981	0.9	0	0.00196						
11	B-25	96	7250	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001646	0.5	0	0.00748	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.18202	55.3	0	0						
										Cs-137	0.018432	5.6	0	0						
										Ra-226	0.002633	0.8	0	0						
										Ra-228	0.002633	0.8	0	0						
										Th-234	0.002962	0.9	0	0.00592						
43	B-12	48	4250	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000965	0.5	0	0.00439	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.106701	55.3	0	0						
										Cs-137	0.010805	5.6	0	0						
										Ra-226	0.001544	0.8	0	0						
										Ra-228	0.001544	0.8	0	0						
										Th-234	0.001737	0.9	0	0.00347						
3		240	13900	PAGE TOTALS						TOTAL ACTIVITY	0.403247		0	TOTAL SNM						

DISTRIBUTION OF COPIES (Please circle copy number):

TRUCK SHIPMENTS: 1, 2, 3, 4 ACCOMPANIES WASTE
5 CUSTOMER COPY

RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE
4 CUSTOMER COPY

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-01
Page 3 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
47	B-12	48	2400	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000545	0.5	0	0.00248	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.060255	55.3	0	0						
										Cs-137	0.006102	5.6	0	0						
										Ra-226	0.000872	0.8	0	0						
										Ra-228	0.000872	0.8	0	0						
										Th-234	0.000981	0.9	0	0.00196						
44	B-12	48	4250	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000965	0.5	0	0.00439	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.106701	55.3	0	0						
										Cs-137	0.010805	5.6	0	0						
										Ra-226	0.001544	0.8	0	0						
										Ra-228	0.001544	0.8	0	0						
										Th-234	0.001737	0.9	0	0.00347						
34	B-12	48	3100	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000704	0.5	0	0.0032	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.077829	55.3	0	0						
										Cs-137	0.007881	5.6	0	0						
										Ra-226	0.001126	0.8	0	0						
										Ra-228	0.001126	0.8	0	0						
										Th-234	0.001267	0.9	0	0.00253						
3		144	9750	PAGE TOTALS						TOTAL ACTIVITY	0.282853		0	TOTAL SNM						

DISTRIBUTION OF COPIES (Please circle copy number): TRUCK SHIPMENTS: 1, 2, 3, 4 ACCOMPANIES WASTE; 5 CUSTOMER COPY. RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE; 4 CUSTOMER COPY

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

enerator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-01
Page 4 of 5

	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) uR/hr Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
21	B-12	48	3750	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000851	0.5	0	0.00387	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.094148	55.3	0	0						
										Cs-137	0.009534	5.6	0	0						
										Ra-226	0.001362	0.8	0	0						
										Ra-228	0.001362	0.8	0	0						
										Th-234	0.001532	0.9	0	0.00306						
61	B-12	48	4600	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001044	0.5	0	0.00475	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.115489	55.3	0	0						
										Cs-137	0.011695	5.6	0	0						
										Ra-226	0.001671	0.8	0	0						
										Ra-228	0.001671	0.8	0	0						
										Th-234	0.00188	0.9	0	0.00376						
26	B-12	48	4100	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000931	0.5	0	0.00423	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.102935	55.3	0	0						
										Cs-137	0.010424	5.6	0	0						
										Ra-226	0.001489	0.8	0	0						
										Ra-228	0.001489	0.8	0	0						
										Th-234	0.001675	0.9	0	0.00335						
		144	12450	PAGE TOTALS						TOTAL ACTIVITY	0.361182		0	TOTAL SNM						

RIBUTION OF COPIES (Please circle copy number):

TRUCK SHIPMENTS: 1, 2, 3, 4 ACCOMPANIES WASTE
5 CUSTOMER COPY

RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE
4 CUSTOMER COPY

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-01
Page 5 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels ~~(mR/hr)~~ ~~(uR/h)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
49	B-12	48	2150	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000488	0.5	0	0.00222	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.053978	55.3	0	0						
										Cs-137	0.005466	5.6	0	0						
										Ra-226	0.000781	0.8	0	0						
										Ra-228	0.000781	0.8	0	0						
										Th-234	0.000878	0.9	0	0.00176						
24	B-12	48	4000	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000908	0.5	0	0.00413	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.100425	55.3	0	0						
										Cs-137	0.01017	5.6	0	0						
										Ra-226	0.001453	0.8	0	0						
										Ra-228	0.001453	0.8	0	0						
										Th-234	0.001634	0.9	0	0.00327						
2		96	6150	PAGE TOTALS						TOTAL ACTIVITY	0.178415		0	TOTAL SNM						

DISTRIBUTION OF COPIES (Please circle copy number): TRUCK SHIPMENTS: 1, 2, 3, 4 ACCOMPANIES WASTE; 5 CUSTOMER COPY

RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE; 4 CUSTOMER COPY

RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD (#E-100)

[1] GEN. NAME: Fort McClellan Army Depot
ADDRESS: ATZN-CM-AEP, BLDG 3192
CITY/ST/ZIP: Fort McClellan, AL, 36205-5000
CONTACT PERSON: John May
PHONE: 205-848-5737

ENVIROCARE OF UTAH, INC.
46 WEST BROADWAY, SUITE 240
SALT LAKE CITY, UTAH 84101
PHONE: (801)532-1330
FAX: (801)537-7345

[7] PAGE 1 OF 5 RECORD #: 2059-01-02
(USE ON ALL CONTINUATION PAGES)

RAIL CAR/TRAILER #: 848103
Consigned to: ENVIROCARE OF UTAH, INC., CLIVE DISPOSAL SITE
INTERSTATE 80, EXIT 49, WEST OF SALT LAKE, UTAH 84029

[2] BILL DISPOSAL CHARGES TO:
NAME: USAED, Kansas City (MRK-CTH)
P.O./CONT. #: DACW 41-93-D-9001
ADDRESS: 757 Federal BLDG. 601 E. 12th Street
CITY/ST/ZIP: Kansas City, MO. 64106-2896
PHONE: 816-426-6484

[3]
AGENT/BRKR: Allied Technology Group
CONTACT: Timothy Mock
ADDRESS: 99A Midway Lane
CITY/ST/ZIP: Oak Ridge, TN 37830
PHONE: 423-482-3275
SIGN/DATE: 4/8/97

[4]
CARRIER: TSMT SHIP DATE: 4/8/97
CARRIER EPA # (if any): none
ADDRESS: PO Box 113
CITY/ST/ZIP: Joplin, MO, 64802
CONTACT: Tanya
PHONE: 800-846-8768

MANIFEST DOCUMENT NUMBER
(HAZARDOUS WASTE ONLY):

TYPE OF CONTAINER	Container Volume Cu. Ft.	# of Packages	Cu. Ft. Per Container Type
Drums:			
Overpack:			
55:			
30:			
Boxes:			
1st Size:	96	0	0
2nd Size:	48	10	480
3rd Size:			
Rail cars:			
Truck/Trailer:			
Dump:			
Trailer:			
Other:			
Other:			
Other:			
SHIPMENT TOTALS		10	480

[5] TOTAL, EACH CLAS # of Pkgs.	Weight lbs ~~Tons~~	PROPER SHIPPING NAME & HAZARD CLASS (per 49 CFR 172.101)	DOT ID NUMBER
10	40800	less than DOT, remediation debris	

TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material ___ is – OR – X is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by Envirocare of Utah, Inc., and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in Envirocare of Utah, Inc.

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and Envirocare of Utah, Inc.'s facility license.

D. INDEMNIFICATION: Generator agrees to indemnify Envirocare of Utah, Inc., its officers, employees and agents against all loses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD, or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such

[6] SHIPMENT TOTALS

No. of Cont.	Activity in Millicuries					
10	H-3*	0	Ra-228	0.01482		
	C-14*	0	Th-234	0.01667		
	Tc-99*	0				
Volume	I-129*	0				
Cu. Ft.	U-nat	0.0093				
480	Co-60	1.0243				
	Cs-137	0.1037				
	Ra-226	0.0148			Total	1.18363

TOTAL SNM Isotope	Grams	# of Cont.
U-233	0	0
U-235	0	0
Pu	0	0
Total	0	0

PHYSICAL FORM
SOLID
CHEMICAL FORM
OXIDES

* Must show "0" if not present. List additional nuclides and activities in blank spaces provided.

THIS IS TO CERTIFY THAT THE HEREIN-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE D.O.T. REGULATIONS, AND ARE IN COMPLIANCE WITH ALL REQUIREMENTS APPLICABLE AT THE DESIGNATED DISPOSAL SITE, AND THE REQUIREMENTS OF 10 CFR PART 61 AND PART 20.311 OR EQUIVALENT STATE REGULATIONS. IT IS FURTHER CERTIFIED THAT ALL ITEMS ON THIS RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD HAVE BEEN THOROUGHLY EXAMINED, INCLUDING DIAGRAMS, AND ALL INFORMATION SUBMITTED IS TRUE, CORRECT AND COMPLETE.

Authorized Signature of Customer — Title: Senior Broker — Date: 4/8/97
Timothy Mock
Printed Name of Authorized Signature

THIS AREA IS FOR ENVIROCARE OF UTAH, INC. USE ONLY

CHECK ALL THAT APPLY TO THIS LOAD: DESCRIBE INADEQUACIES IN COMMENTS

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment.

COMMENTS:

SHIPMENT RECEIVED FOR DISPOSAL
SHIPMENT REJECTED FOR DISPOSAL

INSPECTOR DATE

EC INVOICE #:
INVOICE DATE:
EC CUSTOMER #:

DISTRIBUTION:

White, Yellow, Pink - Must accompany waste in transit.

Green - Must be mailed to & be approved by Envirocare of Utah prior to shipment, unless a copy has been sent by fax.

Gold - Customer Copy.

FORM #E-100 Rev. 6/96

John May

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-02
Page 2 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight (Tons) [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) (uR/h) Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
14	B-12	48	4150	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000942	0.5	0	0.00428	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.104191	55.3	0	0						
										Cs-137	0.010551	5.6	0	0						
										Ra-226	0.001507	0.8	0	0						
										Ra-228	0.001507	0.8	0	0						
										Th-234	0.001696	0.9	0	0.00339						
28	B-12	48	4050	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000919	0.5	0	0.00418	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.10168	55.3	0	0						
										Cs-137	0.010297	5.6	0	0						
										Ra-226	0.001471	0.8	0	0						
										Ra-228	0.001471	0.8	0	0						
										Th-234	0.001655	0.9	0	0.00331						
33	B-12	48	4100	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000931	0.5	0	0.00423	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.102935	55.3	0	0						
										Cs-137	0.010424	5.6	0	0						
										Ra-226	0.001489	0.8	0	0						
										Ra-228	0.001489	0.8	0	0						
										Th-234	0.001675	0.9	0	0.00335						
3		144	12300	PAGE TOTALS						TOTAL ACTIVITY	0.35683		0	TOTAL SNM						

DISTRIBUTION OF COPIES (Please circle copy number):

TRUCK SHIPMENTS: 1, 2, 3, 4 ACCOMPANIES WASTE
5 CUSTOMER COPY

RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE
4 CUSTOMER COPY

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-02
Page 3 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight (~~Tons~~ lbs) [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) (~~uR/hr~~) Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
31	B-12	48	4350	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000987	0.5	0	0.00449	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.109212	55.3	0	0						
										Cs-137	0.011059	5.6	0	0						
										Ra-226	0.00158	0.8	0	0						
										Ra-228	0.00158	0.8	0	0						
										Th-234	0.001777	0.9	0	0.00355						
22	B-12	48	3800	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000863	0.5	0	0.00392	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.095404	55.3	0	0						
										Cs-137	0.009661	5.6	0	0						
										Ra-226	0.00138	0.8	0	0						
										Ra-228	0.00138	0.8	0	0						
										Th-234	0.001553	0.9	0	0.00311						
57	B-12	48	4350	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000987	0.5	0	0.00449	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.109212	55.3	0	0						
										Cs-137	0.011059	5.6	0	0						
										Ra-226	0.00158	0.8	0	0						
										Ra-228	0.00158	0.8	0	0						
										Th-234	0.001777	0.9	0	0.00355						
3		144	12500	PAGE TOTALS					TOTAL ACTIVITY		0.362633		0	TOTAL SNM						

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ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-02
Page 4 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight (~~Tons~~ lbs) [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) (~~uR/hr~~) Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
59	B-12	48	3600	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000817	0.5	0	0.00371	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.090382	55.3	0	0						
										Cs-137	0.009153	5.6	0	0						
										Ra-226	0.001308	0.8	0	0						
										Ra-228	0.001308	0.8	0	0						
										Th-234	0.001471	0.9	0	0.00294						
32	B-12	48	4150	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000942	0.5	0	0.00428	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.104191	55.3	0	0						
										Cs-137	0.010551	5.6	0	0						
										Ra-226	0.001507	0.8	0	0						
										Ra-228	0.001507	0.8	0	0						
										Th-234	0.001696	0.9	0	0.00339						
25	B-12	48	3800	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000863	0.5	0	0.00392	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.095404	55.3	0	0						
										Cs-137	0.009661	5.6	0	0						
										Ra-226	0.00138	0.8	0	0						
										Ra-228	0.00138	0.8	0	0						
										Th-234	0.001553	0.9	0	0.00311						
3		144	11550	PAGE TOTALS					TOTAL ACTIVITY		0.335072		0	TOTAL SNM						

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RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE; 4 CUSTOMER COPY

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-02
Page 5 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
58	B-12	48	4450	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.00101	0.5	0	0.00459	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.111723	55.3	0	0						
										Cs-137	0.011314	5.6	0	0						
										Ra-226	0.001616	0.8	0	0						
										Ra-228	0.001616	0.8	0	0						
										Th-234	0.001818	0.9	0	0.00364						
		48	4450	PAGE TOTALS						TOTAL ACTIVITY	0.129097		0	TOTAL SNM						

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4 CUSTOMER COPY

RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD (#E-100)

[1] GEN. NAME: Fort McClellan Army Depot
ADDRESS: ATZN-CM-AEP, BLDG 3192
CITY/ST/ZIP: Fort McClellan, AL, 36205-5000
CONTACT PERSON: John May
PHONE: 205-848-5737

ENVIROCARE OF UTAH, INC.
46 WEST BROADWAY, SUITE 240
SALT LAKE CITY, UTAH 84101
PHONE: (801)532-1330
FAX: (801)537-7545

[7] PAGE 1 OF 5 RECORD #: 2059-01-03
(USE ON ALL CONTINUATION PAGES)

RAIL CAR/TRAILER #: 348609
Consigned to: ENVIROCARE OF UTAH, INC., CLIVE DISPOSAL SITE
INTERSTATE 80, EXIT 49, WEST OF SALT LAKE, UTAH 84029

[2] BILL DISPOSAL CHARGES TO:
NAME: USAED, Kansas City (MRK-CTH)
P.O./CONT. #: DACW 41-93-D-9001
ADDRESS: 757 Federal BLDG, 601 E. 12th Street
CITY/ST/ZIP: Kansas City, MO, 64106-2896
PHONE: 816-426-6484

[3]
AGENT/BRKR: Allied Technology Group
CONTACT: Timothy Mock
ADDRESS: 99A Midway Lane
CITY/ST/ZIP: Oak Ridge, TN 37830
PHONE: 423-482-3275
SIGN/DATE: 4/8/97

[4]
CARRIER: TSMT SHIP DATE: 4/8/97
CARRIER EPA # (if any): none
ADDRESS: PO Box 113
CITY/ST/ZIP: Joplin, MO, 64802
CONTACT: Tanya
PHONE: 800-846-8768

MANIFEST DOCUMENT NUMBER
(HAZARDOUS WASTE ONLY):

TYPE OF CONTAINER	Container Volume Cu. Ft.	# of Packages	Cu. Ft. Per Container Type
Drums:			
Overpack:			
55:			
30:			
Boxes:			
1st Size:	96	4	384
2nd Size:	48	6	288
3rd Size:			
Rail cars:			
Truck/Trailer:			
Dump:			
Trailer:			
Other:			
Other:			
Other:			
SHIPMENT TOTALS		10	672

[5] TOTAL, EACH CLA # of Pkgs	Weight ~~Tons~~ lbs	PROPER SHIPPING NAME & HAZARD CLASS (per 49 CFR 172.101)	DOT ID NUMBER
10	41200	less than DOT, remediation debris	

TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material ___ is -- OR -- X is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by Envirocare of Utah, Inc., and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in Envirocare of Utah, Inc.

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and Envirocare of Utah, Inc.'s facility license.

D. INDEMNIFICATION: Generator agrees to indemnify Envirocare of Utah, Inc., its officers, employees and agents against all loses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD, or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters

[6] SHIPMENT TOTALS

No. of Cont.	Activity in Millicuries					
10	H-3*	0	Ra-228	0.14964		
	C-14*	0	Th-234	0.01683		
	Tc-99*	0				
Volume	I-129*	0				
Cu. Ft.	U-nat	0.0094				
672	Co-60	1.0344				
	Cs-137	0.1047				
	Ra-226	0.1496			Total	1.46459

TOTAL SNM		
Isotope	Grams	# of Cont.
U-233	0	0
U-235	0	0
Pu	0	0
Total	0	0

PHYSICAL FORM: SOLID
CHEMICAL FORM: OXIDES

* Must show "0" if not present. List additional nuclides and activities in blank spaces provided.

THIS IS TO CERTIFY THAT THE HEREIN-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE D.O.T. REGULATIONS, AND ARE IN COMPLIANCE WITH ALL REQUIREMENTS APPLICABLE AT THE DESIGNATED DISPOSAL SITE, AND THE REQUIREMENTS OF 10 CFR PART 61 AND PART 20.311 OR EQUIVALENT STATE REGULATIONS. IT IS FURTHERED CERTIFIED THAT ALL ITEMS ON THIS RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD HAVE BEEN THOROUGHLY EXAMINED, INCLUDING DIAGRAMS, AND ALL INFORMATION SUBMITTED IS TRUE, CORRECT AND COMPLETE.

Mock — Senior Broker — 4/8/97
Authorized Signature of Customer — Title — Date
Timothy Mock
Printed Name of Authorized Signature

THIS AREA IS FOR ENVIROCARE OF UTAH, INC. USE ONLY

CHECK ALL THAT APPLY TO THIS LOAD: DESCRIBE INADEQUACIES IN COMMENTS

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment.

COMMENTS:

SHIPMENT RECEIVED FOR DISPOSAL
SHIPMENT REJECTED FOR DISPOSAL

INSPECTOR DATE

EC INVOICE #:
INVOICE DATE:
EC CUSTOMER #:

DISTRIBUTION:

White, Yellow, Pink - Must accompany waste in transit.

Green - Must be mailed to & be approved by Envirocare of Utah prior to shipment, unless a copy has been sent by fax.

Gold - Customer Copy.

FORM #E-100 Rev. 6/96

John May

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-03
Page 2 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Kgs)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
1	B-25	96	4400	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000999	0.5	0	0.00454	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.110467	55.3	0	0						
										Cs-137	0.011187	5.6	0	0						
										Ra-226	0.001598	0.8	0	0						
										Ra-228	0.001598	0.8	0	0						
										Th-234	0.001798	0.9	0	0.0036						
9	B-25	96	5400	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001226	0.5	0	0.00557	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.135573	55.3	0	0						
										Cs-137	0.013729	5.6	0	0						
										Ra-226	0.001961	0.8	0	0						
										Ra-228	0.001961	0.8	0	0						
										Th-234	0.002206	0.9	0	0.00441						
54	B-25	96	4900	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001112	0.5	0	0.00506	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.12302	55.3	0	0						
										Cs-137	0.012458	5.6	0	0						
										Ra-226	0.00178	0.8	0	0						
										Ra-228	0.00178	0.8	0	0						
										Th-234	0.002002	0.9	0	0.004						
3		288	14700	PAGE TOTALS						TOTAL ACTIVITY	0.426456		0	TOTAL SNM						

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ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-03
Page 3 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
7	B-25	96	4000	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000908	0.5	0	0.00413	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.100425	55.3	0	0						
										Cs-137	0.01017	5.6	0	0						
										Ra-226	0.001453	0.8	0	0						
										Ra-228	0.001453	0.8	0	0						
										Th-234	0.001634	0.9	0	0.00327						
15	B-12	48	3900	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000885	0.5	0	0.00402	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.097914	55.3	0	0						
										Cs-137	0.009915	5.6	0	0						
										Ra-226	0.001416	0.8	0	0						
										Ra-228	0.001416	0.8	0	0						
										Th-234	0.001594	0.9	0	0.00319						
27	B-12	48	3600	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000817	0.5	0	0.00371	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.090382	55.3	0	0						
										Cs-137	0.009153	5.6	0	0						
										Ra-226	0.001308	0.8	0	0						
										Ra-228	0.001308	0.8	0	0						
										Th-234	0.001471	0.9	0	0.00294						
3		192	11500	PAGE TOTALS						TOTAL ACTIVITY	0.333622		0	TOTAL SNM						

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ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-03
Page 4 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. FL) [10]	Waste Net Weight (~~Tons~~ lbs) [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) (~~mR/hr~~) Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
20	B-12	48	4800	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.00109	0.5	0	0.00495	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.12051	55.3	0	0						
										Cs-137	0.012204	5.6	0	0						
										Ra-226	0.001743	0.8	0	0						
										Ra-228	0.001743	0.8	0	0						
										Th-234	0.001961	0.9	0	0.00392						
13	B-12	48	3000	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000681	0.5	0	0.0031	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.075319	55.3	0	0						
										Cs-137	0.007627	5.6	0	0						
										Ra-226	0.00109	0.8	0	0						
										Ra-228	0.00109	0.8	0	0						
										Th-234	0.001226	0.9	0	0.00245						
16	B-12	48	3800	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000863	0.5	0	0.00392	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.095404	55.3	0	0						
										Cs-137	0.009661	5.6	0	0						
										Ra-226	0.00138	0.8	0	0						
										Ra-228	0.00138	0.8	0	0						
										Th-234	0.001553	0.9	0	0.00311						
3		144	11600	PAGE TOTALS					TOTAL ACTIVITY		0.336523		0	TOTAL SNM						

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ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-03
Page 5 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
18	B-12	48	3400	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000772	0.5	0	0.00351	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.085361	55.3	0	0						
										Cs-137	0.008644	5.6	0	0						
										Ra-226	0.001235	0.8	0	0						
										Ra-228	0.001235	0.8	0	0						
										Th-234	0.001389	0.9	0	0.00278						
		48	3400	PAGE TOTALS						TOTAL ACTIVITY	0.098636		0	TOTAL SNM						

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RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE
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RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD (#E-100)

ENVIROCARE OF UTAH, INC.
46 WEST BROADWAY, SUITE 240
SALT LAKE CITY, UTAH 84101
PHONE: (801)532-1330
FAX: (801)537-7345

[7] PAGE 1 OF 3 RECORD #: 2059-01-04
(USE ON ALL CONTINUATION PAGES)

RAIL CAR/TRAILER #: 848095
Consigned to: ENVIROCARE OF UTAH, INC., CLIVE DISPOSAL SITE
INTERSTATE 80, EXIT 49, WEST OF SALT LAKE, UTAH 84029

[1] GEN. NAME: Fort McClellan Army Depot
ADDRESS: ATZN-CM-AEP, BLDG 3192
CITY/ST/ZIP: Fort McClellan, AL, 36205-5000
CONTACT PERSON: John May
PHONE: 205-848-5737

[2] BILL DISPOSAL CHARGES TO:
NAME: USAED, Kansas City (MRK-CTH)
P.O./CONT. #: DACW 41-93-D-9001
ADDRESS: 757 Federal BLDG, 601 E. 12th Street
CITY/ST/ZIP: Kansas City, MO. 64106-2896
PHONE: 816-426-6484

[3]
AGENT/BRKR: Allied Technology Group
CONTACT: Timothy Mock
ADDRESS: 99A Midway Lane
CITY/ST/ZIP: Oak Ridge, TN 37830
PHONE: 423-482-5275
SIGN/DATE: 4/9/97

[4]
CARRIER: TSMI SHIP DATE: 4/9/97
CARRIER EPA # (if any): none
ADDRESS: PO Box 113
CITY/ST/ZIP: Joplin, MO, 64802
CONTACT: Tanya
PHONE: 800-846-8768

MANIFEST DOCUMENT NUMBER
(HAZARDOUS WASTE ONLY):

TYPE OF CONTAINER	Container Volume Cu. Ft.	# of Packages	Cu. Ft. Per Container Type
Drums:			
Overpack:			
55:			
30:			
Boxes:			
1st Size:	96	4	384
2nd Size:	48	2	96
3rd Size:			
Rail cars:			
Truck/Trailer:			
Dump:			
Trailer:			
Other:			
Other:			
Other:			
SHIPMENT TOTALS		6	480

[5] TOTAL. EACH CLA # of Pkgs	Weight lbs ~~Tons~~	PROPER SHIPPING NAME & HAZARD CLASS (per 49 CFR 172.101)	DOT ID NUMBER
6	25350	less than DOT, remediation debris	

TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material ___ is -- OR -- X is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by Envirocare of Utah, Inc., and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in Envirocare of Utah, Inc.

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and Envirocare of Utah, Inc.'s facility license.

D. INDEMNIFICATION: Generator agrees to indemnify Envirocare of Utah, Inc., its officers, employees and agents against all loses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD, or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such

[6] SHIPMENT TOTALS

No. of Cont.	Activity in Millicuries					
	H-3*	0	Ra-228	0.00921		
6	C-14*	0	Th-234	0.01036		
	Tc-99*	0				
Volume	I-129*	0				
Cu. Ft.	U-nat	0.0058				
480	Co-60	0.6364				
	Cs-137	0.0645				
	Ra-226	0.0092			Total	0.73542

TOTAL SNM		
Isotope	Grams	# of Cont.
U-233	0	0
U-235	0	0
Pu	0	0
Total	0	0

PHYSICAL FORM
SOLID
CHEMICAL FORM
OXIDES

* Must show "0" if not present. List additional nuclides and activities in blank spaces provided.

THIS IS TO CERTIFY THAT THE HEREIN-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE D.O.T. REGULATIONS, AND ARE IN COMPLIANCE WITH ALL REQUIREMENTS APPLICABLE AT THE DESIGNATED DISPOSAL SITE, AND THE REQUIREMENTS OF 10 CFR PART 61 AND PART 20.311 OR EQUIVALENT STATE REGULATIONS. IT IS FURTHER CERTIFIED THAT ALL ITEMS ON THIS RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD HAVE BEEN THOROUGHLY EXAMINED, INCLUDING DIAGRAMS, AND ALL INFORMATION SUBMITTED IS TRUE, CORRECT AND COMPLETE.

Authorized Signature of Customer — Title: Senior Broker — Date: 4/9/97

Timothy Mock
Printed Name of Authorized Signature

THIS AREA IS FOR ENVIROCARE OF UTAH, INC. USE ONLY

CHECK ALL THAT APPLY TO THIS LOAD: DESCRIBE INADEQUACIES IN COMMENTS

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment.

COMMENTS:

SHIPMENT RECEIVED FOR DISPOSAL
SHIPMENT REJECTED FOR DISPOSAL

INSPECTOR DATE

EC INVOICE #:
INVOICE DATE:
EC CUSTOMER #:

DISTRIBUTION:

White, Yellow, Pink - Must accompany waste in transit.

Green - Must be mailed to & be approved by Envirocare of Utah prior to shipment, unless a copy has been sent by fax.

Gold - Customer Copy.

FORM #E-100 Rev. 6/96

John May

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-04
Page 2 of 3

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
8	B-25	96	4900	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001112	0.5	0	0.00506	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.12302	55.3	0	0						
										Cs-137	0.012458	5.6	0	0						
										Ra-226	0.00178	0.8	0	0						
										Ra-228	0.00178	0.8	0	0						
										Th-234	0.002002	0.9	0	0.004						
6	B-25	96	2900	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000658	0.5	0	0.00299	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.072808	55.3	0	0						
										Cs-137	0.007373	5.6	0	0						
										Ra-226	0.001053	0.8	0	0						
										Ra-228	0.001053	0.8	0	0						
										Th-234	0.001185	0.9	0	0.00237						
4	B-25	96	2100	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000477	0.5	0	0.00217	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.052723	55.3	0	0						
										Cs-137	0.005339	5.6	0	0						
										Ra-226	0.000763	0.8	0	0						
										Ra-228	0.000763	0.8	0	0						
										Th-234	0.000858	0.9	0	0.00172						
3		288	9900	PAGE TOTALS						TOTAL ACTIVITY	0.287205		0	TOTAL SNM						

DISTRIBUTION OF COPIES (Please circle copy number):

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5 CUSTOMER COPY

RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE
4 CUSTOMER COPY

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-04
Page 3 of 3

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight (Tons) [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
10	B-25	96	7100	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001612	0.5	0	0.00733	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.178254	55.3	0	0						
										Cs-137	0.018051	5.6	0	0						
										Ra-226	0.002579	0.8	0	0						
										Ra-228	0.002579	0.8	0	0						
										Th-234	0.002901	0.9	0	0.0058						
12	B-12	48	4550	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001033	0.5	0	0.00469	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.114233	55.3	0	0						
										Cs-137	0.011568	5.6	0	0						
										Ra-226	0.001653	0.8	0	0						
										Ra-228	0.001653	0.8	0	0						
										Th-234	0.001859	0.9	0	0.00372						
41	B-12	48	3800	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000863	0.5	0	0.00392	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.095404	55.3	0	0						
										Cs-137	0.009661	5.6	0	0						
										Ra-226	0.00138	0.8	0	0						
										Ra-228	0.00138	0.8	0	0						
										Th-234	0.001553	0.9	0	0.00311						
3		192	15450	PAGE TOTALS						TOTAL ACTIVITY	0.448214		0	TOTAL SNM						

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RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE
4 CUSTOMER COPY

RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD (#E-100)

[1] GEN. NAME: Fort McClellan Army Depot
ADDRESS: ATZN-CM-AEP, BLDG 3192
CITY/ST/ZIP: Fort McClellan, AL, 36205-5000
CONTACT PERSON: John May
PHONE: 205-848-5737

ENVIROCARE OF UTAH, INC.
46 WEST BROADWAY, SUITE 240
SALT LAKE CITY, UTAH 84101
PHONE: (801)532-1330
FAX: (801)537-7345

[7] PAGE 1 OF 5 RECORD #: 2059-01-05
(USE ON ALL CONTINUATION PAGES)

RAIL CAR/TRAILER #: 848055
Consigned to: ENVIROCARE OF UTAH, INC., CLIVE DISPOSAL SITE
INTERSTATE 80, EXIT 49, WEST OF SALT LAKE, UTAH 84029

[2] BILL DISPOSAL CHARGES TO:
NAME: USAED, Kansas City (MRK-CTH)
P.O./CONT. #: DACW 41-93-D-9001
ADDRESS: 757 Federal BLDG, 601 E. 12th Street
CITY/ST/ZIP: Kansas City, MO, 64106-2896
PHONE: 816-426-6484

[3]
AGENT/BRKR: Allied Technology Group
CONTACT: Timothy Mock
ADDRESS: 99A Midway Lane
CITY/ST/ZIP: Oak Ridge, TN 37830
PHONE: 423-482-3275
SIGN/DATE: 4/9/97

[4]
CARRIER: TSMT SHIP DATE: 4/9/97
CARRIER EPA # (if any): none
ADDRESS: PO Box 113
CITY/ST/ZIP: Joplin, MO, 64802
CONTACT: Tanya
PHONE: 800-846-8768

MANIFEST DOCUMENT NUMBER
(HAZARDOUS WASTE ONLY):

TYPE OF CONTAINER	Container Volume Cu. Ft.	# of Packages	Cu. Ft. Per Container Type
Drums:			
Overpack:		—	
55:			
30:			
Boxes:			
1st Size:	96	2	192
2nd Size:	48	8	384
3rd Size:			
Rail cars:			
Truck/Trailer:			
Dump:			
Trailer:			
Other:			
Other:			
Other:			
SHIPMENT TOTALS		10	576

[5] TOTAL, EACH CLASS # of Pkgs	Weight 165 ~~Const~~	PROPER SHIPPING NAME & HAZARD CLASS (per 49 CFR 172.101)	DOT ID NUMBER
10	42175	less than DOT, remediation debris	

TERMS AND CONDITIONS

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[6] SHIPMENT TOTALS

No. of Cont.	Activity in Millicuries					
10	H-3*	0	Ra-228	0.01532		
	C-14*	0	Th-234	0.01723		
	Tc-99*	0				
Volume	I-129*	0				
Cu. Ft.	U-nat	0.0096				
576	Co-60	1.0589				
	Cs-137	0.1072				
	Ra-226	0.0153			Total	1.22352

TOTAL SNM		
Isotope	Grams	# of Cont.
U-233	0	0
U-235	0	0
Pu	0	0
Total	0	0

PHYSICAL FORM
SOLID
CHEMICAL FORM
OXIDES

* Must show "0" if not present. List additional nuclides and activities in blank spaces provided.

THIS IS TO CERTIFY THAT THE HEREIN-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE D.O.T. REGULATIONS, AND ARE IN COMPLIANCE WITH ALL REQUIREMENTS APPLICABLE AT THE DESIGNATED DISPOSAL SITE, AND THE REQUIREMENTS OF 10 CFR PART 61 AND PART 20.311 OR EQUIVALENT STATE REGULATIONS. IT IS FURTHER CERTIFIED THAT ALL ITEMS ON THIS RADIOACTIVE WASTE SHIPMENT & DISPOSAL RECORD HAVE BEEN THOROUGHLY EXAMINED, INCLUDING DIAGRAMS, AND ALL INFORMATION SUBMITTED IS TRUE, CORRECT AND COMPLETE.

Authorized Signature of Customer — Title: Senior Broker — Date: 4/9/97
Timothy Mock
Printed Name of Authorized Signature

THIS AREA IS FOR ENVIROCARE OF UTAH, INC. USE ONLY

CHECK ALL THAT APPLY TO THIS LOAD: DESCRIBE INADEQUACIES IN COMMENTS

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment.

COMMENTS:

SHIPMENT RECEIVED FOR DISPOSAL
SHIPMENT REJECTED FOR DISPOSAL

INSPECTOR DATE

EC INVOICE #:
INVOICE DATE:
EC CUSTOMER #:

DISTRIBUTION:

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Gold - Customer Copy.

FORM #E-100 Rev. 6/96

John May

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-05
Page 2 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
52	B-25	96	5600	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001271	0.5	0	0.00578	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.140595	55.3	0	0						
										Cs-137	0.014237	5.6	0	0						
										Ra-226	0.002034	0.8	0	0						
										Ra-228	0.002034	0.8	0	0						
										Th-234	0.002288	0.9	0	0.00458						
53	B-25	96	6600	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001498	0.5	0	0.00681	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.165701	55.3	0	0						
										Cs-137	0.01678	5.6	0	0						
										Ra-226	0.002397	0.8	0	0						
										Ra-228	0.002397	0.8	0	0						
										Th-234	0.002697	0.9	0	0.00539						
48	B-12	48	3050	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000692	0.5	0	0.00315	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.076574	55.3	0	0						
										Cs-137	0.007754	5.6	0	0						
										Ra-226	0.001108	0.8	0	0						
										Ra-228	0.001108	0.8	0	0						
										Th-234	0.001246	0.9	0	0.00249						
3		240	15250	PAGE TOTALS						TOTAL ACTIVITY	0.442412		0	TOTAL SNM						

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RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE
4 CUSTOMER COPY

ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-05
Page 3 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ LBS [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
37	B-12	48	3950	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000897	0.5	0	0.00408	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.099169	55.3	0	0						
										Cs-137	0.010042	5.6	0	0						
										Ra-226	0.001435	0.8	0	0						
										Ra-228	0.001435	0.8	0	0						
										Th-234	0.001614	0.9	0	0.00323						
23	B-12	48	3550	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000806	0.5	0	0.00366	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.089127	55.3	0	0						
										Cs-137	0.009026	5.6	0	0						
										Ra-226	0.001289	0.8	0	0						
										Ra-228	0.001289	0.8	0	0						
										Th-234	0.001451	0.9	0	0.0029						
50	B-12	48	4050	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000919	0.5	0	0.00418	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.10168	55.3	0	0						
										Cs-137	0.010297	5.6	0	0						
										Ra-226	0.001471	0.8	0	0						
										Ra-228	0.001471	0.8	0	0						
										Th-234	0.001655	0.9	0	0.00331						
3		144	11550	PAGE TOTALS					TOTAL ACTIVITY		0.335072		0	TOTAL SNM						

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ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-05
Page 4 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
51	B-12	48	3750	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000851	0.5	0	0.00387	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.094148	55.3	0	0						
										Cs-137	0.009534	5.6	0	0						
										Ra-226	0.001362	0.8	0	0						
										Ra-228	0.001362	0.8	0	0						
										Th-234	0.001532	0.9	0	0.00306						
40	B-12	48	4050	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000919	0.5	0	0.00418	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.10168	55.3	0	0						
										Cs-137	0.010297	5.6	0	0						
										Ra-226	0.001471	0.8	0	0						
										Ra-228	0.001471	0.8	0	0						
										Th-234	0.001655	0.9	0	0.00331						
17	B-12	48	2750	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.000624	0.5	0	0.00284	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.069042	55.3	0	0						
										Cs-137	0.006992	5.6	0	0						
										Ra-226	0.000999	0.8	0	0						
										Ra-228	0.000999	0.8	0	0						
										Th-234	0.001124	0.9	0	0.00225						
3		144	10550	PAGE TOTALS						TOTAL ACTIVITY	0.306062		0	TOTAL SNM						

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ENVIROCARE OF UTAH, INC. - (#E-100 Continuation Sheet)

Generator Name: Fort McClellan Army Depot
Agent/Broker: Allied Technology Group
Bates #:

Record #: 2059-01-05
Page 5 of 5

Item # [8]	Container Type [9]	Container Volume (Cu. Ft.) [10]	Waste Net Weight ~~(Tons)~~ lbs [11]	Physical Form [12]	Waste Class (A,B,C) [13]	Solidification Agent (if any) [14]	Waste Description [15]	Chemical Form/ Chelating Agent [16]	Chelating Agent % [17]	Radionuclides Present [18]	Total Activity (mCuries) [19]	Radionuclide Conc. (pCi/gram) [20]	Special Nuclear Mat'l (gms) [21]	Source Material (Kg) [22]	Radiation Levels (mR/hr) ~~(uR/hr)~~ Surface [23]	1 Meter [24]	Office Use Only [25]	Transport Index [26]	Fissile Class [27]	D.O.T. Label (49 CFR 172.400) [28]
42	B-12	48	4825	Solid	AU	None	Remediation Debris	Oxide	N/A	U-nat	0.001095	0.5	0	0.00498	<0.1	N/A		None	N/A	Less Than DOT
										Co-60	0.121137	55.3	0	0						
										Cs-137	0.012267	5.6	0	0						
										Ra-226	0.001752	0.8	0	0						
										Ra-228	0.001752	0.8	0	0						
										Th-234	0.001971	0.9	0	0.00394						
1		48	4825	PAGE TOTALS						TOTAL ACTIVITY	0.139976		0	TOTAL SNM						

DISTRIBUTION OF COPIES (Please circle copy number):

TRUCK SHIPMENTS: 1, 2, 3, 4 ACCOMPANIES WASTE
5 CUSTOMER COPY

RAIL SHIPMENTS: 1, 2, 3 MAIL OR EXPRESS TO ENVIROCARE
4 CUSTOMER COPY

RADIOACTIVE WASTE SHIPMENT & DISPOSAL MANIFEST

24 Hour Emergency Response 800-321-2814 Duty Supervisor

NUCLEAR SOURCES & SERVICES, INC.

P.O. BOX 34042 • HOUSTON, TEXAS 77234 • AREA CODE 713/641-0391 FAX NO. 713-641-6153
SHIPPING ADDRESS: 5711 ETHERIDGE / HOUSTON, TX 77087

GENERATOR NAME Ft McClellan ARMY DEPOT CUST.#
ADDRESS ATZM-CM-AEP, BLDG 3192

CITY Fort McClellan STATE AL ZIP 36205-5000
CONTACT John MAY PHONE 205-848-5777

# OF PACKAGES	WEIGHT (Pounds)	PROPER SHIPPING NAME & HAZARD CLASS (PER 49 CFR 172.101)	ID NUMBER
		Radioactive Material, LSA, n.o.s.	UN2912
		Radioactive Material, n.o.s.	UN2982
		Radioactive Material, special form, N.O.S.	UN2974
2	4700	Hazardous Waste, Solid, nos, 9 (RQ LEAD)	NA3077

TX HAZ MANIFEST #00922482

THIS IS TO CERTIFY THAT THE HEREIN-NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION AND ARE IN COMPLIANCE WITH THE REQUIREMENTS APPLICABLE AT THE DESIGNATED DISPOSAL SITE, AND THAT THE MATERIALS ARE CLASSIFIED AND DESCRIBED IN ACCORDANCE WITH THE REQUIREMENTS OF 10CFR, PART 61 AND PART 20.311 OR EQUIVALENT STATE REGULATIONS:

Authorized Signature	Title	Date
Timothy Mock	Senior Broker	4/9/97

ATG FOR USARMY

THE LISTED MATERIAL WAS RECEIVED BY NSSI:

Authorized Signature	Title	Date

NOTE #1 - Waste Description Codes
1. Dry Solid
2. Bulk Liquid
3. Scintillation Vial
4. Biological
5. Other

NOTE #2 - Solidified or Absorbent Media Codes
1. Celite
2. Vermiculite
3. Other

NOTE #3 - NRC Stability Class Code
S - Stable
U - Unstable

ACTIVITY

ACTIVITY TOTALS: ☐ Curies Millicuries ☒	TRITIUM	C-14	Tc-99	I-129	ALL ISOTOPES
	0	0	0	0	0.0365

Drum Number	Container Type	Container Volume (Cu Ft)	Container Weight (Pounds)	Physical Form	Waste Description (See Note #1)	Solidification or Absorbent (See Note #2)	Chemical Form/ Chelating Agent (10CFR20 311)	CHECK Below if<.01% Chelating Agent by Weight	Radionuclides	Activity Curie ☒ mCi	D.O.T. Sub-Type (A_1, A_2, LSA, etc)	Special Nuclear Material (Grams)	Source Material (Kilograms)	Waste Form Class	Stability Class (See Note #3)	Radiation Levels mR/HR: Disposal Container Surface	Radiation Levels mR/HR: Survey Instrument Number	Radiation Levels mR/HR: Disposal Container At 1 Meter	Transport Index	Fissile Class	D.O.T. Label 49CFR 173.444
B-12 Box #30	Steel Box	48	4600	Solid	1	None	OXIDES / NONE	✓	Co-60	0.0095	<DOT	NP	NP	AU	U	<0.1	Ludlum 19 98112		N/A	N/A	Class 9
Drum #1	Steel Drum	7.5	100	Solid	1	None	OXIDES / NONE	✓	Co-60	0.077	<DOT	NP	NP	AU	U	~~<0.1~~ 0.2	Ludlum 19 98112		N/A	N/A	Class 9

DOT Shipping Papers Page 1 of 1

GENERATOR

TEXAS NATURAL RESOURCE
CONSERVATION COMMISSION
P.O. Box 13087
Austin, Texas 78711-3087

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form approved. OMB No. 2050-0039, expires 09/30/95

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. AL 4 2 1 0 0 2 0 5 6 2 — Manifest Document No. 00001

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
FORT McClellan ARMY DEPOT
ATTN: ATZN-CM-AEP, 6106 3192
Fort McClellan, AL 36205-5000

4. Generator's Phone (205) 848-5777

A. State Manifest Document Number: 00922482

B. State Generator's ID: AL 4 2 1 0 0 2 0 5 6 2

5. Transporter 1 Company Name: TSMT

6. US EPA ID Number: M D D 0 0 9 5 0 3 8 9 9 8

C. State Transporter's ID:

D. Transporter's Phone: 800-234-8768

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
NSSI / Recovery Services INC
5711 Etheridge
Houston TX 77087

10. US EPA ID Number: T X 0 9 8 2 5 6 0 2 9 4

G. State Facility's ID: 38669

H. Facility's Phone: 713-641-6155

11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
RQ	a. Hazardous Waste, Solid, nos, 9, NA3077 (RQ Lead)	001	DM	00100	100 lbs	D008 D005 3194
RQ	b. Hazardous Waste, solid, nos 9, NA 3077 (RQ Lead)	001	BX	04600	4600 lbs	D008 D005 3194
	c.					
	d.					

J. Additional Descriptions for Materials Listed Above: Less Than DOT Radioactive

K. Handling Codes for Wastes Listed Above:

15. Special Handling Instructions and Additional Information
E.R.G. # 171 24 HR Emergency Response: Call Duty Supervisor 800-321-2844

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: Timothy P. Mock — Signature: [signature] — Month Day Year: 04 09 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name: Thomas Brunot — Signature: [signature] — Month Day Year: 04 09 97

18. Transporter 2 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Date

Printed/Typed Name — Signature — Month Day Year

TNRCC-0311 (Rev. 07/13/94) White - original Pink-TSD Facility Yellow-Transporter Green-Generator's first copy

CLOSEOUT INSPECTION AND SURVEY PLAN

FORT MCCLELLAN
LICENSE NO. 01-02861-04
DOCKET NO. 030-14759

INSPECTION DATES: March 9-13, 1998

INSPECTORS: Jay Henson
Orysia Masnyk Bailey
Bryan Parker
Brian Smith

PURPOSE OF INSPECTION: Perform confirmatory survey of Buildings 3182 and 3192 and surrounding fenced area to determine if area can be released for unrestricted use, in response to license termination request dated December 1, 1997.

RADIONUCLIDES OF INTEREST: Cobalt 60, Cesium 137, Strontium 90

AFFECTED AREAS: Building 3192 (includes hot cell), Building 3182 (former use areas) fenced outside area

UNAFFECTED AREAS: Building 3182 (former office), Building 3181, ground areas outside of fence

SURVEY INSTRUMENTS:
-ESP-2 with pancake and SPA-6 probes
-Ludlum Model 3 with pancake probe
-Portable multi-channel analyzer
-uR meters

ACTIONS COMPLETED:
-Completed historical review of radionuclide use and decommissioning efforts at site.
-Reviewed licensee scoping plan.
-Reviewed licensee remediation work report.
-Reviewed licensee closeout survey.
-Reviewed licensee verification survey.
-Verified disposition of radwaste.

SURVEY/SAMPLING POINTS: Utilizing licensee's grid system:
Verify background values
Perform 10% confirmatory survey:
- fixed point measurements
- smears
- 1 meter uR measurements
- building scan
- ground walkover
- soil samples
Take biased readings/samples as necessary
Take MCA readings at biased locations and "hotspots'
Obtain last results of groundwater well samples, confirmatory samples if indicated.

RELEASE CRITERIA FOR UNRESTRICTED USE:

- Regulatory Guide 1.86 published in August 1987 titled "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material." These limits are as follows: 5,000 dpm/100 cm^2 average and 15,000 dpm/100 cm^2 maximum for fixed contamination and 1000 dpm/100 cm^2 for removable contamination for beta/gamma emmitters and 1000 dpm/100cm^2 avarage and 3000 dpm/100 cm^2 maximum for fixed contamination and 200 dpm/100 cm^2 for removable contamination for Strontium-90.
- The May 6, 1987 memo concerning Fort McClellan from the Chief, Operations Branch, Division of Fuel Cycle, Medical, Academic and Commercial Use Safety to Region II concerning acceptable concentrations of Cobalt 60 and Cesium 137 in soil were applied as follows. The following was given for external radiation: " The gamma exposure at 1 meter above the ground surface shall not exceed 10 uR/h above background for an area of greater than 30 ft x 30 ft and shall not exceed 20 uR/h above background for any discrete area (i.e. less than 30 ft x 30 ft). The soil concentration levels for Co-60 were 8 pCi/g above background and 15 pCi/g above background for Cs-137.
- NUREG/CR-5849 "Manual for Conducting Radiological Surveys in Support of License Termination,"published in June 1992 " Exposure rates do not exceed background levels by greater than the exposure rate limit, at 1 m from the surface. In occupiable building locations, exposure rates are measured at 1 meter from floor/lower wall surfaces and may be averaged over floor areas, not to exceed the size of a small office (i.e., about 10 m^2.) This manual assumes that maximum exposure rates over any discrete area may not exceed two times the limit, above background."

HISTORICAL SUMMARY:

NRC License No. 01-02861-04 was issued when the Army relocated the Army Chemical School from Fort McClellan in 1973. The license was issued for Co-60 and Cs-137 contamination in Building 3192. The following information was discerned from review of licensee and NRC records and discussion with licensee personnel. Building 3192 previously housed a classroom and hot cell. The hot cell was used to prepare and maintain multi curie Co-60 sources used elsewhere at the base. Cs-137 was purchased in 1956 or 1957 for encapsulation, but source sealing proved unsuccessful and the material was disposed of. In 1963, the Army changed its method of contamination surveying to incorporate the use of wet swipes. At that time Cs-137 contamination was discovered. The hot cell was contaminated in the late 1950s or early 1960s when sources containing powdered Co-60 were segmented. An inadequate ventilation system allowed the contamination to migrate out of the hot cell into the building and the grounds around the building. The underground piping, storage tanks, valve control pit and man way that serviced the hot cell by collecting decontamination water were contaminated from normal operations. The Army had cleaned up the facility to some extent in the early 1970s but residual contamination was left. The license application dated May 1973 stated that exact curiage was unknown but 10 millicuries was estimated, maximum dose rate was 65 mr/hr, removable contamination was found to be up to 550,000 dpm/100 cm^2. Decontamination efforts are delineated in a Memorandum to File dated May 1973, discussing the work conducted from February to March, 1973. Hot spots in the hot cell building were jack hammered and/or vacuumed, the holes were filled

with mortar and painted. The drains were filled in and some of the contaminated soil was removed and the holes filled in. The hot cell building was secured and fenced, warning signs were posted. A Bill of Lading was available for review, it showed that contaminated waste from this area was shipped to the Nuclear Engineering Company in Moorehead Kentucky. The Army Chemical School was moved back to Fort McClellan in 1983. U.S. Army Environmental Health Agency (USAEHA) Radiation Protection Study No. 28-42-012-84 which was issued in 1983 concluded that both Cs-137 and Co-60 contamination was present in Building 3192 and generally spread over the entire area west of the building. Low level soil contamination was detected as deep as 8 feet below the surface and 15 feet down the slope from the underground storage tanks. The building doors were welded shut and the surrounding area fence was moved further out with warning signs posted. The licensee discovered Cs-137 contamination outside of the fenced area to the west in February of 1984 and to the east in June of 1985.

Building 3180 was previously located in this area and has been demolished. USAEHA Industrial Radiation Consultation No. 27-43-EU66-93, dated July 27, 1993 documents the disposition of this area. No NRC closeout was performed. The report concludes that all of the building, concrete floor, and outside concrete pad area had been removed and disposed of in 1989. It references an Army Memorandum for Record, ATZN-CM-AHP, dated August 3, 1989 which reports that beta and gamma measurements were made during demolition and only background levels were detected, At this time a Sr-90 source was found and removed from a storage well near the building. A November 1961 Atomic Energy Commission (AEC) report discusses the "possession of unknown quantities of unknown radioisotopes which emanate significant quantities of radiation" stored in this building. These include " a 5 ton storage container which, with the top partially opened, reads 500 mr/hr at twelve inches; and a storage well approximately 5 to 8 feet deep which reads 500 mr/hr at the surface of the water". The May 1973 Army Memo to File discusses the following decontamination work in and around this building. Hot spots were removed by jack hammer and vacuum. The concrete pad surrounding the building was broken up and disposed of. A new concrete apron was poured. Some decontamination work was performed by a contractor in this building in August and September of 1986. All contents were surveyed and disposed of if contaminated. Some contaminated concrete was scabbled and removed. Final swipes surveys were all less than 1000 dpm/100 cm^2. An Army Memo to File, ATZN-CM-AHP (385-11a) titled Demolition of Building 3180 details the following; demolition work started on July 31, 1989 and was completed on August 3, 1989. During and after the demolition, surveys were performed using the following equipment: Ludlum Model 3 with GM and NaI detectors and an Eberline E-120 with a pancake and pickle probe. No readings were found above background (3.5 Kcpm with the Ludlum and NaI; .05 mR/hr with the E-120 at 1 cm from the surface. The rubble was dumped at the "Stump Dump" on the left side (north east corner) of the Fort McClellan landfill. Army Memorandum for Record ATZN-CM-AHP (385-11) titled Demolition of Control Pit and Removal of Building 3180's Floor documents the removal of the source well, floor base, and valve control pit. On December 7, 1989 the area was surveyed with an Eberline Model 520 with pancake probe and Ludlum Model 3 with NaI probe with no readings above background noted. Concrete samples obtained of rubble showed no radionuclides using a gas flow proportional counter and NaI MCA.

Report No. 27-43-EU66-93 characterizes Building 3181, which has been extensively remodeled and is now the Military Police Building, as follows. Unsealed and sealed sources were used in Room 35, a hood duct may still be inside the building above this room with the ends capped. Another room, Room 36, had only sealed sources occasionally brought into it. The report concludes that records are not available to indicate that a termination survey was ever conducted of Building 3181 and that a duct hood system may still be in place above Room 35. There are no records of an NRC closeout inspection of this building.

Building 3182 now houses the Military Police Museum. Report No. 27-43-EU66-93 states that only two sealed sources were used in Laboratory W, a 106 Curie Cs-137 source and a 1 Curie Co-60 calibrator. However, the May 1973 Army Memo to File indicates levels of fixed contamination within the building. It discusses the work in and around this building to include decontamination of the door frame outside the W lab and the floor adjacent to the door and in the hallway, which was retiled. Some of the tile blocks in the wall were also replaced.

INITIAL REMEDIATION AND INTERIM SURVEYS:

In 1985, Chem Nuclear Systems, Inc. (CNSI) completed a partial remediation of building 3192 and the surrounding area. A review of the Project Report for Fort McClellan prepared by Hilbert Associates, Inc. for Chem-Nuclear Systems Inc. (CNSI) disclosed the following information. From approximately September 2, to November 23, 1985 CNSI performed an initial site investigation. Remediation work was performed in February and August through September of 1986. The initial investigation and subsequent sample analysis confirmed Co-60 and Cs-137 as the "dominant" radionuclides. Soil analysis disclosed the presence of Radium and Thorium and their progeny. Remedial action consisted of excavation and removal of the 1500 and 100 gallon holding tanks in the discharge stream, removal and disposal of loose contaminated materials in the hot cell, removal and disposal of some surrounding contaminated soil, and removal of the HEPA ventilation system servicing the hot cell, On November 25, 1985 CNSI discovered that the source well next to Building 3180 had a strong beta emitter in it which had been enclosed in a steel pipe and capped with concrete, it was thought to be Sr-90. Water samples taken and analyzed by CNS showed the presence of Sr-90 in the bottom of the control pit floor located between the loading dock of Building 3180 and Building 3192. Levels indicated were 28.9 pCi/l.

Radiation Protection Study No. 27-43-0002-88 was conducted March 29 through April 1, 1988. The report contains the following information. It states that the inside of Building 3192 had not been decontaminated so no readings were taken there. Water samples had been periodically taken from monitoring wells installed by the U.S. Geological Survey and from surrounding streams and creeks to monitor any movement of the contamination. All results have shown negative movement. Results of measurements taken with a n ESP-2 with SPA-3 probe indicate that the external radiation levels around building 3192 did not average greater than 10 uR/hr in a 30 ft by 30 ft area and did not exceed 20 uR/hr in any discrete area. A total of 103 soil samples were taken from a depth of 3 to 6 inches, 14 exceeded release limits. External radiation measurements, and some soil samples, exceeded release limits near the southwest end of Building 3182. Hot spots were detected in Building 3180, on

its loading dock and in the control pit. The report concludes that the levels of radioactive material contamination in the soil and the field around Building 3192 exceed release limits.

FINAL REMEDIATION AND SURVEY:

In March of 1995 the Army submitted a decommissioning plan for License No. 01-02861-04. This included the characterization survey of the site performed by Allied Technology Group (ATG)in November of 1994 and the proposed work plan. The isotopes considered were those for which the license was issued, that of Co-60 and Cs-137.

Allied Technology Group, Inc (ATG) was contracted to complete remediation of Building 3192 and 3182 and the surrounding grounds. The results of the remediation and final surveys are contained in a well documented report issued in December of 1996, The following is a summary of that report. The site conditions discovered at the start of work were as follows. Only Co-60 contamination was found in Building 3192, mostly in and around the hot cell. Maximum concentrations were found on the crane components (100,000 dpm/100cm^2). Both co-60 and Cs-137 were detected in the surrounding grounds. Samples from outside the fence indicated that there was no migration of activity. Fixed Cs-137 contamination was found in and near Building 3182. Some level of Sr-90 contamination remained in the area adjacent to the Building 3180 location.

ATG remediation work of Buildings 3192 and 3182 and the surrounding grounds began in November of 1995 and was completed in July of 1996. All removable items were surveyed and released, Building 3192 was stripped to the block structure which was scabbled where necessary. The final release survey was conducted utilizing 1 yard square grids. The area surrounding the east doorway to Building 3181 was remediated, surveys included a angled soil borings beneath the door. Samples of concrete, sludge, and soil were taken from the storm drain northwest of Building 3192 and the sewer in the street of Building 3181, results were below guideline limits. Some detectable contamination was found in the west storm sewer, so it was excavated and disposed of as radioactive waste as was the entry piping. The entire fenced in grounds area was surveyed , four soil samples were taken in every 10 foot square grid, more extensive sampling was done in the areas where contamination was previously detected. One hundred and twelve confirmatory soil samples were taken at the completion of remediation activities. Records review disclosed that appropriate instrumentation was used for these surveys. The report concludes that Buildings 3182 and 3192 and the surrounding areas could be released for unrestricted use.

The close out surveys were conducted in accordance with NUREG/CR 5849. The release criteria used by the licensee were those contained in the May 6, 1987 NRC memorandum concerning Co-60 AND Cs-137 release criteria. These were applied both inside and outside the buildings. Reg Guide 1.86 limits were used for removable and fixed contamination. The isotopes of interest were Cs-137 and Co-60, Sr-90 was not addressed. A memorandum dated September 16, 1997 from AT to the RSO at Fort McClellan provides the following information. Background samples were taken in Building 3181 and ranged from 6 to 8 uR/hr using a Ludlum Model 19 Micro-R meter and 40 to 100 cpm with a Ludlum Model 3 Count Rate meter with pancake probe and 400 cpm with the Model 18 meter with 44-9

probe. Outside area background levels were taken in each quadrant of the site outside of the affected area and ranged from 7 to 13 uR/hr. However, documentation of the surveys list various background levels, most higher than those indicated in the memorandum. The report concludes that Buildings 3182 and 3192 and the surrounding grounds may be released for unrestricted use.

Analyis of fixed contamination smears were below release criteria. Fixed point contamination measurements were at or below background. Gamma measurements at one meter ranged from 0 to 27 uR/hr.

ARMY VERIFICATION SURVEY:

During the week of August 17-22, 1997, the U.S. Army Center for Health Promotion and Preventative Medicine (CHPPM) performed a verification survey to ensure that the final status survey results for Buildings 3182 and 3192 and the surrounding outdoor areas met decontamination criteria for unrestricted use. An NRC inspector was present during this survey. The results of that inspection are contained in NRC Inspection Report No. 01-02861-04/97-01 dated October 7, 1997. The CHHPM report titled Industrial Radiation Survey No. 27-MH-6999-07, Facility Close-out Verification Survey, Fort McClellan, AL was issued on February 6, 1998. The cover page states that the report was provided to allow for timely decommissioning but that it had not been through the CHHPM editorial release process , but tha the findings and recommendations will not change in the final report. On February 17, 1998, the Fort McClellan RSO advised the NRC by telephone that there were two clarifications to the report. He advised that background readings for the survey were performed in Building 3169 and that the release criteria stated in the report for gamma radiation measured at one meter should be changed from "shall not exceed background" to "shall not exceed two times background". The survey was conducted using the procedures developed for the AT remediation project, these were concurrent with NUREG/CR 5849 criteria. Release criteria used were those contained in Reg Guide 1.86 and the May 6, 1987 soil release memorandum. Background soil samples and instrument readings were taken in five outdoor locations away from the affected area. Building material samples were not taken.

Approximately 10% of the AT values were confirmed. The gross alpha readings ranged from -4.0 to 2.8 dpm/100cm^2. avarage background was 1 dpm/100cm^2. Gross beta/gamma readings ranged from -582 to 3966 dpm/100cm^2, avarage background was 157 dpm/100cm^2. Gross gamma readings ranged from -4 to 22 ur/hr, avarage background was 12 uR/hr. Gross alpha activity for removable contamination ranged from .2 (+/-) .2 to 2.8 (+/-) 2.5 dpm/100cm^2. The gross beta activity ranged from -1.9 (+/-) 1.5 to 20.5 (+/-) 7 dpm/100cm^2. Thirty random soil samples were analyzed for beta emitters as a gross screening tool, and further analyzed for Co-60 and Cs-137 by Gamma Spectroscopy. No readings above the release limits

USAEHA-RH Radiation Special Study No. 43-041 dated February 1973 indicates the presence of 11 monitoring wells in this area. Neither the ATG nor the CHPPM reports address these wells.

REQUEST FOR LICENSE TERMINATION:

On December 31, 1997 the licensee requested that License No. 01-02861-04 be terminated. On December 5, 1997 the licensee submitted NRC Form 314,

Certificate of Disposition of Materials, enclosed was a radioactive waste shipment and disposal manifest indicating that the radioactive waste was shipped to NSSI/Recovery Services, Inc. in Houston Texas and to Envirocare of Utah, Inc. On February 27, 1998, the inspector verified that these waste shipments were properly received in a timely fashion.

NRC FORM 304
(8-1997)

U.S. NUCLEAR REGULATORY COMMISSION

SAMPLE RECORD SHEET

LABORATORY -- ☒ REGION I ☐ REGION III

LABORATORY CONTROL NUMBER

☒ ROUTINE ☐ URGENT

DATE REQUIRED: ≈ mid-late April

SAMPLE LOCATION	DATE ANALYSIS BEGAN	DATE COMPLETED	ANALYZED BY	DATE
Ft McClellan, Alabama				

COLLECTED BY	REG	DIVISION	TELEPHONE	CONTACT NOTIFIED	DATE APPROVED	APPROVED BY	DATE APPROVED
Orysia Masnyk Bailey	II	DNMS	404 562 4739				

SAMPLE NO.	DATE	HOUR	DESCRIPTION	ANALYZE FOR	INSTRUMENT USED	QUANTITY USED	DATE COUNTED	COUNT TIME	GROSS COUNT	BACK-GROUND	NET COUNT		RESULT *
01	3/10	4:02	soil (grid M-18)	Cs137/Co60									
02	3-10	4:05	soil (grid S-10)										
03	3-10	4:15	soil (grid P-20)										
04	3-10	4:20	soil (grid K-21)										
05	3-10	4:42	soil (grid H-17)										
06	3-10	4:25	soil (grid K-26)										
07	3-11	11:00	soil (left side museum door)										
08	3-11	11:15	soil (middle museum door)										
09	3-11	11:25	soil (grid Z-18)										
10	3-11	2:30	water (well #2 13 feet deep)										
11	3-11	2:40	water (well #6 17 feet deep)										
12	3-11	2:45	water (well #11 2 feet deep)										
13	3-11	2:50	water (well #7 2 feet deep)										
14	3-11	2:00	clay (not cell trench)										
15	3-11	4:00	dirt (Summerall gate)										

Random uncertainties as reported: ☐ ± 1 σ, ☐ ± 2 σ. Small negative and other results ≤ 2 σ are interpreted as including "zero": or as not detected. If appropriate, estiates of possible systematic errors are reported in parentheses.

This form was designed using InForms
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REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-01 Log No.:

Collection Date/Time: 4:02 pm est 3/10/98

Sample location: GRID POINT M-18

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [✓] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

Processing
- [ ] as received
- [ ] processed
- [ ] other

bulk encontact

Sample size/volume: ≈ 5 lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-02 Log No.:

Collection Date/Time: 3/10/98 ~~4:02pm~~ 4:05 est

Sample location: GRID S-10 (M-28)

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [X] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

Processing
- [ ] as received
- [ ] processed
- [ ] other

bulk on contact

Sample size/volume: ≈5 lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-03 Log No.:

Collection Date/Time: 3-10-98 4:15 est

Sample location: GRID P-20

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling: decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [X] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

6 in on contact

Processing
- [ ] as received
- [ ] processed
- [ ] other

Sample size/volume: ≈5 lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-04 Log No.:

Collection Date/Time: 3-10-98 4:20 est

Sample location: GRID K-21

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Genevette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [X] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

Processing
- [ ] as received
- [ ] processed
- [ ] other

6mR on contact

Sample size/volume: ≈5 lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-05 Log No.:

Collection Date/Time: 3-10-98 4:42 est

Sample location: GRID H-17

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [X] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

Processing
- [ ] as received
- [ ] processed
- [ ] other

6mR on contact

Sample size/volume: ≈ 5 lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-06 Log No.:

Collection Date/Time: 3-10-98 4:25 est

Sample location: GRID K-26

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Genevette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [X] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

6 uR on contact

Processing
- [ ] as received
- [ ] processed
- [ ] other

Sample size/volume: ≈ 5 lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-07 Log No.:

Collection Date/Time: 3-11-98 11:10 am est

Sample location: museum door, left of pipes

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:

[X] Soil, rock, sediment

[ ] Vegetation

[ ] Animal

[ ] Water

[ ] Air

[ ] Other

bulk on contact

Processing

[ ] as received

[ ] processed

[ ] other

Sample size/volume: ≈5 lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum

[X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-08 Log No.:

Collection Date/Time: 3-11-98 11:15am est

Sample location: museum, middle of bldg. door, 5" back

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [X] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

6 uR on contact

Processing
- [ ] as received
- [ ] processed
- [ ] other

Sample size/volume: ≈5lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-09 Log No.:

Collection Date/Time: 3-11-98 11:25 am est

Sample location: GRID Z18

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [X] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

Lead on contact

Processing
- [ ] as received
- [ ] processed
- [ ] other

Sample size/volume: ≈ 5 lbs

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-10 Log No.:

Collection Date/Time: 3-11-98 2:30 est pm

Sample location: Well # 2 13 feet down

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [ ] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [X] Water
- [ ] Air
- [ ] Other

Processing
- [ ] as received
- [ ] processed
- [ ] other

Gold on contact

Sample size/volume: 500 ml

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [ ] Ziploc bag [X] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-10 Log No.:

Collection Date/Time: 3-11-98 2:40 est pm

Sample location: Well # 6 17 feet down

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling: decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [ ] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [X] Water
- [ ] Air
- [ ] Other

6uR on contact

Processing
- [ ] as received
- [ ] processed
- [ ] other

Sample size/volume: 500 ml

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [ ] Ziploc bag [X] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-12 Log No.:

Collection Date/Time: 3-11-98 2:45 pm est

Sample location: well # 11 2 feet down

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling: decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [ ] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [X] Water
- [ ] Air
- [ ] Other

Processing
- [ ] as received
- [ ] processed
- [ ] other

Grab on contact

Sample size/volume: 500 ml

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [ ] Ziploc bag [X] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft McClellan Docket No.: 030-14759

Sample No.: 030-14759-12 SMB13 Log No.:

Collection Date/Time: 3/11/98 2:50 pm est

Sample location: well #7 2 feet down

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Genevette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [ ] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [X] Water
- [ ] Air
- [ ] Other

6 pH on content

Processing
- [ ] as received
- [ ] processed
- [ ] other

Sample size/volume: ≈ 500 ml

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [ ] Ziploc bag [X] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-13 Log No.:

Collection Date/Time: 3-11-98 2:00pm est

Sample location: Hot cell trench

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Generette (EPA)

Purpose of Sampling: decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [ ] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [X] Other clay

Bulk on contact

Processing
- [ ] as received
- [ ] processed
- [ ] other

Sample size/volume: ~50 ml

Additional description:

Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum [ ] Ziploc bag [X] Plastic [ ] Other

Other description:

Remarks:

REGION II SAMPLE RECORD FORM

Licensee: Dept of The Army License No.: 01-02861-04

Location: Ft. McClellan Docket No.: 030-14759

Sample No.: 030-14759-44 OMB15 Log No.:

Collection Date/Time: 3/11/98 4:10 pm est

Sample location: Summerall gate by sewer station

Collected by: Masnyk-Bailey Others present: J Henson, B Parker, B Smith, L Genevette (EPA)

Purpose of Sampling:

decommissioning confirmatory survey

Radionuclides of Interest: Co-60 Cs-137

Sample type:
- [✓] Soil, rock, sediment
- [ ] Vegetation
- [ ] Animal
- [ ] Water
- [ ] Air
- [ ] Other

6 inch on center

Processing
- [ ] as received
- [ ] processed
- [ ] other

Sample size/volume: ≈5 lbs

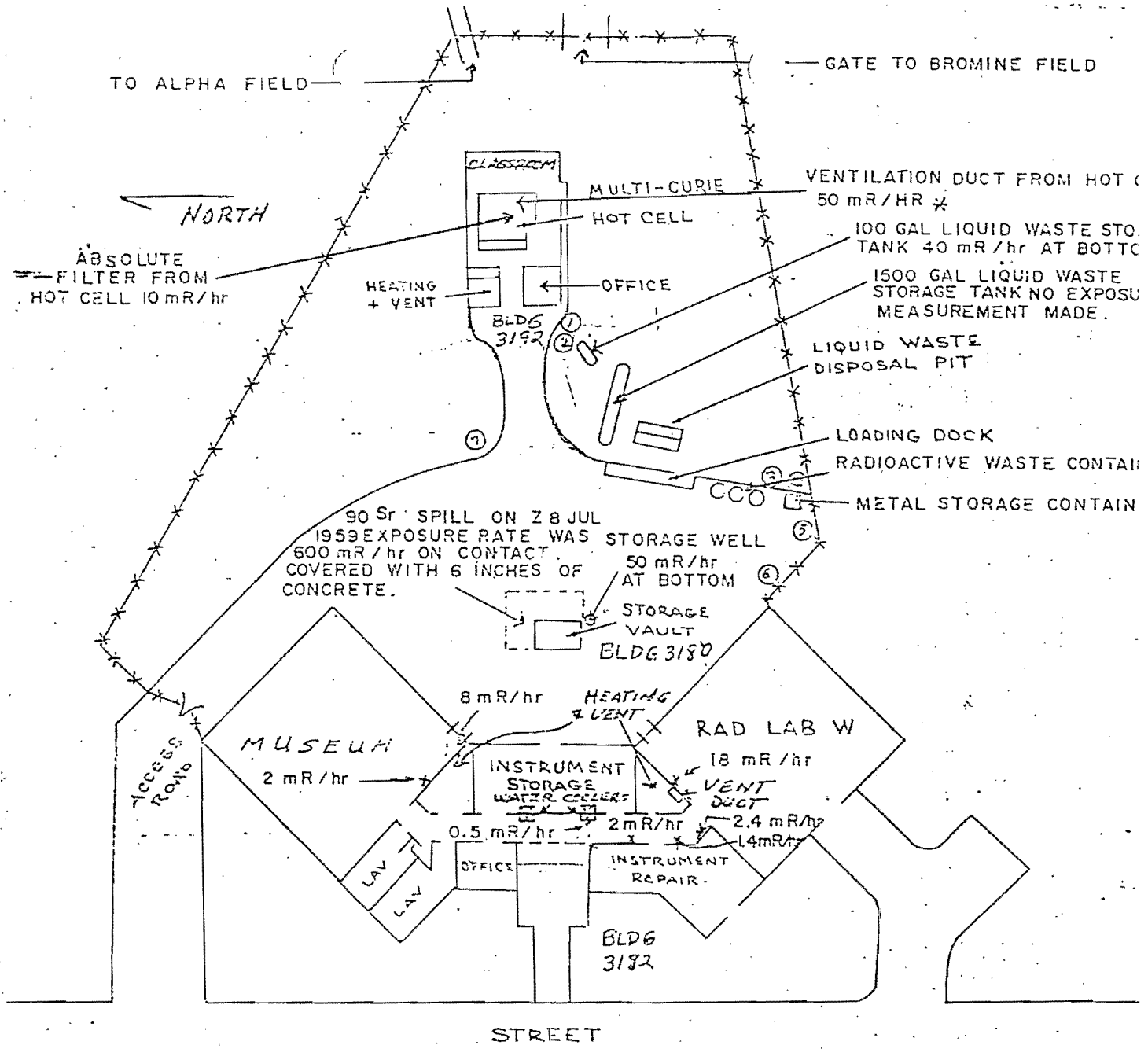
Additional description:

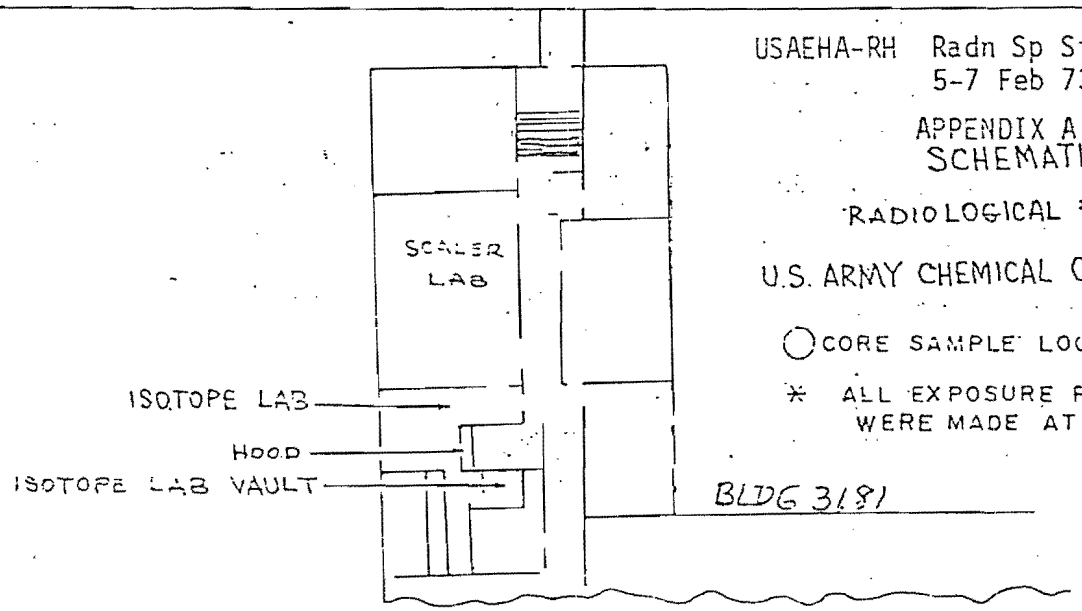
Sample container: [ ] Glass w/teflon liner [ ] Glass w/teflon septum

[X] Ziploc bag [ ] Plastic [ ] Other

Other description:

Remarks:





USAEHA-RH Radn Sp Study No. 43-041
5-7 Feb 73

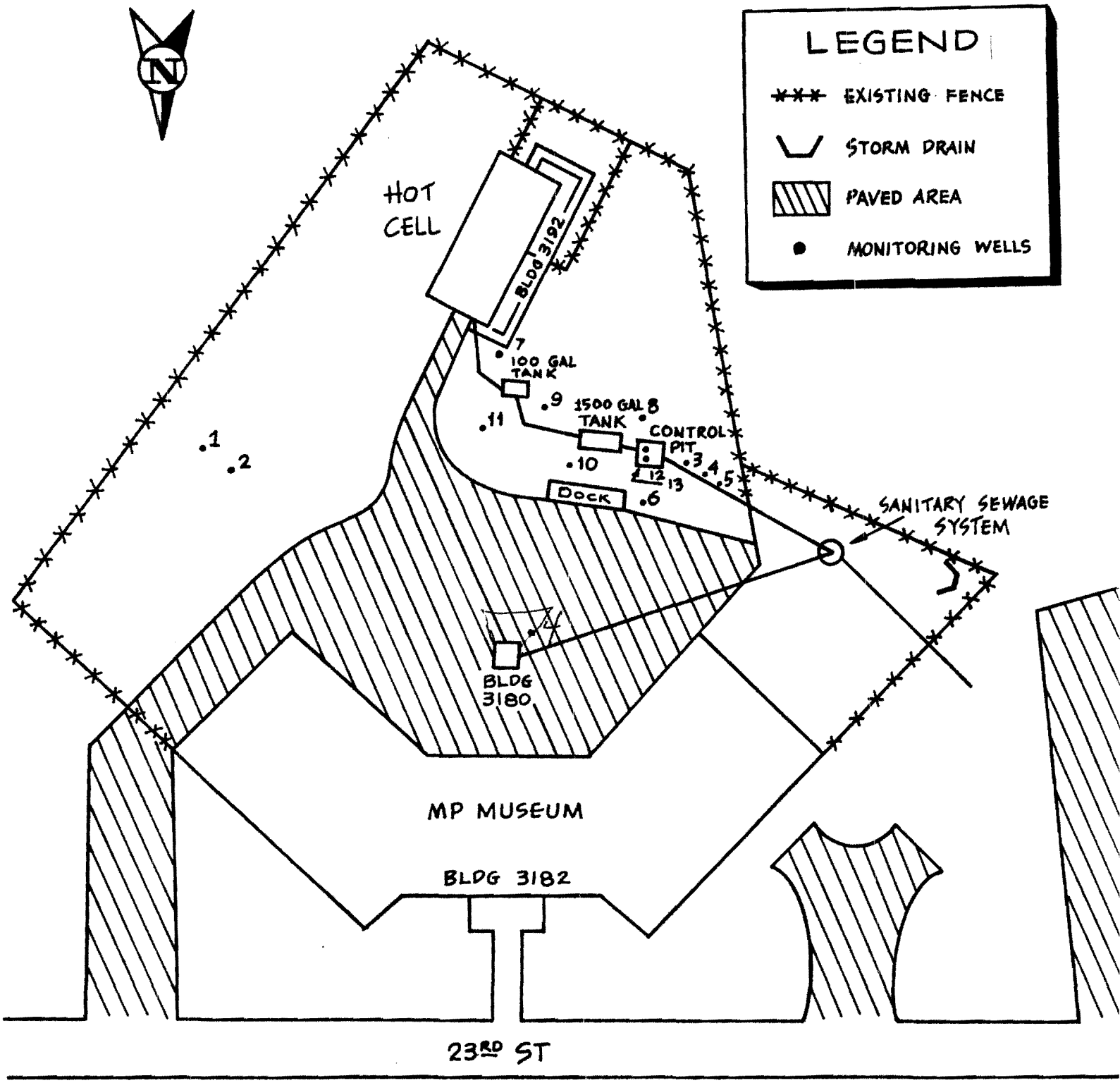
APPENDIX A
SCHEMATIC

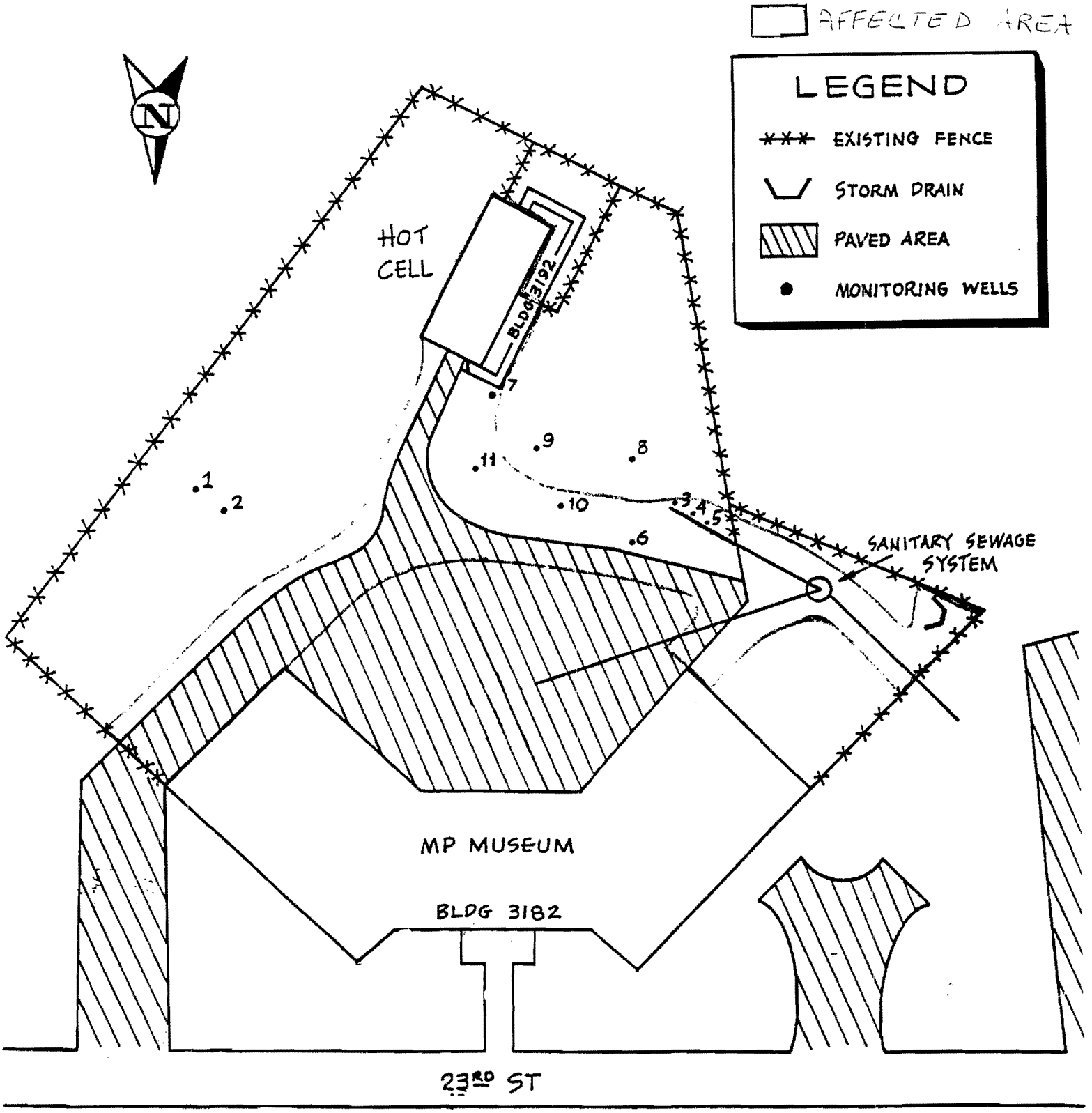
RADIOLOGICAL FACILITIES

U.S. ARMY CHEMICAL CENTER AND SCH

○ CORE SAMPLE LOCATION

* ALL EXPOSURE RATE MEASUREM WERE MADE AT 1 CENTIMETER


LEGEND
EXISTING FENCE
STORM DRAIN
PAVED AREA
MONITORING WELLS
N
HOT CELL
BLDG 3192
7
100 GAL TANK
9
1500 GAL TANK
8
11
CONTROL PIT
10
3
4
5
12
13
6
DOCK
SANITARY SEWAGE SYSTEM
1
2
BLDG 3180
MP MUSEUM
BLDG 3182
23RD ST


AFFECTED AREA
LEGEND
EXISTING FENCE
STORM DRAIN
PAVED AREA
MONITORING WELLS
N
HOT CELL
BLDG 3192
7
9
8
11
10
1
2
3
4
5
6
SANITARY SEWAGE SYSTEM
MP MUSEUM
BLDG 3182
23RD ST

5pCi/g

Exhibit 1

REQUEST FOR TECHNICAL ASSISTANCE (RFTA)

INSPECTOR'S NAME/ORGANIZATION Orysia Masnyk Bailey RII DNMS DATE OF REQUEST 5-15-98

TELEPHONE # 404 562 4739 RFTA# _____ (Leave Blank)

FACILITY NAME AND LOCATION Ft McClellan Alabama DOCKET# 030-14759

PROVIDE APPLICATION DATE 12-1-97 (From Licensee Submittal) TAC#/IR# V24455

FEE RECOVERABLE? ___ YES (Provide TAC number or IR number.)
✓ NO

PLEASE CHECK NEW LICENSE ___ (AMENDMENT) ✓ License termination RENEWAL ___

DESCRIPTION OF WORK TO BE PERFORMED (Include schedule, use separate sheet if needed.)
Analyze two soil samples for Sr 90.

FOR CONFIRMATORY SURVEY REQUESTS, PLEASE ANSWER THE FOLLOWING: N/A

1. HAS PRELIMINARY INFORMATION BEEN RECEIVED FROM LICENSEE? YES ✓ NO ___
1A. HAS THIS INFORMATION BEEN REVIEWED BY NRC AND IS IT ACCEPTABLE? YES ✓ NO ___

(NOTE: ORISE SHOULD BE PROVIDED 30 CALENDAR DAYS TO REVIEW INFORMATION AND PREPARE FOR SURVEY.)

2. IS A PRELIMINARY SITE VISIT NEEDED? ___ WHEN? N/A
3. DATE SURVEY PLAN NEEDED ___
4. DATE SURVEY NEEDED ___

AUTHORIZATION

Orysia Masnyk Bailey 5-15-98 — INSPECTOR DATE

J Blicker 5/15/98 — BRANCH CHIEF DATE

EMERGENCY AUTHORIZATION (SEE INSPECTION CHAPTER 0312 FOR DEFINITION OF ACCEPTABLE EMERGENCY REQUESTS). EXPLAIN, ON SEPARATE SHEET, THE JUSTIFICATION FOR THE EMERGENCY REQUEST. (NOTE THAT THE REQUEST CANNOT BE PROCESSED WITHOUT THIS JUSTIFICATION.)

DIVISION DATE

APPROVAL: HQ TAPM DATE HQ TM DATE

Orysia Masnyk Bailey NRC
RII - ONMS
404 562 4739 fax 404 562-4955

release limits 5pCi/gram

REGION II SAMPLE CHAIN-OF-CUSTODY RECORD

Licensee: Dept of The Army - Ft McClellan License No.: 01-02861-04

Location: Anniston Alabama Docket No.: 030-14759

Sample Type: Soil

Seal Type: _____ Seal No.: _____

SAMPLE NUMBER	SAMPLING LOCATION	DATE	TIME	COLLECTED BY	REMARKS
030-14759-01	Bldg 3192 grounds Army sampling pt #6	4-15-98	11:00am CST	O Masnyk Bailey	
030-14759-02	↓ pt #5	4-15-98	11:30am EST.	O Masnyk Bailey	

U.S. Nuclear Regulatory Commission
Region II

ORYSIA MASNYK BAILEY
Radiation Specialist

61 Forsyth Street, S.W., Suite 23T85
Atlanta, GA 30303-3415

(404) 562-4739
FAX: (404) 562-4955
Emergency: (800) 577-8510

CUSTODY LOG (NAME, DATE, TIME)

(1) FIELD: ACCEPTED BY: Orysia Masnyk Bailey ~~RELINQUISHED~~: 4-15-98

(2) TRANSPORT: ACCEPTED: Orysia Masnyk Bailey RELINQUISHED: mailed to OKISE 5154

(3) LABORATORY: ACCEPTED: _____ RELINQUISHED: _____

(4) OTHER: ACCEPTED: _____ RELINQUISHED: _____

PAGE 1 OF 1

MeV

Cs 137 30y $T\frac{1}{2}$ β 1.176 7% .514
X rays (Barium) .662 85%
E⁻ .624 .65%

Co 60 5.25y $T\frac{1}{2}$ β 1.48 12% .314 99%
γ 1.173 100% 1.332 100%

Sr 90 28y $T\frac{1}{2}$ β .546

Tc 99m 2.12×10^5 y β⁻ .292

So prove Tc 99 + see Co 60

(2) ESP-2 HP-260 parade + SPA-6

Sample Number 36 Sample Id: clrm ew 13ba Sample Type: 1
Wed Mar 18 10:02:10 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 37 Sample Id: clrm floor 139b Sample Type: 1
Wed Mar 18 10:03:18 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 38 Sample Id: entrance floor 4-2-a Sample Type: 1
Wed Mar 18 10:04:25 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 39 Sample Id: clrm nw 8cc Sample Type: 1
Wed Mar 18 10:05:33 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 40 Sample Id: clrm floor 16a Sample Type: 1
Wed Mar 18 10:06:40 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		4
Net CPM	-0.100		2.700
Std Deviation (%)	0.000		100.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	1.21622

Sample Number 31 Sample Id: clrm ww 8ca Sample Type: 1
Wed Mar 18 09:56:34 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 32 Sample Id: clrm sw 7ec Sample Type: 1
Wed Mar 18 09:57:41 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Sample Number 33 Sample Id: clrm ew 11cb Sample Type: 1
Wed Mar 18 09:58:48 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 34 Sample Id: clrm sw 6cc Sample Type: 1
Wed Mar 18 09:59:56 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	1		0
Net CPM	0.900		-1.300
Std Deviation (%)	200.000		0.000
Concentration (pCi/ml)	0.405405	(pCi/ml)	-0.585586

Sample Number 35 Sample Id: clrm wall 13ba Sample Type: 1
Wed Mar 18 10:01:03 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Sample Number 26 Sample Id: foyer sw 7ec Sample Type: 1
Wed Mar 18 09:50:57 1998
Counting Time: 1 min 0 sec

		Alpha Counts		Beta Counts
Gross		0		1
Net CPM		-0.100		-0.300
Std Deviation	(%)	0.000		200.000
Concentration	(pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 27 Sample Id: clrm ceil 15-2-a Sample Type: 1
Wed Mar 18 09:52:04 1998
Counting Time: 1 min 0 sec

		Alpha Counts		Beta Counts
Gross		0		0
Net CPM		-0.100		-1.300
Std Deviation	(%)	0.000		0.000
Concentration	(pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 28 Sample Id: clrm roof 15-9-c Sample Type: 1
Wed Mar 18 09:53:11 1998
Counting Time: 1 min 0 sec

		Alpha Counts		Beta Counts
Gross		0		1
Net CPM		-0.100		-0.300
Std Deviation	(%)	0.000		200.000
Concentration	(pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 29 Sample Id: clrm ew 14ec Sample Type: 1
Wed Mar 18 09:54:19 1998
Counting Time: 1 min 0 sec

		Alpha Counts		Beta Counts
Gross		0		1
Net CPM		-0.100		-0.300
Std Deviation	(%)	0.000		200.000
Concentration	(pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 30 Sample Id: hot cell foyer nw 6a Sample Type: 1
Wed Mar 18 09:55:26 1998
Counting Time: 1 min 0 sec

		Alpha Counts		Beta Counts
Gross		0		1
Net CPM		-0.100		-0.300
Std Deviation	(%)	0.000		200.000
Concentration	(pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 21 Sample Id: clrm ceil 38b Sample Type: 1
Wed Mar 18 09:45:20 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Sample Number 22 Sample Id: foyer east 5a3 Sample Type: 1
Wed Mar 18 09:46:27 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 23 Sample Id: office wall 3c1 Sample Type: 1
Wed Mar 18 09:47:34 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 24 Sample Id: clrm floor 12-7-c Sample Type: 1
Wed Mar 18 09:48:42 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		3
Net CPM	-0.100		1.700
Std Deviation (%)	0.000		115.470
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.765766

Sample Number 25 Sample Id: clrm 4aa Sample Type: 1
Wed Mar 18 09:49:49 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 16 Sample Id: hot cell sw 6ac Sample Type: 1
Wed Mar 18 09:39:43 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 17 Sample Id: hot cell ew 8ba Sample Type: 1
Wed Mar 18 09:40:50 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 18 Sample Id: hot cell nw 7ab Sample Type: 1
Wed Mar 18 09:41:58 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Sample Number 19 Sample Id: hot cell nw 4ac Sample Type: 1
Wed Mar 18 09:43:05 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	1		1
Net CPM	0.900		-0.300
Std Deviation (%)	200.000		200.000
Concentration (pCi/ml)	0.405405	(pCi/ml)	-0.135135

Sample Number 20 Sample Id: hot cell sw 6ac Sample Type: 1
Wed Mar 18 09:44:12 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 11 Sample Id: ext hot cell ww 10ac Sample Type: 1
Wed Mar 18 09:34:06 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 12 Sample Id: ext hot cell ew 9bc Sample Type: 1
Wed Mar 18 09:35:13 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 13 Sample Id: ext hot cell nw 4bb Sample Type: 1
Wed Mar 18 09:36:21 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Sample Number 14 Sample Id: ext hot cell nw 8ca Sample Type: 1
Wed Mar 18 09:37:28 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		6
Net CPM	-0.100		4.700
Std Deviation (%)	0.000		81.650
Concentration (pCi/ml)	-0.045045	(pCi/ml)	2.11712

Sample Number 15 Sample Id: hot cell ww 8bb Sample Type: 1
Wed Mar 18 09:38:35 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 6 Sample Id: hot cell rf 7ac Sample Type: 1
Wed Mar 18 09:28:29 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		3
Net CPM	-0.100		1.700
Std Deviation (%)	0.000		115.470
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.765766

Sample Number 7 Sample Id: hot cell rf 2ca Sample Type: 1
Wed Mar 18 09:29:36 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 8 Sample Id: hot cell roof 4bc Sample Type: 1
Wed Mar 18 09:30:44 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Sample Number 9 Sample Id: ext hot cell ww 8bc Sample Type: 1
Wed Mar 18 09:31:51 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 10 Sample Id: ext hot cell ew 7ac Sample Type: 1
Wed Mar 18 09:32:59 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	1		2
Net CPM	0.900		0.700
Std Deviation (%)	200.000		141.421
Concentration (pCi/ml)	0.405405	(pCi/ml)	0.315315

Sample Number 1 Sample Id: TC99 standard Sample Type: 1
Wed Mar 18 09:22:52 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	4		32651
Net CPM	3.900		32649.699
Std Deviation (%)	100.000		1.107
Concentration (pCi/ml)	1.75676	(pCi/ml)	14707.1

Sample Number 2 Sample Id: Cs 137 standard Sample Type: 1
Wed Mar 18 09:23:59 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	1		3387
Net CPM	0.900		3385.700
Std Deviation (%)	200.000		3.437
Concentration (pCi/ml)	0.405405	(pCi/ml)	1525.09

Sample Number 3 Sample Id: background Sample Type: 1
Wed Mar 18 09:25:07 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Cs137 Co60

Sample Number 4 Sample Id: museum ATG 10 Sample Type: 1
Wed Mar 18 09:26:14 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 5 Sample Id: museum biased rt doo Sample Type: 1
Wed Mar 18 09:27:22 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 16 Sample Id: " Sample Type: 1
Fri Mar 20 09:10:52 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 17 Sample Id: " Sample Type: 1
Fri Mar 20 09:11:59 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		3
Net CPM	-0.100		1.700
Std Deviation (%)	0.000		115.470
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.765766

Sample Number 1 Sample Id: background Sample Type: 1
Fri Mar 20 09:29:05 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 2 Sample Id: tc-99 standard Sample Type: 1
Fri Mar 20 09:30:13 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	17		33023
Net CPM	16.900		33021.699
Std Deviation (%)	48.507		1.101
Concentration (pCi/ml)	7.61261	(pCi/ml)	14874.6

Sample Number 3 Sample Id: Cs-137 standard Sample Type: 1
Fri Mar 20 09:31:20 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	1		3361
Net CPM	0.900		3359.700
Std Deviation (%)	200.000		3.450
Concentration (pCi/ml)	0.405405	(pCi/ml)	1513.38

Sample Number 11 Sample Id: museum lft dr Sample Type: 1
Fri Mar 20 09:05:15 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 12 Sample Id: museum bkdr handle Sample Type: 1
Fri Mar 20 09:06:22 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 13 Sample Id: bldg 3169 bkgrd Sample Type: 1
Fri Mar 20 09:07:29 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	1		2
Net CPM	0.900		0.700
Std Deviation (%)	200.000		141.421
Concentration (pCi/ml)	0.405405	(pCi/ml)	0.315315

Sample Number 14 Sample Id: " Sample Type: 1
Fri Mar 20 09:08:37 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 15 Sample Id: " Sample Type: 1
Fri Mar 20 09:09:44 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 6 Sample Id: clrm ew 8ca Sample Type: 1
Fri Mar 20 08:59:38 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 7 Sample Id: clrm floor 5-9-b Sample Type: 1
Fri Mar 20 09:00:45 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 8 Sample Id: clrm sw 4da Sample Type: 1
Fri Mar 20 09:01:53 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		0
Net CPM	-0.100		-1.300
Std Deviation (%)	0.000		0.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.585586

Sample Number 9 Sample Id: clrm ww 4ec Sample Type: 1
Fri Mar 20 09:03:00 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	1		3
Net CPM	0.900		1.700
Std Deviation (%)	200.000		115.470
Concentration (pCi/ml)	0.405405	(pCi/ml)	0.765766

Sample Number 10 Sample Id: clrm nw 2ac Sample Type: 1
Fri Mar 20 09:04:07 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		1
Net CPM	-0.100		-0.300
Std Deviation (%)	0.000		200.000
Concentration (pCi/ml)	-0.045045	(pCi/ml)	-0.135135

Sample Number 4 Sample Id: clrm ww-1cb Sample Type: 1
Fri Mar 20 08:57:23 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Sample Number 5 Sample Id: clrm 2-9-c Sample Type: 1
Fri Mar 20 08:58:30 1998
Counting Time: 1 min 0 sec

	Alpha Counts		Beta Counts
Gross	0		2
Net CPM	-0.100		0.700
Std Deviation (%)	0.000		141.421
Concentration (pCi/ml)	-0.045045	(pCi/ml)	0.315315

Cs-137 actual

$\frac{3361}{3475}$ = 97% for Cs137 efficiency

TC 99

OK

.051 uCi = $\frac{1}{1}$ 4.505×10^{-7} = dpm = 113,208 = 29% TC99

MDA Cs137 $\frac{2.71 + 4.65\sqrt{1}}{1 \times .97 \times 81}$ = 7.59 dpm

OK

MDA TC99 $\frac{2.71 + 4.65\sqrt{1}}{1 \times .29}$ = 25 dpm

CONFIRMATORY SURVEY RESULTS
(continuation page)

Licensee: Dept Army
Ft McClellan

License No.: 01-02861-04

Docket No.: 030-14759

Inspectors: Henson, Parker, Masnyk Bailey, Smith

Survey Date: 3-11-98

Location	Ins. No.	Gross cpm	Net cpm	Net dpm	dpm / 100 cm²	Ins. No.	Gross μ / m rem/hr	Net μ / m rem/hr
well # 1						2	9	
2							7	
3							10	
4							11	
5							11	
6							8	
7							7	
8							8	
9							9	
10							7	
11							7	

CONFIRMATORY SURVEY RESULTS
(continuation page)

Licensee: Dept Army
Ft McClellan

License No.: 01-02861-04

Docket No.: 030-14759

Inspectors: Henson, Parker, Masnyk Bailey, Smith

Survey Date: 3-11-98

Bldg 3182

Location	Ins. No.	Gross cpm	Net cpm	Net dpm	dpm / 100 cm²	Ins. No.	Gross μ / m rem/hr	Net μ / m rem/hr
BACKGROUND	1	39	3	9	63	2	15	9
		62	26	81	542		14	8
		37	1	3	21		17	11
		54	18	56	375		14	8
unaffected office		71	35	109	729		20	14

CONFIRMATORY SURVEY RESULTS
(continuation page)

Licensee: Dept of The Army
Ft McClellan

License No.: 01-02861-04

Docket No.: 030-14759

Inspectors: Henson, Parker, Masnyk Bailey, Smith

Survey Date: 3-11-98 10:20 est

Location	Ins. No.	Gross cpm	Net cpm	Net dpm	dpm / 100 cm²	Ins. No.	Gross μ / m rem/hr	Net μ / m rem/hr
Backgrounds Bldg 3169	1	23				2	6	
		34				9		
inside room & floor / walls		70			750	8		
		29				6 +++		Average
		25				6		
						6 NE		
		36			≃10-11 at			
					block corners			
back door		61	45	141	938	11		
door left		72	36	113	750	12		
middle		49	13	41	271	11		
museum Bldg 3181								

corner

Bldg 3181 Background μR at 1 meter
20, 20, 20, 20, 20
22, 24

CONFIRMATORY SURVEY RESULTS

Licensee: Dept of the Army
Ft McClellan

License No.: 01-02861-04

Docket No.: 030-14759

Inspectors: Henson, Parker, Masnyk Backy Smith

Survey Date: 3-11-98

Radionuclides of Interest: Cs 137 Co 60

Instrumentation:

Instrument #1		Instrument #2	
Type: ESP-2	Probe: HP-260	Type: uR	Probe:
S/N: 793	S/N:	S/N: 101703	S/N:
NRC#: 26418	NRC#: 026416	NRC#: 043987	NRC#:
Calibration ~~Due~~: 3-24-97	Size (S): 15 cm²	Calibration ~~Due~~: 11-26-97	Size (S): cm²
Efficiency (E): .70 Cs137	Background: 36	Efficiency (E):	Background: Gnd
Check Source: .32 R → Co60	MDA: 271 Cs137 596 R → Co60	Check Source: N/A	MDA:

Survey Results

Location	Ins. No.	Gross cpm	Net cpm	Net dpm	dpm / 100 cm²	Ins. No.	Gross μ / m rem/hr	Net μ / m rem/hr
ATG #10	1	113	77	241	1907	2	19	13
BIAS RIGHT corner door	↓	90	54	169	1125	↓	18	12
ATG #31	↓	104	68	213	1417	↓	22	16
ATG #5	↓	63	27	84	563	↓	22	16
ATG 43	↓	87	51	159	1063	↓	18	12
ATG 41	↓	102	26	81	542	↓	20	14

Smears under carpet

Bldg 3182

CONFIRMATORY SURVEY RESULTS
(continuation page)

Licensee: Dept of The Army
Ft McClellan

License No.: 01-02861-04

Docket No.: 030-14759

Inspectors: Henson, Parker, Musnyk Bailey, Smith

Survey Date: 3/10-93

Location	Ins. No.	Gross cpm	Net cpm	Net dpm	dpm / 100 cm²	Ins. No.	Gross μ / m rem/hr	Net μ / m rem/hr
exterior hot cell-northwall 4-B-B	1	35	<1>		<MDA	2	9	3
↓ ↓ 8-C-A		39	4	13	83		10	4
east wall 9-B-C		40	3	9	63		12	6
↓ 7-A-C		23	<13>		<MDA		12	6
west wall 8-B-C		41	5	16	104		12	6
↓ ↓ 10-A-C		30	<6>		<MDA		12	6
hot cell roof 2-C-A		33	<3>		↓		8	2
4-B-C		41	5	16	104		5	<1>
↓ 7-A-C ~~4-A-B~~		34	<2>		<MDA		7	1
classroom ceiling 3-8-B		45	9	28	188		10	4
↓ 15-9-C		36	0		<MDA		14	8
↓ 15-2-A		40	5	16	104		9	1
east wall 14-E-C		49	13	41	271		15	9

CONFIRMATORY SURVEY RESULTS

Licensee: Dept Army
Ft McClellan

License No.: 01-02861-04

Docket No.: 030-14759

Inspectors: Henson, Parker, Masnyk, Bailey, Smith

Survey Date: 3/12/98

Radionuclides of Interest: Co-60 Cs137

Instrumentation:

Instrument #1 HP-260		Instrument #2	
Type: ESP-2	Probe: ~~Ludlum 3~~	Type: μR	Probe:
S/N: 00793	S/N:	S/N: 101703	S/N:
NRC#: 26418	NRC#: ~~43994~~ 026416	NRC#: 043987	NRC#:
Calibration ~~Due:~~ 3-24-97	Size (S): ~~15~~ cm²	~~Calibration Due:~~ 11-26-97	Size (S): cm²
Efficiency (E): .70 Cs137	Background: 36	Efficiency (E):	Background: 6uR
Check Source: .32 (TC) Co60	MDA: 271 Cs137 596 Ra99 76 Co60	Check Source: NA	MDA:

Survey Results

Location	Ins. No.	Gross cpm	Net cpm	Net dpm	dpm / 100 cm²	Ins. No.	Gross μ / m rem/hr	Net μ / m rem/hr
Hot cell Longwall 7-A-B	1	33	<3>		<MDA	2	8	2
4-A-C		37	1	3	20		8	2
East wall 9-B-A		44	8	25	167		5	<1>
South wall 5-B-A		35	<1>		<MDA		6	0
6-A-C		30	<6>				9	3
West wall 8-B-B		47	11	34	~~+~~ 227		6	0

NRC FORM 304
(8-1997)

U. S. NUCLEAR REGULATORY COMMISSION

SAMPLE RECORD SHEET

LABORATORY -- ☒ REGION I ☐ REGION III

LABORATORY CONTROL NUMBER

☒ ROUTINE ☐ URGENT

DATE REQUIRED

SAMPLE LOCATION	DATE ANALYSIS BEGAN	DATE COMPLETED	ANALYZED BY	DATE

COLLECTED BY	DIVISION	TELEPHONE	CONTACT NOTIFIED	DATE	APPROVED BY	DATE

SAMPLE NO.	DATE	HOUR	DESCRIPTION	ANALYZE FOR	INSTRUMENT USED	QUANTITY USED	DATE COUNTED	COUNT TIME	GROSS COUNT	BACKGROUND	NET COUNT	[illegible]	RESULT *
1					#2								
2					#2								
3					#2								
4					#2								
5					#2								
6					#2								

NRC FORM 304 (8-1997)

* Random uncertainties as reported: ☐ ± 1 σ, ☐ ± 2 σ. Small negative and other results ≤ 2 σ are interpreted as including "zero" or as not detected. If appropriate, estimates of possible systematic errors are reported in parentheses.

INSPECTION

NRC FORM 304A
(8-1997)

U. S. NUCLEAR REGULATORY COMMISSION

SAMPLE RECORD SHEET (Continued)

LABORATORY CONTROL NUMBER: [illegible]

SAMPLE NO.	DATE	HOUR	DESCRIPTION	ANALYZE FOR	INSTRUMENT USED	QUANTITY USED	DATE COUNTED	COUNT TIME	GROSS COUNT	BACK-GROUND	NET COUNT	Radionuclide	RESULT * pCi/L
7	3/11	[illegible]	[illegible]	[illegible]	#2	[illegible]	4/13	[illegible]				[illegible]	[illegible]
			[illegible]									[illegible]	[illegible]
8	3/11	1115	[illegible]	[illegible]	#2	5517	4/13	[illegible]				[illegible]	[illegible]
			[illegible]									[illegible]	[illegible]
9	3/11	1125	[illegible]	[illegible]	#2	1075	4/13	[illegible]				[illegible]	[illegible]
												[illegible]	[illegible]
10	3/11	[illegible]	[illegible]	[illegible]	#2	4775	4/13	[illegible]				[illegible]	[illegible]
												[illegible]	[illegible]
11	3/11	[illegible]	[illegible]	[illegible]	#2	4754	4/13	[illegible]				[illegible]	[illegible]
												[illegible]	[illegible]
12	3/11	[illegible]	[illegible]	[illegible]	#2	4787	4/13	[illegible]				[illegible]	[illegible]
												[illegible]	[illegible]
13	3/11	1152	[illegible]	[illegible]	#2	4752	4/13	[illegible]				[illegible]	[illegible]
												[illegible]	[illegible]

NRC FORM 304A (8-1997)

* Random uncertainties as reported: ☒ ± 1 σ, ☐ ± 2 σ. Small negative and other results ≤ 2 σ are interpreted as including "zero" or as not detected. If appropriate, estimates of possible systematic errors are reported in parentheses.

INSPECTION

NRC FORM 304A
(8-1997)

U. S. NUCLEAR REGULATORY COMMISSION

LABORATORY CONTROL NUMBER

SAMPLE RECORD SHEET (Continued)

SAMPLE NO.	DATE	HOUR	DESCRIPTION	ANALYZE FOR	INSTRUMENT USED	QUANTITY USED	DATE COUNTED	COUNT TIME	GROSS COUNT	BACK-GROUND	NET COUNT	[illegible]	RESULT *
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	#2	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]
			[illegible]									[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	#2	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]
												[illegible]	[illegible]

NRC FORM 304A (8-1997)

* Random uncertainties as reported: ☒ ± 1 σ, ☐ ± 2 σ. Small negative and other results ≤ 2 σ are interpreted as including "zero" or as not detected. If appropriate, estimates of possible systematic errors are reported in parentheses.

INSPECTION

Region I FORM 303
(8-88)

U.S. NUCLEAR REGULATORY COMMISSION

REQUEST FOR ANALYSIS

Region I Laboratory

LABORATORY USE ONLY

CONTROL NUMBER

SAMPLE LOCATION (LICENSEE)	LICENSE NO.	DOCKET NO.

SAMPLES SUBMITTED

#(TOTAL)	TYPE	VOLUME	WEIGHT

DATE SAMPLES SUBMITTED	PRIORITY
	ROUTINE
	URGENT ***

SAMPLE COLLECTION INTERVAL

	MONTH	DAY	YEAR	TIME
START				
STOP				

INSPECTOR RESPONSIBLE | PHONE EXT.

	ANALYSIS TO BE PERFORMED	LIST DESIRED LLD *(Optional)*		OTHER TYPE OF ANALYSIS *(Specify)*	LIST DESIRED LLD *(Optional)*
	GROSS ALPHA				
	GROSS BETA				
	GAMMA SPEC				
	TRITIUM				
	CARBON-14				
	IODINE-125				

REMARKS

NOTE: Samples will be discarded after analysis unless reasons are noted above in Remarks.

***** FOR URGENT USE ONLY**— Signature Blocks below must be filled out by the Inspector's appropriate Section Chief and by the Chief, Effluents Radiation Protection Section BEFORE submitting this form to the Region I Laboratory.

SIGNATURE – APPROPRIATE NUCLEAR MATERIALS SAFETY SECTION CHIEF | DATE

SIGNATURE – CHIEF, EFFLUENTS RADIATION PROTECTION SECTION | DATE

(pink) 2. INSPECTOR

NRC FORM 304
(8-1997)

U.S. NUCLEAR REGULATORY COMMISSION

SAMPLE RECORD SHEET

LABORATORY -- ☒ REGION I ☐ REGION III

LABORATORY CONTROL NUMBER

☒ ROUTINE ☐ URGENT

DATE REQUIRED: ≈ mid-late April

SAMPLE LOCATION	DATE ANALYSIS BEGAN	DATE COMPLETED	ANALYZED BY	DATE
Ft McClellan, Alabama				

COLLECTED BY	REG	DIVISION	TELEPHONE	CONTACT NOTIFIED	DATE APPROVED	APPROVED BY	DATE APPROVED
Orysia Masnyk Bailey	II	DNMS	404 562 4739				

	SAMPLE NO.	DATE	HOUR	DESCRIPTION	ANALYZE FOR	INSTRUMENT USED	QUANTITY USED	DATE COUNTED	COUNT TIME	GROSS COUNT	BACKGROUND	NET COUNT		RESULT *
5/14/98 X	01	3/10	4:02	soil (grid m-18) X	Cs137/Co60									
	02	3-10	4:05	soil (grid s-10) M-28										
	~~03~~	~~3-10~~	~~4:15~~	~~soil (grid p-20) X~~										
	~~04~~	~~3-10~~	~~4:20~~	~~soil (grid K-21) X~~										
	~~05~~	~~3-10~~	~~4:42~~	~~soil (grid H-17) X~~										
	~~06~~	~~3-10~~	~~4:25~~	~~soil (grid K-26) X~~										
X	07	3-11	11:00	soil (left side museum door) X										
	~~08~~	~~3-11~~	~~11:15~~	~~soil (middle museum door) X~~										
	~~09~~	~~3-11~~	~~11:25~~	~~soil (grid Z-18) X~~										
	10	3-11	2:30	water (well #2 13 feet deep) X										
	11	3-11	2:40	water (well # 6 17 feet deep) X										
	12	3-11	2:45	water (well # 11 2 feet deep) X										
	13	3-11	2:50	water (well #7 2 feet deep) X										
	~~14~~	~~3-11~~	~~2:00~~	~~clay (not cell trench) X~~										
X	15	3-11	4:00	dirt (Summerall gate) X										

Random uncertainties as reported: ☐ ±1 σ, ☐ ±2 σ. Small negative and other results ≤ 2 σ are interpreted as including "zero": or as not detected. If appropriate, estiates of possible systematic errors are reported in parentheses.

This form was designed using InForms
PRINTED ON RECYCLED PAPER

Bldg 3180 →

Soil borings → Core samples →

will take core samples —
from Bldg 3180 location + apron on
parking deck →

15th April → Core sampling →

Warns Bldg 3181 →

Straight up + out roof

Warning on the Engineer's Office to contact HHP.

Mound
Structures →
Pedestrian bridge — contacting for funding
Usa recently results —
Army Guard Center Pilsen Restroom Park
Data base — that to be funded
bottom Army — relative health risk →
low x, get funding
Army Industrial Operation Command
nonlinear Rad waste clean up —

Commodities — plan →
~~Bldg~~ → Pelham Range →

---

sanitary water wells → Range L downstream gate

Lisa Kingsberry - SRAC coordinator
John May RSC
Sd Agnons -
Mayn Johnson Channel School - Environmental Office Channel School

Terry Williams - State Alan

Tom Decker
Joy Hess

- Basics
pot cell →
analysis pot cell →
— Eberline
Program ≈
food analysis TMD Ebert 4 web ⟲
Spectral analysis of building materials

3 Thomas windows in room
4 filled in pipes →

01-02861-04 - decom lic
Bldg 3182 - MP museum
3192 Hot cell
surrounding fenced areas
3180
license transfer request
12-1-97

Brian Parker - decom program
Brian Smith - NMSS HQ
Joy Hersom - Senior Inspector
Lloyd Genoette EPA
Terry Williams - Ala

98-01

closeout

→ confirmatory survey of 1020 - 27-MH-6999-97
US Army Center for Health Promotion + Preventive Medicine's
1020 verification survey conducted Aug 17-22, 1997
Chemnuclear 1985 - 1996
→ ATG remediation + close out survey

Will review results of this survey + correlate to previous survey + finding's conclusion -

(1) 2 questions remaining - background 3169 (6) vs ATG (17) (H-2)
NOT GIVEN
vs 10 in common report
~~2 x release~~ 2 x background
(VS) 5% above background release limits E-3
Reg Guide 1.86

(2). 4 filled in pipes in hot cell

BACKGROUND
VITAL
Bldg 3181?

current license - current location - previous locations after move to box + Bldg 3181 → capped. HRS

previously licensed locations -

Inspection done Aug 1997 - report issued 10-7-97
asked for more info

previous locations - Bldg 3180 spot
SA 90 spill
- Bldg 3181 capped HVAC

- Hallerock Creek + Iron Mtn - also info provided
Feb March 1995 may close out based on
review + corp survey

- Pelham Range - burial mound

"your plan to resolve the issue of the buried mound at
Pelham Range"

Jan 8-13, 1996 27-MH-0987-RD-96 - plan

6-8 burial Cs137, Co-60 pos SA 90 | need report
groundwater + soil cont

report issued
2-5-98

conclusions
elevated Co60 + Cs137 in soil
sub surface survey in some areas 1000 X assoc background

Recommend
remediate
excavate, remove, + properly dispose of

SGT Aperaus, Radiation Protection Specialist
Col Uyesugi, Asst Commandant, Army Chemical School
SGT Desumbia, Radiation Protection Specialist

~~Lisa Gooseberry, BRAC coordinator~~

Army Chem Agency
Rock Island Is.
pollen man up + out to burial site. →

LOCATION/GRID	FIXED POINT MEASUREMENT (dpm/100 cm)	MREM/HR AT ONE METER	WIPE TEST BETA
Background Building 3169, hallway	750	8 (gross)	<MDA
Background Building 3169, hallway	<MDA	6 (gross)	<MDA
Background Building 3169, hallway	<MDA	6 (gross)	<MDA
Building 3182, unaffected offices	63	9 (gross)	N/A
Building 3182, unaffected offices	542	8 (gross)	N/A
Building 3182, unaffected offices	21	11 (gross)	N/A
Building 3182, unaffected offices	375	8 (gross)	N/A
Building 3182, unaffected offices	729	14 (gross)	N/A
Summerall Gate	N/A	10 (gross)	N/A
Background Outdoors	N/A	10 (gross)	N/A
Background Outdoors	N/A	10 (gross)	N/A
Background Outdoors	N/A	10 (gross)	N/A
Background Outdoors	N/A	10 (gross)	N/A
Right of Well Post 1	N/A	-1	N/A
Right of Well Post 2	N/A	-3	N/A
Right of Well Post 3	N/A	0	N/A
Right of Well Post 4	N/A	1	N/A
Right of Well Post 5	N/A	1	N/A
Right of Well Post 6	N/A	-2	N/A
Right of Well Post 7	N/A	-3	N/A
Right of Well Post 8	N/A	-2	N/A
Right of Well Post 9	N/A	-1	N/A
Right of Well Post 10	N/A	-3	N/A
Right of Well Post 11	N/A	-3	N/A

ALL READINGS EXCEPT WHERE INDICATED ARE NET READINGS ABOVE BACKGROUND

LOCATION/GRID	FIXED POINT MEASUREMENT (dpm/100 cm)	MREM/HR AT ONE METER	WIPE TEST BETA
Building 3192, east wall/8-B-A	167	5	<MDA
Building 3192, south wall/5-B-A	<MDA	6	<MDA
Building 3192, south wall/6-A-C	<MDA	9	<MDA
Building 3192, west wall/8-B-B	227	6	<MDA
Building 3192, north wall/4-B-B	<MDA	3	<MDA
Building 3192, north wall/8-C-A	83	4	<MDA
Building 3192, east wall/9-B-C	63	6	<MDA
Building 3192, east wall/7-A-C	<MDA	6	<MDA
Building 3192, west wall/8-B-C	104	6	<MDA
Building 3192, west wall/10-A-C	<MDA	6	<MDA
Building 3192, hot cell roof/2-C-A	<MDA	2	<MDA
Building 3192, hot cell roof/4-B-C	104	<1>	<MDA
Building 3192, hot cell roof/7-A-C	<MDA	1	<MDA
Building 3192, classroom ceiling/3-8-B	188	4	<MDA
Building 3192, classroom ceiling/15-9-C	<MDA	8	<MDA
Building 3192, classroom ceiling/15-2-A	104	1	<MDA
Building 3192, east wall/14-E-C	271	9	<MDA
Building 3182, ATG #10	1907	13	<MDA
Building 3182, right corner of door	1125	12	<MDA
Building 3182, ATG #31	1417	16	<MDA
Building 3182, ATG #5	563	16	<MDA
Building 3182, ATG #43	1063	12	<MDA
Building 3182, ATG #41	542	14	<MDA
Building 3182, door right	938	11	<MDA
Building 3182, door left	750	12	<MDA
Building 3182, door middle	271	11	<MDA
Background Building 3169, hallway	<MDA	2 (gross)	<MDA
Background Building 3169, hallway	<MDA	9 (gross)	<MDA

CONFIRMATORY SURVEY RESULTS
DEPARTMENT OF THE ARMY - FORT MCCLELLAN
MARCH 9-12, 1998

LOCATION/GRID	FIXED POINT MEASUREMENT (dpm/100 cm)	MREM/HR AT ONE METER	WIPE TEST BETA
Building 3192, north wall/6-A-A	1104	7	<MDA
Building 3192, east wall/5-A-3	667	12	<MDA
Building 3192, south wall/7-A-2	<MDA	0	<MDA
Building 3192, east wall/3-C-1	458	7	<MDA
Building 3192, entrance floor/4-A-2	417	5	<MDA
Building 3192, east wall/8-C-A	1333	8	<MDA
Building 3192, east wall/4-A-A	1042	8	<MDA
Building 3192, east wall/13-B-A	353	10	<MDA
Building 3192, south wall/4-D-A	1083	9	<MDA
Building 3192, south wall/6-C-C	563	10	<MDA
Building 3192, south wall/7-E-C	125	9	<MDA
Building 3192, west wall/13-B-A	979	14	<MDA
Building 3192, west wall/11-C-B	1270	9	<MDA
Building 3192, floor/13-B-9	542	14	<MDA
Building 3192, floor/12-7-C	688	11	<MDA
Building 3192, west wall/8-C-A	1250	11	<MDA
Building 3192, west wall/4-C-C	271	5	<MDA
Building 3192, west wall/1-C-B	667	5	<MDA
Building 3192, floor/5-9-B	500	9	<MDA
Building 3192, north wall/8-C-C	<MDA	3	<MDA
Building 3192, north wall/5-C-B	146	1	<MDA
Building 3192, north wall/2-A-C	<MDA	2	<MDA
Building 3192, floor/1-6-A	125	1	<MDA
Building 3192, floor/2-9-C	<MDA	12	<MDA
Building 3192, north wall/7-A-B	<MDA	2	<MDA
Building 3192, north wall/4-A-C	20	8	<MDA

CONFIRMATORY SURVEY RESULTS

Licensee: Dept of The Army
Ft McClellan

License No.: 01-02861-04

Docket No.: 030-14759

Inspectors: Henson, Parker, Masnyk Barley, Smith

Survey Date: March 9, 1998

Radionuclides of Interest: Co 60 Cs 137 Sr 90

Instrumentation:

Instrument #1		Instrument #2	
Type: ESP-2	Probe: HP-260	Type: uR meter	Probe: N/A
S/N: 793	S/N:	S/N:	S/N:
NRC#: 26418	NRC#: 026416	NRC#: 043987	NRC#:
Calibration ~~Due:~~ 3-24-97	Size (S): 15 cm²	Calibration ~~Due:~~ 11/26/97	Size (S): cm²
Efficiency (E): .70 Cs137	Background: 36	Efficiency (E):	Background: 6uR
Check Source: .32 Ra99 → Co60	MDA: 271 Cs137 596 Ra99-Co60	Check Source:	MDA:

Survey Results

Location	Ins. No.	Gross cpm	Net cpm	Net dpm	dpm / 100 cm²	Ins. No.	Gross μ / m rem/hr	Net μ / m rem/hr
Hot cell foyer, North wall, 6-A-A (Grid pt)	1	89	53	166	1104	2	13	7
↓ east wall, 5-A-3		68	32	100	667		18	12
↓ south wall, 7-A-2		28	<87		<MDA		6	0
office east wall, 3-C-1		58	22	69	458		13	7
entrance floor, 4-2-A		56	20	63	417		11	5
classroom, east wall 8-C-A		100	64	200	1333		14	8
↓ ↓ 4-A-A		86	50	156	1042		14	8

CONFIRMATORY SURVEY RESULTS
(continuation page)

Licensee: Dept of the Army, Ft McClellan

License No.: 04-02861-04

Docket No.: 030-14759

Inspectors: Henson, Parker, Masnyk, Bailey, Smith

Survey Date: March 9, 1998

Location	Ins. No.	Gross cpm	Net cpm	Net dpm	dpm / 100 cm²	Ins. No.	Gross μ / m rem/hr	Net μ / m rem/hr
classroom east wall 13-B-A	1	72	36	113	353	2	16	10
south wall 4-D-A		88	52	163	1083		15	9
6-C-C		63	27	84	563		16	10
7-E-C		42	6	19	125		15	9
west wall 13-B-A		83	47	147	979		20	14
11-C-B		97	61	191	1270		15	9
floor 13-9-B		62	26	81	542		20	14
12-7-C		69	33	103	688		17	11
west wall 8-C-A		96	60	188	1250		17	11
4-C-C		49	13	41	271		11	5
1-C-B		68	32	100	667		11	5
floor 5-9-B		60	24	75	500		15	9
north wall 8-C-C		24	<12>		<MDA		9	3
5-C-B		43	7	22	146		7	1
2-A-C		30	<6>		<MDA		8	2
floor 1-6-A		42	6	19	125		7	1
2-9-C		34	<2>		<MDA		18	12

ESP-2 02793
+HP-260

Cs-137

Scaler

$$MDA = \frac{2.71 + 4.65\sqrt{Br \cdot t}}{t \cdot E \cdot A/100}$$

$$= \frac{2.71 + 4.65\sqrt{34}}{1 \cdot .70 \times .15} = \frac{29.82}{.11} = 271 \text{ dpm}$$

Sr-90

$$\frac{29.82}{.08} = 373 \text{ dpm}$$

Tc 99

$$\frac{29.82}{.05} = 596 \text{ dpm}$$

Ratemeter

Cs-137

$$MDA = \frac{4.65\sqrt{Br/2 \cdot t}}{E \cdot \frac{A}{100}} = \frac{4.65\sqrt{.027}}{.11} = 7 \text{ dpm}$$

Sr 90

$$\frac{.76}{.54 \cdot .15} = \frac{.76}{.08} = 9.5 \text{ dpm}$$

Tc 99

$$\frac{.76}{.32 \times .15} = \frac{.76}{.05} = 15 \text{ dpm}$$

ESP2 00793
+ HP260

Scanning

Cs137 $MDA = \frac{3 \cdot BR}{E \cdot (A/100)} = \frac{102}{.11} = 12$ dpm

Sr90 $\frac{102}{.08} = 1275$ dpm

Tc99 $\frac{102}{.04} = 2550$ dpm

Release Criteria

Sr90 max $\frac{300}{100} \times 15 \times .54 + 34 = 277$ cpm

AV $\frac{100}{100} \times 15 \times .54 + 34 = 115$

Co60 max $\frac{15{,}000}{100} \times 15 \times .32 + 34 = 754$ cpm

Av $\frac{5{,}000}{100} \times 15 \times .32 + 34 = 274$ cpm

DAILY SURVEY INSTRUMENT PERFORMANCE WORKSHEET

(Page ___ of ___)

License No.: 01-02861-04	Survey Date(s): March 9-13, 1998

Survey Instrument

Type: ESP-2	Probe: HP-260
Serial No.: 00793	Serial No.: NRC 026416

Daily Results (continued)

Date	Time	Location	Source	Gross	Background	Net	Acceptable
3-9-98	12:15 est	3192 entrance apron	Cs137	160,000	40		
3-9-98	4:10 pm	EST		159,000			
3-10-98	9:30 est			[illegible]			
3-10-98	5:00 est			142,000			
3-11-98	8:35 est			159,000			

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET

Inspector: HENSON PARKER MASNYK-BAILEY	Date: 3-4-98
Licensee: Dept of The Army	Location: Fort McClellan
License No.: 01-02861-04	Docket No.: 030-14759
Report No.: 98-01	Survey Date(s): March 9-13, 98

Isotopes of Interest: Co-60, Cs-137, Sr 90

Survey Instrument

Type: ESP-2	Probe: HP-260
Serial No.: 00793	Serial No.: N/A
NRC Tag No.: 26418	NRC Tag No.: ~~026416~~ 026416
Calibration Date: 3-24-97	Size (S): 15 cm²

Background Determination (B)

Units: (cpm) 34 mrem/hr _____ μRem/hr _____

(1) 34	(2) 35	(3) 34	(4) 36	(5) 30	Avg.: 34

Reference Source Measurements

Source Serial No.	NRC Tag No.	Isotope	Current Activity (A) (dpm)	Meter Reading (M) (cpm or dose rate)	Efficiency (E)
1888	013414	Cs137 β	3475	2450	70%
NEN	N/A	Sr 90	44,844	24,300	54%
1126/87	027981	Tc 99	14,300	4,600	32%
NA	NRC 01 014	Cs137	~~16,038,000~~ 00/s	159,000	check source
			10,944,600		

Efficiency (E) = (M-B)/A

β⁻ 292 kev = Co 60 β 314 kev

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET
(Page 2)

Field Check Source Measurements Instrument Serial No.: 06793 Probe Serial No.: NRC 026416

Source SN	NRC Tag No.	Isotope	Nominal Activity (dpm)	Meter Reading (cpm or dose rate)
(1) NRC 01014	N/A	Cs 137	16,038,000	159,000
(2)				
(3)				
(4)				

Surface Activity Measurement Minimum Detectable Activity

MDA = activity level in dpm/100 cm^2
t = counting time in minutes
E = detector efficiency in counts/disintegration
* = multiply

B_R = background rate in cpm
t_c = meter time constant in minutes
A = active probe area in cm^2

Scaler Mode:

$$MDA = \frac{2.71 + 4.65\sqrt{B_R * t}}{t * E * (A/100)}$$

Ratemeter Mode:

$$MDA = \frac{4.65\sqrt{B_R / 2 * t_c}}{E * (A/100)}$$

Scanning Mode:

$$MDA = \frac{3 * B_R}{E * (A/100)}$$

Mode	MDA dpm
Scaler	271 → Cs-137 373 → Sr-90 596 → Tc99
Ratemeter	7 - Cs 137 9.5 - Sr90 15 → Tc99
Scanning	10 → Cs137 1275 → Sr90 2530 → Tc99

Release Criteria Comparison

Maximum Release Criteria for Isotope of Interest (X): 5,000 dpm/100 cm^2

Instrument Reading That Equals Maximum Release Criteria: [(X/100) x S x E] + B

Cs137

= [(15,000 /100) x 15 x .70] + ~~[illegible]~~ 34 = ~~[illegible]~~ 864 cpm 1609

Average Release Criteria for Isotope of Interest (Y): 15,000 dpm/100 cm^2

Instrument Reading That Equals Maximum Release Criteria: [(Y/100) x S x E] + B

= [(15,000 /100) x 15 x .70] + 34 = 559 cpm

+ 1000 av + 3000 max Sr-90

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET

Inspector: HENSON PARKER MASNYK BAILEY	Date: 3-5-98
Licensee: Dept of the Army	Location: Fort McClellan
License No.: 01-02861-04	Docket No.: 030-14759
Report No.: 98-01	Survey Date(s): March 9-13, 1998

Isotopes of Interest: Sr 90, Cs137, Co60

Survey Instrument

Type: Ludlum Model 3	Probe: Ludlum 44-9
Serial No.: 102518	Serial No.: 101214
NRC Tag No.: 043995	NRC Tag No.: Temp C029
Calibration Date: 6-16-97	Size (S): 15 cm²

Background Determination (B)

Units: cpm 76 mrem/hr _____ μRem/hr _____

(1) 60	(2) 100	(3) 80	(4) 60	(5) 80	Avg.: 76

Reference Source Measurements

Source Serial No.	NRC Tag No.	Isotope	Current Activity (A) (dpm)	Meter Reading (M) (cpm or dose rate)	Efficiency (E)
11/26/87	02981	Tc99	14,300	2,000	.14
NEN	N/A	Sr90	44,844	24,000	.54
2796	013414	Cs137 β	3475	2,400	.69
N/A	NRC 01 014	Cs137	10,944,600	180,000	check source

Efficiency (E) = (M-B)/A

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET
(Page 2)

Field Check Source Measurements Instrument Serial No.: 102518 Probe Serial No.: 101214

Source SN	NRC Tag No.	Isotope	Nominal Activity (dpm)	Meter Reading (cpm or dose rate)
(1) N/A	NRC-01-014	Cs137	10,944,600	180,000
(2)				
(3)				
(4)				

Surface Activity Measurement Minimum Detectable Activity

MDA = activity level in dpm/100 cm^2
t = counting time in minutes
E = detector efficiency in counts/disintegration
* = multiply

B_R = background rate in cpm
t_c = meter time constant in minutes
A = active probe area in cm^2

Scaler Mode:

$$MDA = \frac{2.71 + 4.65\sqrt{B_R * t}}{t * E * (A/100)}$$

Ratemeter Mode:

$$MDA = \frac{4.65\sqrt{B_R / 2 * t_c}}{E * (A/100)}$$

Scanning Mode:

$$MDA = \frac{3 * B_R}{E * (A/100)}$$

Mode		MDA
Scanning	Cs137	2880
	Sr 90	2850
	(Co 60) Tc 99	11,400

Release Criteria Comparison

Maximum Release Criteria for Isotope of Interest (X): 15,000 dpm/100 cm^2

Instrument Reading That Equals Maximum Release Criteria: [(X/100) x S x E] + B

Cs137

= [(15000 /100) x 15 x .69] + 76 = 1629 cpm

Average Release Criteria for Isotope of Interest (Y): 5,000 dpm/100 cm^2

Instrument Reading That Equals Maximum Release Criteria: [(Y/100) x S x E] + B

= [(5000 /100) x 15 x .69] + 76 = 594 cpm

Scanning MPA $\frac{3 \times BR}{E \cdot \frac{A}{1\omega}}$

Cs 137 $= \frac{228}{.10} = 2280$

Sr 90 1000 AV 3000 max

.08 → 2850

Co 60 $228/.02 = 11{,}400$

---

release

Co-60 391 max 181 av

Sr 90 1000 AV 157 3000 max 319

DAILY SURVEY INSTRUMENT PERFORMANCE WORKSHEET

(Page ___ of ___)

License No.: 01-02861-04	Survey Date(s): March 9-13, 1998

Survey Instrument

Type: Ludlum Model 3	Probe: Ludlum 44-9
Serial No.: 102518	Serial No.: 101214

Daily Results (continued)

Date	Time	Location	Source	Gross	Background	Net	Acceptable
3/9/98	12:55 est	Mallinckrodt (513)		150,000	470		
↓	~~[illegible]~~ 0410 EST	↓	↓	120,000			
3/10	9:40 est			180,000			
↓	5:00 est			160,000			

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET

Inspector: HENSON PARKER MASNYK BAILEY	Date: 3-5-98
Licensee: Dept of the Army	Location: Fort McClellan
License No.: 01-02861-04	Docket No.: 030-14759
Report No.: 98-01	Survey Date(s): March 9-13, 1998

Isotopes of Interest: Sr-90, Cs-137, Co 60

Survey Instrument

Type: Model 3 Ludlum	Probe: Ludlum 44-9
Serial No.: 102129	Serial No.: 101211
NRC Tag No.: 043994	NRC Tag No.: N/A
Calibration Date: 5-8-97	Size (S): 15 cm²

Background Determination (B)

Units: (cpm) 68 mrem/hr _____ μRem/hr _____

(1) 40	(2) 60	(3) 100	(4) 80	(5) 60	Avg.: 68

Reference Source Measurements

Source Serial No.	NRC Tag No.	Isotope	Current Activity (A) (dpm)	Meter Reading (M) (cpm or dose rate)	Efficiency (E)
1126187	022981	Tc99	14,300	2,000cpm	.14
2796	013414	Cs137 B	3475	2,400cpm	.69
NEN	N/A	Sr90	44,844	24,000	.54
NA	NRC 01 014	Cs 137	10,944,600	160,000	checksource

Efficiency (E) = (M-B)/A

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET
(Page 2)

Field Check Source Measurements Instrument Serial No.: 102129 Probe Serial No.: 101211

Source SN	NRC Tag No.	Isotope	Nominal Activity (dpm)	Meter Reading (cpm or dose rate)
(1) N/A	NRC 01014	CS 137	10,944,600	160,000
(2)				
(3)				
(4)				

Surface Activity Measurement Minimum Detectable Activity

MDA = activity level in dpm/100 cm^2
t = counting time in minutes
E = detector efficiency in counts/disintegration
* = multiply

B_R = background rate in cpm
t_c = meter time constant in minutes
A = active probe area in cm^2

Scaler Mode:

$$MDA = \frac{2.71 + 4.65\sqrt{B_R * t}}{t * E * (A/100)}$$

Ratemeter Mode:

$$MDA = \frac{4.65\sqrt{B_R / 2 * t_c}}{E * (A/100)}$$

Scanning Mode:

$$MDA = \frac{3 * B_R}{E * (A/100)}$$

Mode		MDA
Scanning	Cs 137	1855
	Sr 90	2550
(Co-60)	Tc 99	10,200

Release Criteria Comparison

CS-137

Maximum Release Criteria for Isotope of Interest (X): 15,000 dpm/100 cm^2

Instrument Reading That Equals Maximum Release Criteria: [(X/100) x S x E] + B

= [(15,000 /100) x 15 x .69] + 68 = 1620 cpm

Average Release Criteria for Isotope of Interest (Y): 5,000 dpm/100 cm^2

Instrument Reading That Equals Maximum Release Criteria: [(Y/100) x S x E] + B

= [(5,000 /100) x 15 x .69] + 68 = 586 cpm

Scanning

(137) $MDA = \frac{3 \cdot B.R}{E \times A/W} = \frac{3 \cdot 68}{.69 \times .15} \quad \frac{204}{.11} = 1855$

Sr90 ~~1858~~ $\frac{204}{.08} = 2550$

Tc99 $\frac{204}{.02} = 10{,}200$

Release

Co-60 — 383 max

~~Co60~~ 173 av

Sr 90 1000 av 3000 max

149 311

DAILY SURVEY INSTRUMENT PERFORMANCE WORKSHEET

(Page ___ of ___)

License No.: 01-02861-04	Survey Date(s): March 9-13, 1998

Survey Instrument

Type: Model 3 Ludlum	Probe: Ludlum 44-9
Serial No.: 102129	Serial No.: 101211

Daily Results (continued)

Date	Time	Location	Source	Gross	Background	Net	Acceptable
3/9	12:50 est	Bldg 3192 front	Cs137	180,000	440		
3/9	4:07 est	↓ apron		169,000			
3/10	9:35 est			180,000			
3/10	4:52 est			180,000			
3/11	8:32 est			180,000			

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET

Inspector: HENSON PARKER MASNYK BAILEY	Date: 3-5-98
Licensee: Dept of the Army	Location: Fort McClellan
License No.: 01-02861-04	Docket No.: 030-14759
Report No.: 98-01	Survey Date(s): March 9-13, 1998

Isotopes of Interest: Sr 90 Cs 137 Co 60

Survey Instrument

Type: Ludlum Model 19 μR	Probe: N/A
Serial No.: 101703	Serial No.:
NRC Tag No.: 043987	NRC Tag No.:
Calibration Date: 11-26-97	Size (S): cm²

Background Determination (B)

Units: cpm _____ mrem/hr _____ μRem/hr 9

(1) 8	(2) 9	(3) 10	(4) 8	(5) 9	Avg.: 9

Reference Source Measurements

Source Serial No.	NRC Tag No.	Isotope	Current Activity (A) (dpm)	Meter Reading (M) (cpm or dose rate)	Efficiency (E)
1126/87	022981	Tc99	14,300	12	
N/A	NRC 01 014	Cs 137	10,944,600	14	

Efficiency (E) = (M-B)/A

DAILY SURVEY INSTRUMENT PERFORMANCE WORKSHEET

(Page ___ of ___)

License No.: 01-02861-04	Survey Date(s): March 9-13, 1998

Survey Instrument

Type: Ludlum Model 19 uR	Probe: NA
Serial No.: 101703	Serial No.: ↓

Daily Results (continued)

Date	Time	Location	Source	Gross	Background	Net	Acceptable
3/9	12:35 est	3192 entrance apron	Cs-137	19			
3/9	4:10 est	↓		18			
3/13	9:40 est			18			

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET

Inspector: HENSON PARKER MASNYK BAILEY	Date: 3-5-98
Licensee: Dept of the Army	Location: Fort McClellan
License No.: 01-02861-04	Docket No.: 030-14759
Report No.: 98-01	Survey Date(s): March 9-13, 1998

Isotopes of Interest: Sr-90 Co-60 Cs-137

Survey Instrument

Type: Ludlum Model 19 uR	Probe: NA
Serial No.: 101770	Serial No.:
NRC Tag No.: 043988	NRC Tag No.:
Calibration Date: 11-26-97	Size (S): cm^2

Background Determination (B)

Units: cpm _____ mrem/hr _____ µRem/hr 9

(1) 10	(2) 9	(3) 9	(4) 10	(5) 8	Avg.: 9

Reference Source Measurements

Source Serial No.	NRC Tag No.	Isotope	Current Activity (A) (dpm)	Meter Reading (M) (cpm or dose rate)	Efficiency (E)
1126/87	022981	Tc 99	14,300	8	
N/A	NRC 01 014	Cs 137	10,944,600	14	

Efficiency (E) = (M-B)/A

DAILY SURVEY INSTRUMENT PERFORMANCE WORKSHEET

(Page ___ of ___)

License No.: 01-02861-04	Survey Date(s): March 9-13, 1998

Survey Instrument

Type: Ludlum Model 19 uR	Probe: NA
Serial No.: 101770	Serial No.: ↓

Daily Results (continued)

Date	Time	Location	Source	Gross	Background	Net	Acceptable
3/9	12:55 est	3192 entrance	Cs-137	19			
3/9	4:10 est	↓ apron		19			
3/10	9:40 est			18			
3/11	9:35 est			21			

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET

Inspector: HENSON PARKER MASNYK-BAILEY	Date: 3-4-98
Licensee: Dept of The Army	Location: Fort McClellan
License No.: 01-02861-04	Docket No.: 030-14759
Report No.: 98-01	Survey Date(s):

Isotopes of Interest: Sr 90 Cs 137 Co60

Survey Instrument

Type: ESP-2	Probe: SPA6
Serial No.: 00782	Serial No.: 287
NRC Tag No.: 026729	NRC Tag No.: 029739
Calibration Date: 11-20-98	Size (S): 15 cm^2

Background Determination (B)

Units: (cpm) 1262 mrem/hr _____ μRem/hr _____

(1) 1130	(2) 1390	(3) 1420	(4) 1190	(5) 1180	Avg.:

Reference Source Measurements

Source Serial No.	NRC Tag No.	Isotope	Current Activity (A) (dpm)	Meter Reading (M) (cpm or dose rate)	Efficiency (E)
NRC 01 014	N/A	Cs137	10,944,600	695,000	.06

Efficiency (E) = (M-B)/A

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET
(Page 2)

Field Check Source Measurements Instrument Serial No.: 026729 Probe Serial No.: 287

Source SN	NRC Tag No.	Isotope	Nominal Activity (dpm)	Meter Reading (cpm or dose rate)
(1) NRC-01-014	N/A	Cs 137	10,944,600	.06
(2)				
(3)				
(4)				

Surface Activity Measurement Minimum Detectable Activity

MDA = activity level in dpm/100 cm²
t = counting time in minutes
E = detector efficiency in counts/disintegration
* = multiply

B_R = background rate in cpm
t_c = meter time constant in minutes
A = active probe area in cm²

Scaler Mode:

$$MDA = \frac{2.71 + 4.65\sqrt{B_R * t}}{t * E * (A/100)}$$

Ratemeter Mode:

$$MDA = \frac{4.65\sqrt{B_R / 2 * t_c}}{E * (A/100)}$$

Scanning Mode:

$$MDA = \frac{3 * B_R}{E * (A/100)}$$

$\frac{46.73}{.009} = 5192$

Mode	MDA
Ratemeter	5192

Release Criteria Comparison

Maximum Release Criteria for Isotope of Interest (X): 15,000 dpm/100 cm²

Instrument Reading That Equals Maximum Release Criteria: [(X/100) x S x E] + B

= [(15,000 /100) x 15 x .06] + 1262 = 1397 cpm

$4.65\sqrt{\frac{1262}{2} \cdot .16} = \frac{.06 \times 15}{}$

Average Release Criteria for Isotope of Interest (Y): 5,000 dpm/100 cm²

Instrument Reading That Equals Maximum Release Criteria: [(Y/100) x S x E] + B

= [(5,000 /100) x 15 x .06] + 1262 = 1307 cpm

DAILY SURVEY INSTRUMENT PERFORMANCE WORKSHEET

(Page ___ of ___)

License No.: 01-02861-04	Survey Date(s): March 9-13, 1998

Survey Instrument

Type: ESP-2	Probe: SPA 6
Serial No.: 00782	Serial No.: 029739

Daily Results (continued)

Date	Time	Location	Source	Gross	Background	Net	Acceptable
3/10	3:35 est	apron	65137	699,000			
↓	3:35 est						
3/10	~~Sim exams~~						
↓	Sim exams			671,000			
3/11	11:20 est			695,000			

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET

Inspector: HENSON PARKER MASNYK-BAILEY	Date: 3-4-98
Licensee: Dept of The Army	Location: Fort McClellan
License No.: 01-02861-04	Docket No.: 030-14759
Report No.: 98-01	Survey Date(s): March 9-13, 98

Isotopes of Interest: Sr90 Cs137 Co60

Survey Instrument

Type: ESP-2	Probe: SPA-6
Serial No.: 00793	Serial No.: 286
NRC Tag No.: 26418	NRC Tag No.: 026740
Calibration Date: 3-24-97	Size (S): 15 cm^2

Background Determination (B)

Units: cpm 1720 mrem/hr _____ μRem/hr _____

(1) 1670	(2) 1930	(3) 1610	(4) 1700	(5) 1690	Avg.:

Reference Source Measurements

Source Serial No.	NRC Tag No.	Isotope	Current Activity (A) (dpm)	Meter Reading (M) (cpm or dose rate)	Efficiency (E)
NRC-01-014	N/A	Cs 137	~~16,038,000~~	886,000	~~.06~~
			10,944,600		.08

Efficiency (E) = (M-B)/A

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET
(Page 2)

Field Check Source Measurements Instrument Serial No.: 00793 Probe Serial No.: 276

Source SN	NRC Tag No.	Isotope	Nominal Activity (dpm)	Meter Reading (cpm or dose rate)
(1) ~~16,038,000~~ DPM	NRC-01-014	Cs137	16,038,000	886,000
(2)				
(3)				
(4)				

Surface Activity Measurement Minimum Detectable Activity

MDA = activity level in dpm/100 cm²
t = counting time in minutes
E = detector efficiency in counts/disintegration
* = multiply

B_R = background rate in cpm
t_c = meter time constant in minutes
A = active probe area in cm²

Scaler Mode:

$$MDA = \frac{2.71 + 4.65\sqrt{B_R * t}}{t * E * (A/100)}$$

Ratemeter Mode:

$$MDA = \frac{4.65\sqrt{B_R / 2 * t_c}}{E * (A/100)}$$

Scanning Mode:

$$MDA = \frac{3 * B_R}{E * (A/100)}$$

Mode	MDA
Ratemeter	4552. ~~71,300~~ ~~53,475~~ DPM

Release Criteria Comparison

Maximum Release Criteria for Isotope of Interest (X): 15,000 dpm/100 cm²

Instrument Reading That Equals Maximum Release Criteria: [(X/100) x S x E] + B

= [(15,000 /100) x 15 x .08] + ~~5558 DPM~~ 1720 = ~~1455~~ cpm 1900

Average Release Criteria for Isotope of Interest (Y): 5,000 dpm/100 cm²

Instrument Reading That Equals Maximum Release Criteria: [(Y/100) x S x E] + B

= [(5,000 /100) x 15 x .08] + ~~5558 DPM~~ 1720 = ~~1765~~ cpm ~~2470 DPM~~ 1780

DAILY SURVEY INSTRUMENT PERFORMANCE WORKSHEET

(Page ___ of ___)

License No.: 01-02861-04	Survey Date(s): March 9-13, 98

Survey Instrument

Type: ESP-2	Probe: SPA-6
Serial No.: 00793	Serial No.: 0286

Daily Results (continued)

Date	Time	Location	Source	Gross	Background	Net	Acceptable

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET

Inspector: HENSON PARKER MASNYK-BAILEY	Date: 3-4-98
Licensee: Dept of the Army	Location: Fort McClellan
License No.: 01-02861-04	Docket No.: 030-14759
Report No.: 98-01	Survey Date(s): March 9-13, 1998

Isotopes of Interest: Sr 90 Cs 137 Co 60

Survey Instrument

Type: ESP-2	Probe: HP-260
Serial No.: ~~00782~~ NA	Serial No.: 706888
NRC Tag No.: 026729	NRC Tag No.: 026732
Calibration Date: 11-20-97	Size (S): 15 cm²

Background Determination (B)

Units: cpm 34 mrem/hr _____ μRem/hr _____

(1) 30	(2) 39	(3) 35	(4) 35	(5) 30	Avg.: 34

Reference Source Measurements

Source Serial No.	NRC Tag No.	Isotope	Current Activity (A) (dpm)	Meter Reading (M) (cpm or dose rate)	Efficiency (E)
1888	013414	Cs137 β	3475	2780	.80
NEN	N/A	Sr90	44,844	29,100	.65
1126/87	022981	Tc99	14,300	5300	.37
NA	NRC 01 014	Cs137	10,944,600	230,000	check source

Efficiency (E) = (M-B)/A

Tc β 292 keV = Co β 314 keV

PRE-INSPECTION SURVEY INSTRUMENT PERFORMANCE WORKSHEET
(Page 2)

NRC 026732

Field Check Source Measurements Instrument Serial No.: 00782 Probe Serial No.: 706888

Source SN	NRC Tag No.	Isotope	Nominal Activity (dpm)	Meter Reading (cpm or dose rate)
(1) NRC 01014	NA	CS137	10,944,600	
(2)				
(3)				
(4)				

Surface Activity Measurement Minimum Detectable Activity

MDA = activity level in dpm/100 cm²
t = counting time in minutes
E = detector efficiency in counts/disintegration
* = multiply

B_R = background rate in cpm
t_c = meter time constant in minutes
A = active probe area in cm²

Scaler Mode:

$$MDA = \frac{2.71 + 4.65\sqrt{B_R * t}}{t * E * (A/100)}$$

Ratemeter Mode:

$$MDA = \frac{4.65\sqrt{B_R / 2 * t_c}}{E * (A/100)}$$

Scanning Mode:

$$MDA = \frac{3 * B_R}{E * (A/100)}$$

Mode	MDA ~~dpm~~
Scaler	CS137 → 249 Sr90 → 304 Tc99 - 497
Ratemeter	CS137 → 64 Sr90 → 78 Tc99 - 128
Scanning	CS137 → 850 Sr90 → 1040 Tc99 - 1700

Release Criteria Comparison

Maximum Release Criteria for Isotope of Interest (X): 15,000 dpm/100 cm²

Instrument Reading That Equals Maximum Release Criteria: [(X/100) x S x E] + B

CS137

= [(15,000 /100) x 15 x .80] + 34 = 1834 cpm

Average Release Criteria for Isotope of Interest (Y): 5,000 dpm/100 cm²

Instrument Reading That Equals Maximum Release Criteria: [(Y/100) x S x E] + B

= [(5,000 /100) x 15 x .80] + 34 = 634 cpm

1000 AV = Sr90 3000 max = Sr90

ESP-2 + HP260
00782

SCALER

Cs-137

$$MDA = \frac{2.71 + 4.65\sqrt{Br \cdot t}}{t \times E \cdot A/100}$$

$$= \frac{2.71 + 4.65\sqrt{34 \cdot 1}}{1 \times .8 \times .15} = \frac{29.82}{.12} = 249$$

Sr90

$$\frac{29.82}{.098} = 304$$

Tc99

$$\frac{29.82}{.06} = 497$$

Photometer

$$\frac{4.65\sqrt{\frac{Br}{2} \times Tc}}{E \times \frac{A}{100}} = \frac{4.65\sqrt{34 \times .16}}{.80 \times .15} = \frac{7.67}{.12} = 64$$

Cs 137

Sr90

$$\frac{7.67}{.65 \times .15} = \frac{7.67}{.098} = 78$$

Tc99

$$\frac{7.67}{.37 \times .15} = \frac{7.67}{.06} = 128$$

ESP2 + HP260
00782

Scanning

Cs137 $MPA = \frac{3 \cdot Bc}{E \cdot A/W} = \frac{34 \times 3}{.80 \times .15} = \frac{102}{.12} = 850$

Sr90 $\frac{102}{.098} = 1040$

Tc99 $\frac{102}{.06} = 1700$

Release Criteria

Sr90 $\frac{3000}{100} \times .15 \times .65 + 34 = 327$ cpm

~~Cs137~~ $\frac{1000}{100} \times .15 \times .65 + 34 = 132$

Co60 $\frac{15,000}{100} \times .15 \times .37 + 34 = 867$

$\frac{5,000}{100} \times .15 \times .37 + 34 = 312$

DAILY SURVEY INSTRUMENT PERFORMANCE WORKSHEET

(Page ___ of ___)

License No.: 01-02861-04	Survey Date(s): March 9-13, 1998

Survey Instrument

Type: ESP-2	Probe: HP-260
Serial No.: 00782	Serial No.: 706888 NRC 026732

Daily Results (continued)

Date	Time	Location	Source	Gross	Background	Net	Acceptable
3/9/98	12:25 est	3142 entrance	Cs137	165,000	40		
3/9	4:10 est	apron		160,000			
3/10	9:40 est			223,000			

→ Olympia – Has Ft. McClellan committed to a schedule for cleanup of these areas?

MEMORANDUM

To: Ft. McClellan Base Closure File

From: James L. McNees, CHP J L McNees

7/7/97

On Wednesday June 25, 1997 the writer went with Mr. John May, RSO and performed a survey to validate the decommissioning of Building T-812-1/2, which is purported to have been used to store radium. This is the only site of radioactive material use on Ft. McClellan not subject to the U.S. Nuclear Regulatory Commission. All other places of use involved by-product material being utilized by active duty military or DOD civilian employees.

The construction of Building T-812-1/2 is not typical of a radium storage vault. It has a metal grate door for one side which would afford no shielding in one direction and it has no storage wells as were typical of radium sealed source storage during the 50's and 60's. A gamma radiation survey was performed using a Bicron, Model Micro Analyst, #B218U, calibrated on 4-7-97. This revealed an increase above the natural background in the area of approximately four mircoR per hour when placing the meter in the interior of the structure. This would be typical of the natural radiation from the three concrete sides and the concrete floor and ceiling of the enclosure. The three solid walls, the floor and the ceiling were then surveyed with an Eberline ASP-1 utilizing a ZnS alpha scintillation probe. The calibration of this setup was verified at the survey location using a plutonium standard immediately prior to and upon completion of the survey. No alpha emissions were detected from the walls, ceiling or floor of the structure. Next a paint scrapper was used on a 200 sq. cm. area of the floor. The area was scrapped to the bear concrete and then surveyed with the alpha probe which revealed no alpha emissions. The scrapings, most of which were the residuals of paint droppings from previous use of the structure to store paint, were counted in the State of Alabama's radiation laboratory using a gas proportional counter. The results of which indicated no radioactive emissions. Thus, Building T-812-1/2 does not contain any radioactivity that would make it unacceptable for unrestricted use.

The writer and Mr. May then revisited the Hot Cell site (Building 3192) to survey the trench adjacent to what is now the parking pad behind the Military Police Museum (Building 3182). This trench had been left as a result of soil being removed during the remediation of the site. During the May 6, 1997 visit, elevated radiation levels in the trench had been detected by Mr. Rick Button of EPA using a microR scintillation survey meter. Using the Bircon Micro Analysis described above the writer observed a maximum of 25 microR/hr in the bottom of trench on the west side of the front of the Hot Cell Building (Building 3192). The reading at the surface of the soil outside the trench in adjacent areas was 10 to 12 microR/hr. No reading could be obtained in the similar trench Northeast of the front door of the Hot Cell Building because that trench contained several inches of water. At the location of highest gamma exposure found one soil sample was taken from the dried sediment bottom of the trench (south of the front of the Hot Cell Building). The analysis of that soil was 0.69 pCi/g Co-60 and 1.46 pCi/g Cs-137. These

values are well within the release criteria of 25 mr per year using the methodology of Nureg-1500. The August 1983 report by USAEHA stated that low level Cs-137 and Co-60 contamination existed over the entire area west of Building 3192 (the Hot Cell site). Rain water from that area of known low level ground contamination would collect in the trench where the above sample was taken. The Hot Cell site is authorized by an NRC license and is yet to be approved for release by that agency. The former use of Cs-137 in the Military Police Museum was conducted pursuant to an NRC license. The matter is under consideration by NRC Region II.

The writer and Mr. May then went to Rideout Field, an area that the writer did not have the opportunity to visit on May 9, 1997. A microR survey was performed on the pile of contaminated soil known to be at this formerly NRC licensed site. The above described Bircron instrument produced approximately 12 to 15 microR/hr above background at the surface of this mound of dirt. The matter is under consideration by NRC Region II.

MEMORANDUM OF AGREEMENT
AMONG
HEAD QUARTERS, U.S. ARMY ASSISTANT CHIEF OF STAFF
FOR INSTALLATION MANAGEMENT,
HEADQUARTERS, U.S. ARMY TRAINING AND DOCTRINE COMMAND,
AND
THE NATIONAL GUARD BUREAU
TO
FACILITATE THE TRANSFER OF FORT McCLELLAN PROPERTY
TO THE U.S. ARMY NATIONAL GUARD.

This Memorandum of Agreement (MOA) is entered into among the Assistant Chief of Staff for Installation Management (ACSIM), the U.S. Army Training and Doctrine Command (TRADOC), and the National Guard Bureau (NGB) hereafter referred to as "the Parties."

WHEREAS, pursuant to the Defense Base Closure and Realignment Act of 1990 (PL 101-510, as amended) and the 1995 Base Closure Commission recommendation, Fort McClellan, a TRADOC installation, was determined to be surplus and is a closed military installation except for minimum essential land and facilities for a reserve component enclave for the Alabama National Guard, and

WHEREAS, the Army has established the Fort McClellan Army National Guard Training Center (01910) at Fort McClellan and intends to grant a license to Alabama Army National Guard (ALARNG), and

WHEREAS, both TRADOC and NGB have environmental responsibilities to provide resources, policy, and oversight to execute the Army environmental program at Fort McClellan, and

WHEREAS, pursuant to the authority of 10 U.S.C. Section 10501, the NGB is the chain of communication between the Army and the State National Guard units, and

WHEREAS, it is the intent of the Army to execute a license to the Alabama National Guard for use of the Fort McClellan Army National Guard Training Center, and to reassign accountability for such property from TRADOC to the NGB by establishing accountability for environmental actions, as explained herein, the Parties agree as follows:

1. PURPOSE

The purpose of this Agreement is to set forth the conditions for the future reassignment of accountability of Fort McClellan Army National Guard Training Center, listed at Exhibit 1, from TRADOC to NGB.

2. AGREEMENT BETWEEN THE PARTIES

A. The ACSIM, or his duly authorized representative, in executing his role as the Army Staff proponent of the Army Environmental Program, will:

(1) Assist TRADOC and NGB in the recognition of the new DERP and non-DERP requirements in the Program Objective Memorandum (POM) process,

(2) Resolve funding source issues for non-DERP eligible sites, identified by the NGB and TRADOC,

(3) Convene TRADOC and the NGB and discuss actions for non-DERP eligible sites identified by the parties where further action is warranted, and

(4) Provide TRADOC additional funding to accomplish the actions in B. Below

B. TRADOC agrees to:

(1) Investigate the sites listed in Exhibit 2 and determine, with concurrence of the NGB, whether further investigation is necessary. If further investigation is warranted, conduct investigation up through a Site Investigation (SI), IAW the National Contingency Plan (NCP), if necessary.

(2) IAW the NCP, complete phase of the study currently underway, Remedial Investigation or Site Investigation as appropriate, for the sites listed in Exhibit 3.

(3) Complete Relative Risk Site Evaluation (RRSE), Cost to Complete and Defense Sites Environmental Restorations Tracking System (DSERTS) entry for all sites eligible for Defense Environmental Restoration Program (DERP) funding where the above formal Site Investigations warrant further action; or, where further action is not warranted, document a No Further Action Decision with regulatory approval.

(4) Complete cost estimates and provide ACSIM and the NGB information on any sites not eligible for DERP funding where the above formal Site Investigations warrant further action; or, where further action is not warranted, document a No Further Action Decision with regulatory approval.

C. National Guard Bureau agrees to:

(1) Participate in the decision processes required in paragraph A. (1) above.

(2) Sign the DD Form 1354 upon completion of the actions required of TRADOC listed in A above, but no later than July 1, 2001.

3. ENVIRONMENTAL RESPONSIBILITIES

The parties to this agreement recognize that TRADOC is not responsible for any NGB environmental liabilities that may arise or result from National Guard activities that occur on the property from the date of this agreement until a DD form 1354, transferring accountability of the property from TRADOC to NGB, is signed.

4. DOCUMENTATION OF MUTUAL AGREEMENTS

TRADOC and NGB agree that upon completion of individual site investigations they will jointly review such documentation and provide written confirmation of mutual agreements.

5. TERM

This agreement shall terminate when NGB signs the DD Form 1354 transferring real property accountability from TRADOC to the NGB.

6. DELEGATION

The parties to this Agreement may delegate their authority to such officers, boards, and employees of their commands as they may deem expedient, in accordance with applicable law and regulations. Except as otherwise specifically provided, any reference herein to TRADOC, Army or NGB shall include duly authorized representatives.

7. DISPUTE RESOLUTION

If a dispute arises under this Agreement between NGB and TRADOC, they shall make reasonable efforts to informally resolve disputes. This shall occur at the delegees' level by the disputing Party engaging the other Party in informal Dispute Resolution through their immediate supervisors. If the issue cannot be resolved at this level, the Parties shall present the dispute to the ACSIM, and the ACSIM or his representative shall convene a meeting to arbitrate the issue or issues. If arbitration fails, and the Parties cannot reach a resolution, either party can request a written decision from the ACSIM, whose decision shall be final and binding.

8. FUNDING

The terms of this Agreement are subject and limited to the availability of appropriated federal funds as to time, purpose, and amount, and the laws of the United States.

9. AMENDMENTS

This Agreement may be amended at any time with the consent of all Parties.

U.S. ARMY
BY:

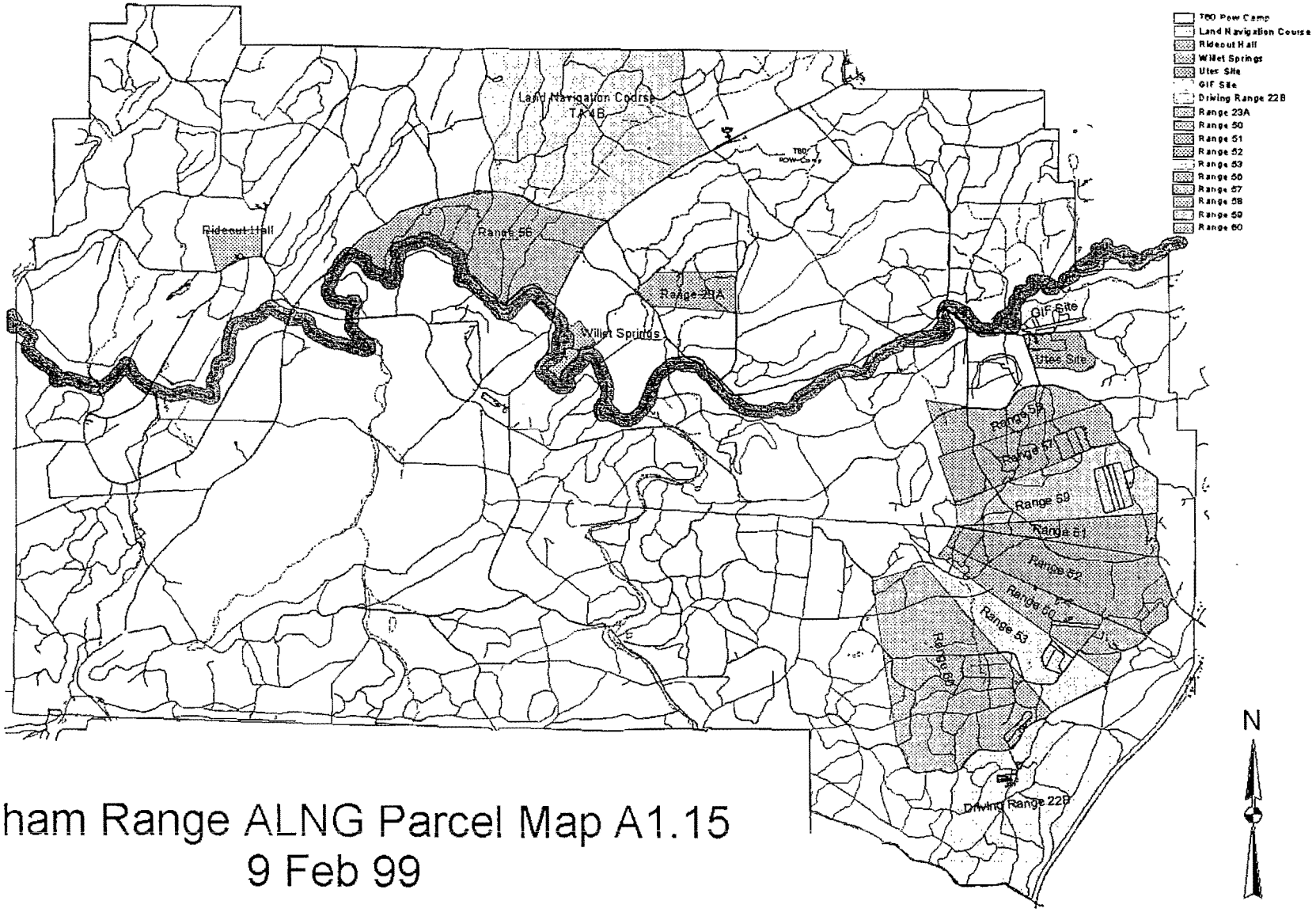
_____
ASSISTANT CHIEF OF STAFF
FOR INSTALLATION MANAGEMENT

NATIONAL GUARD BUREAU
BY:

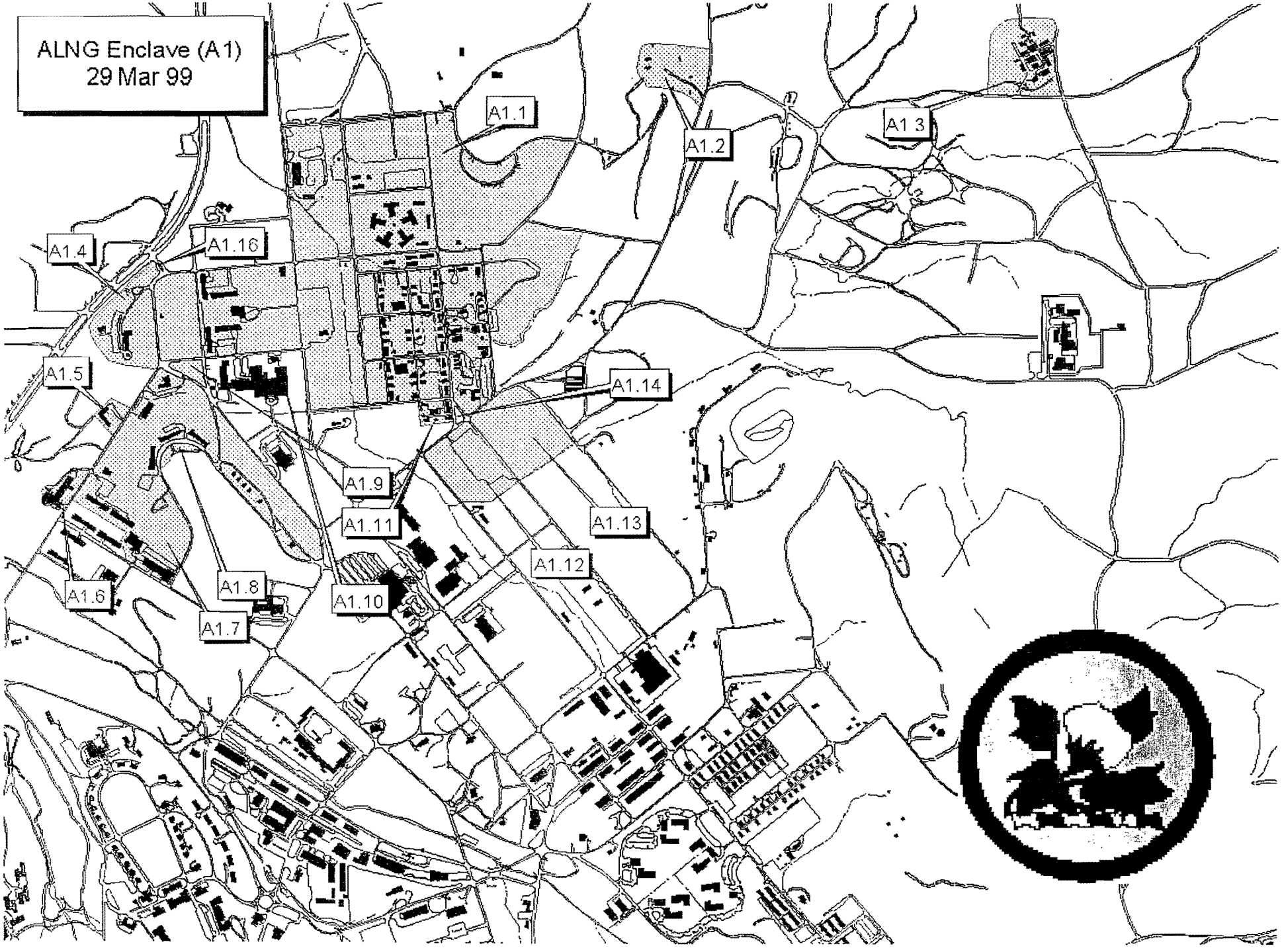
_____
CHIEF, NATIONAL GUARD BUREAU

TRAINING AND DOCTRINE COMMAND
BY:

_____
DEPUTY CHIEF OF STAFF
FOR BASE OPERATIONS SUPPORT



Pelham Range ALNG Parcel Map A1.15
9 Feb 99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29 Mar 99
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A1.13
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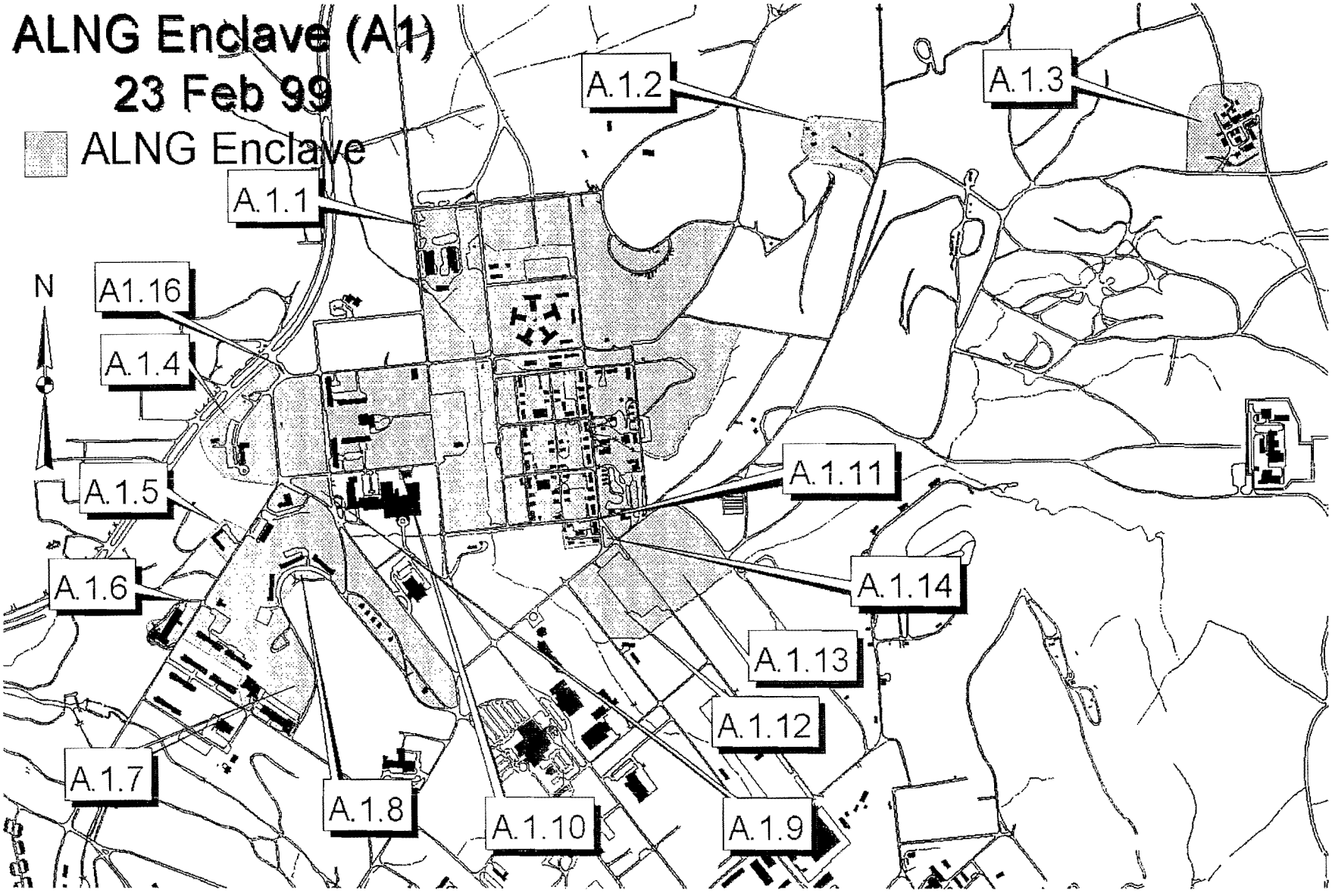
A1.10
A1.7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23 Feb 99
ALNG Enclave
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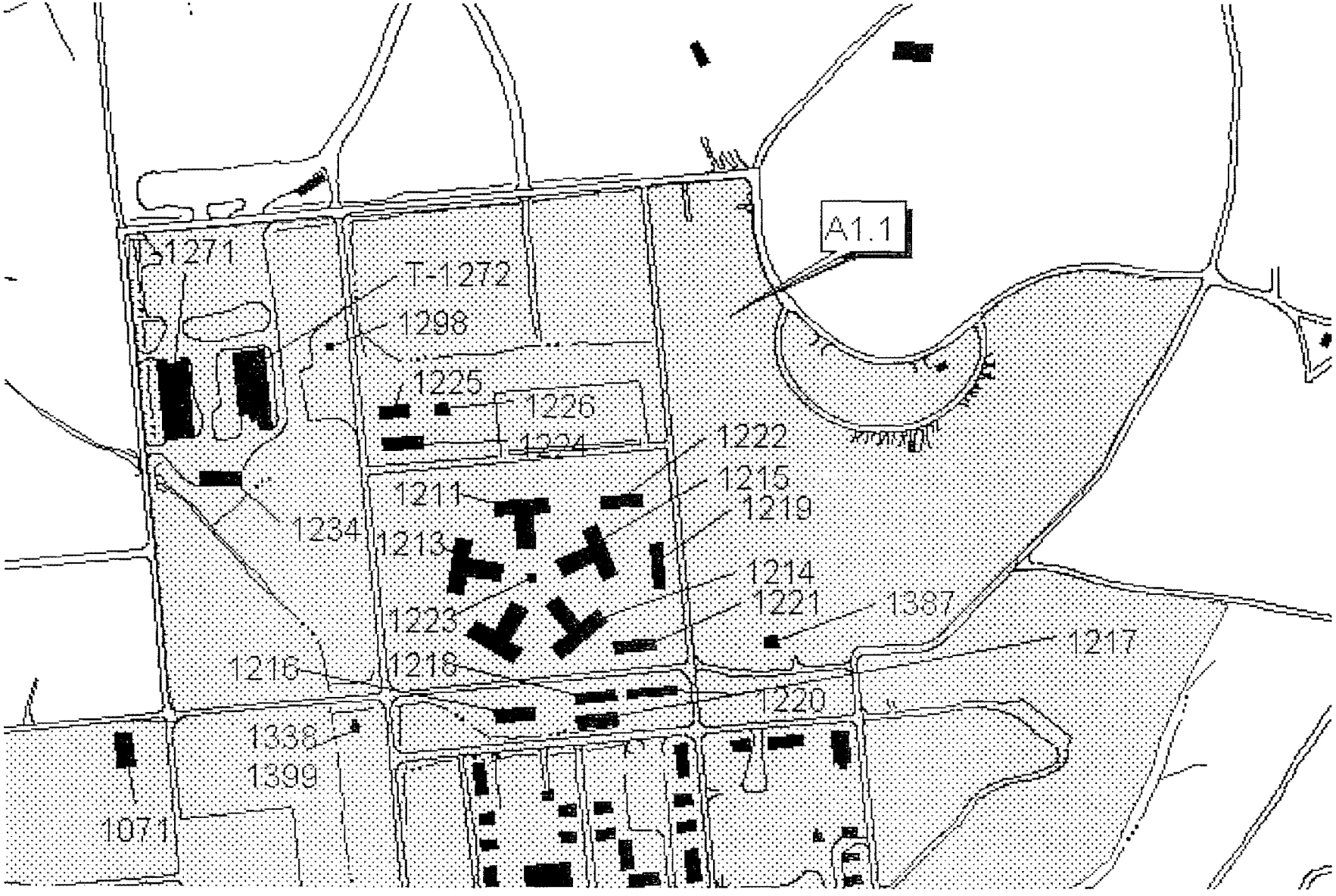
A.1.11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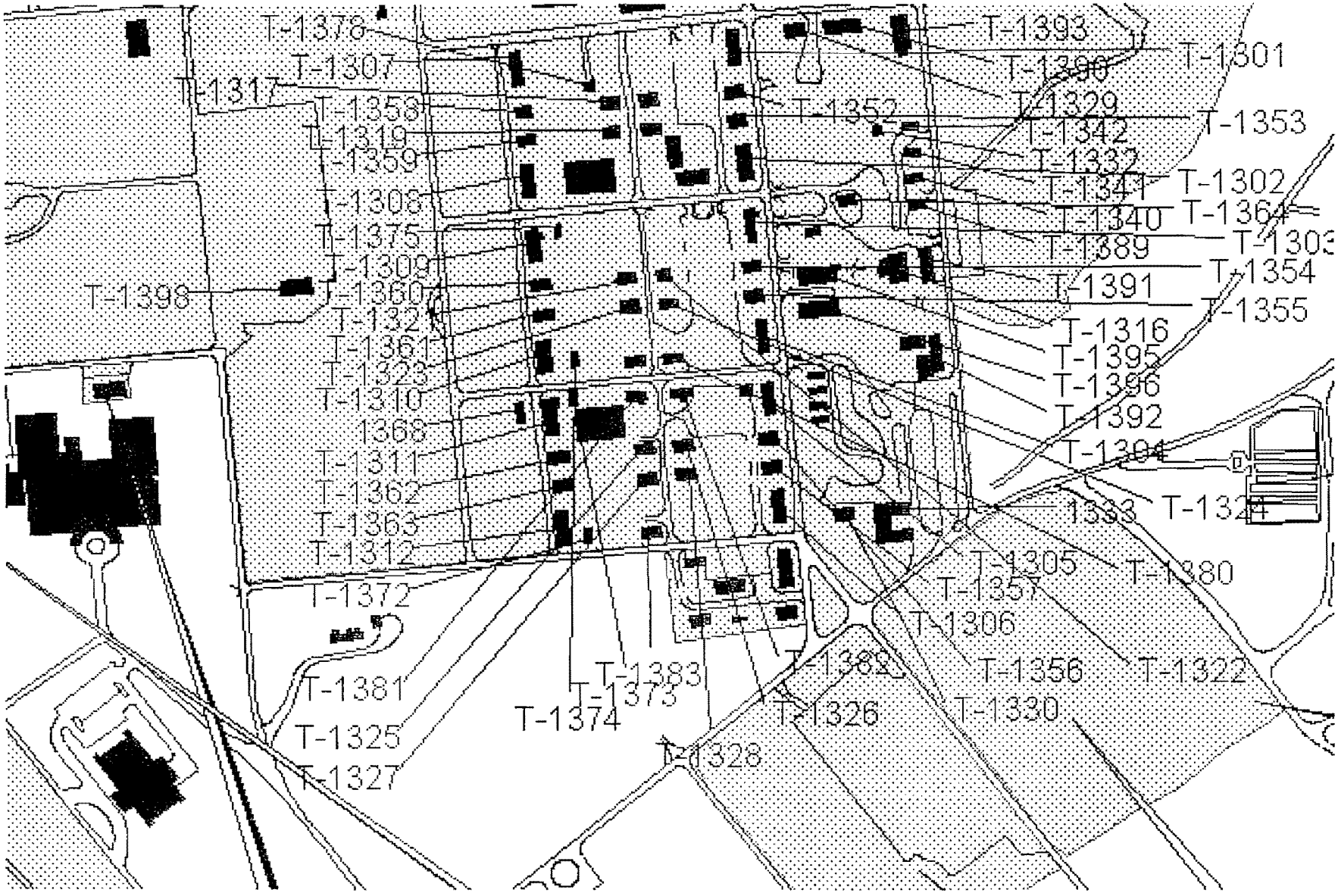
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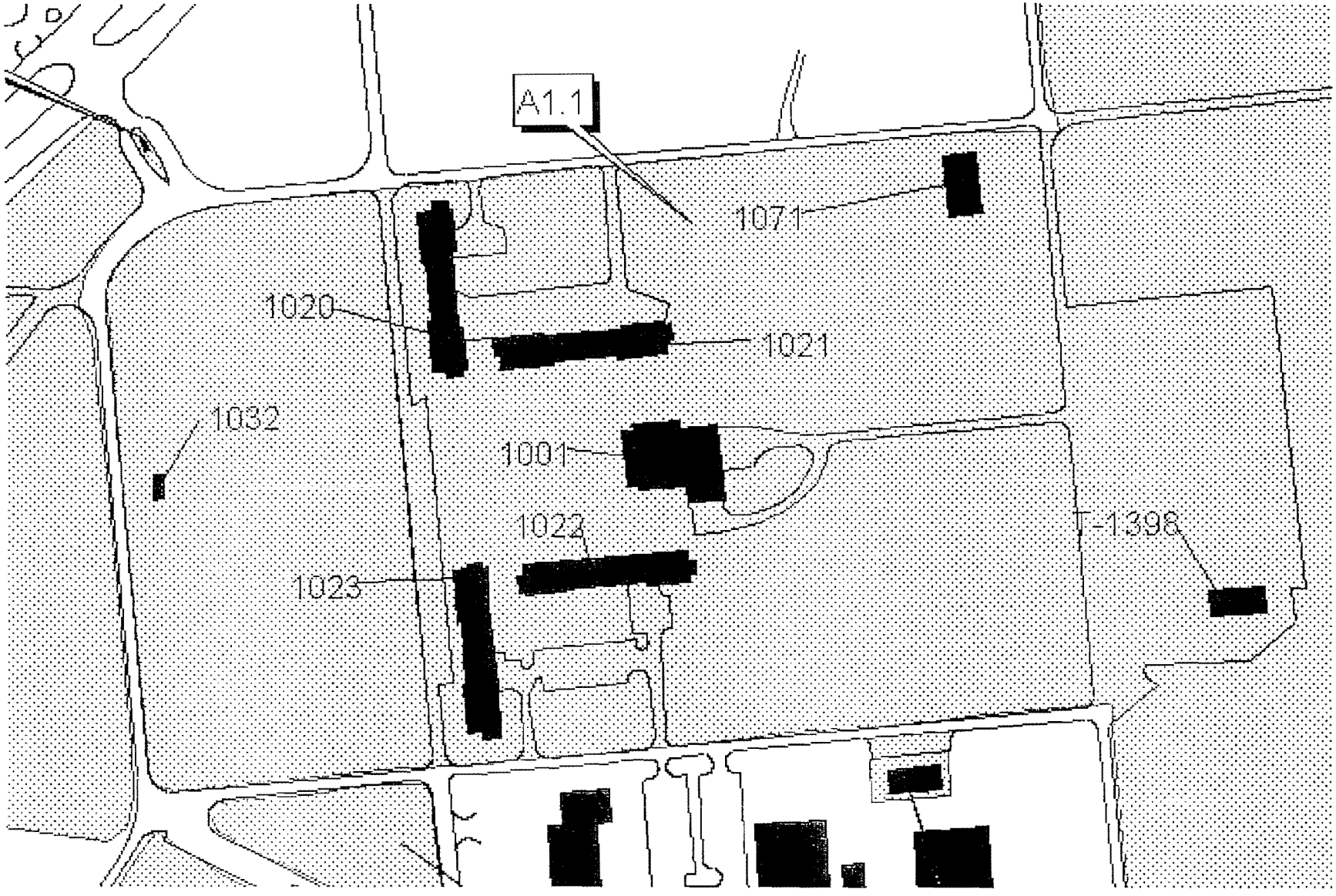
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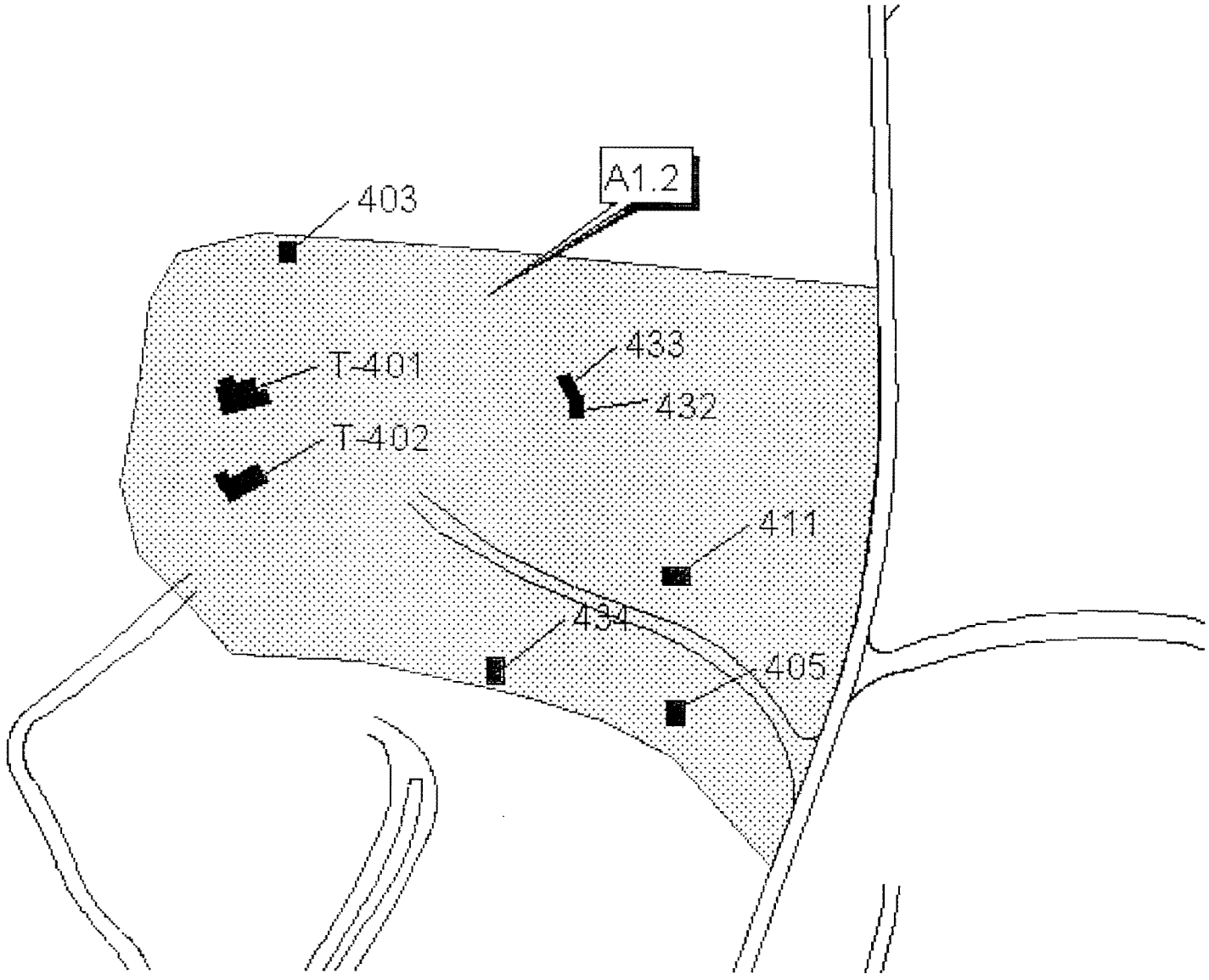
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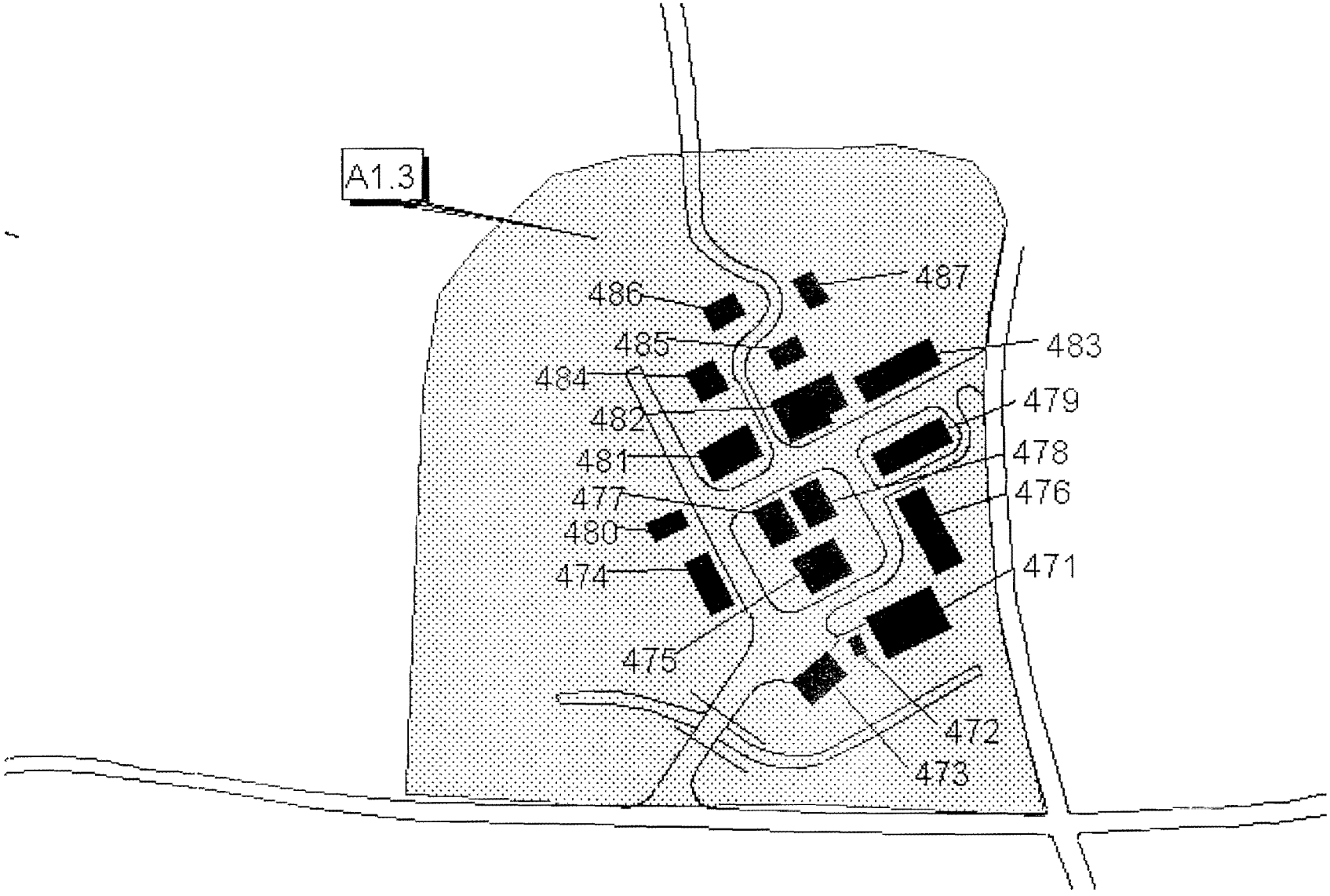
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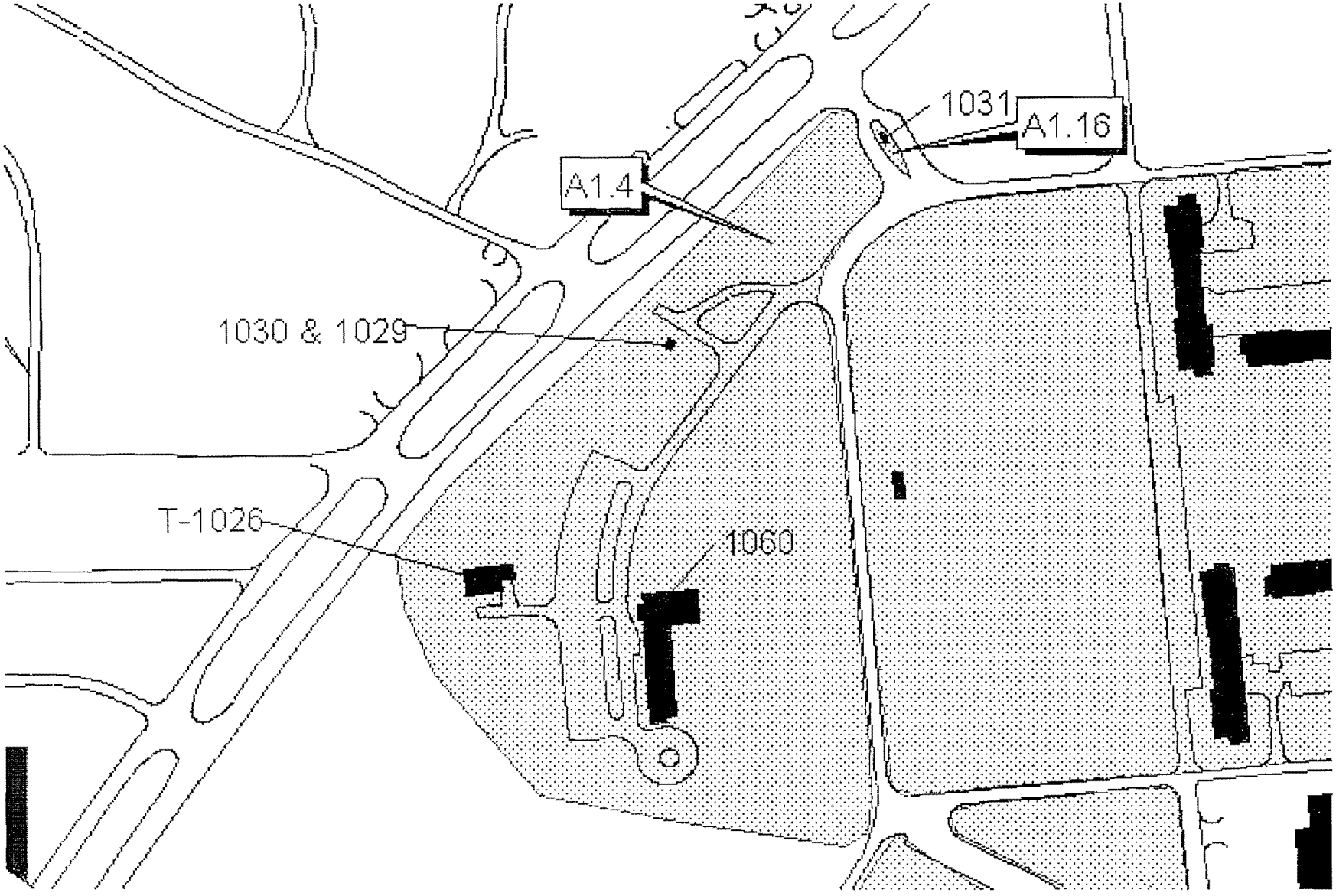
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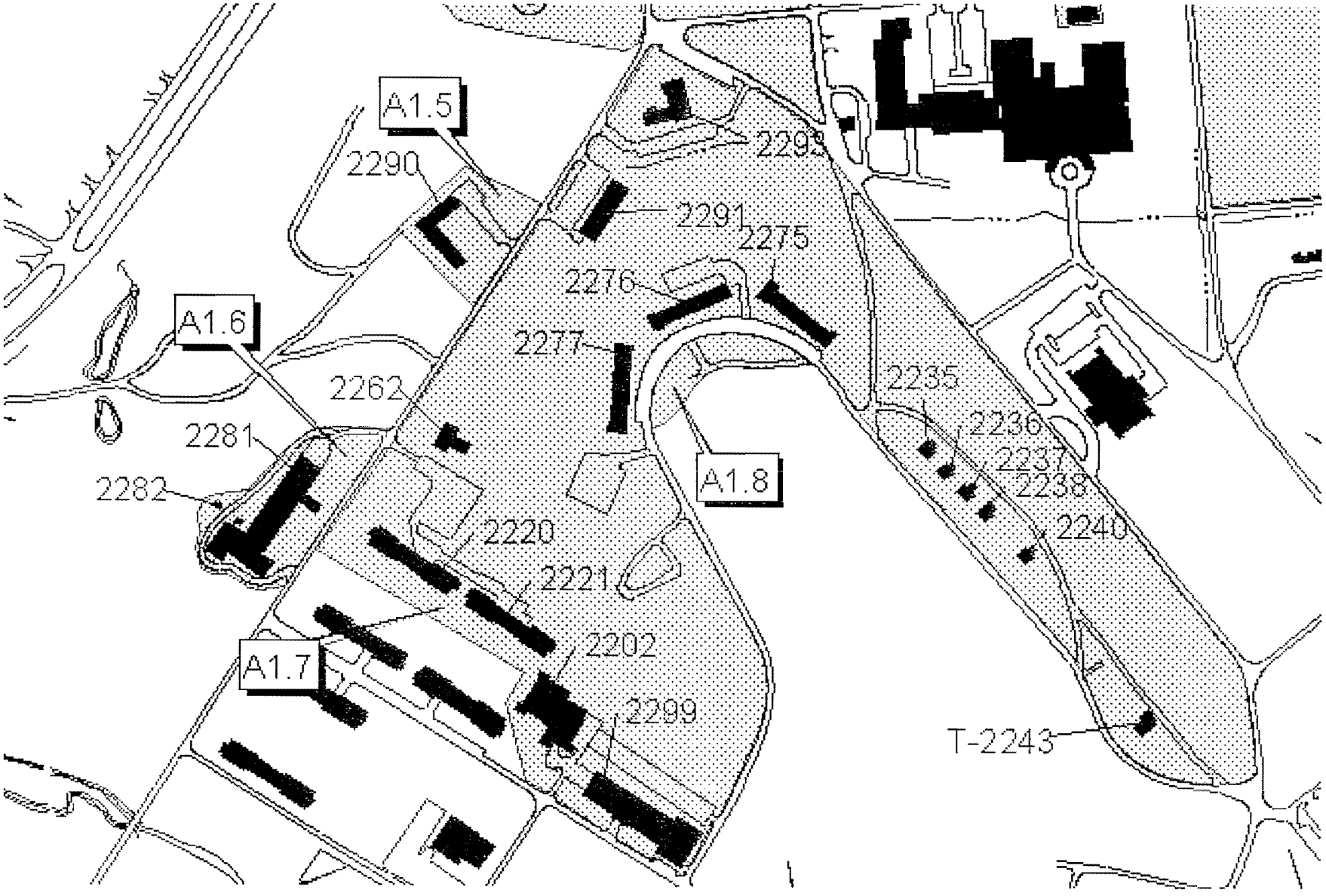
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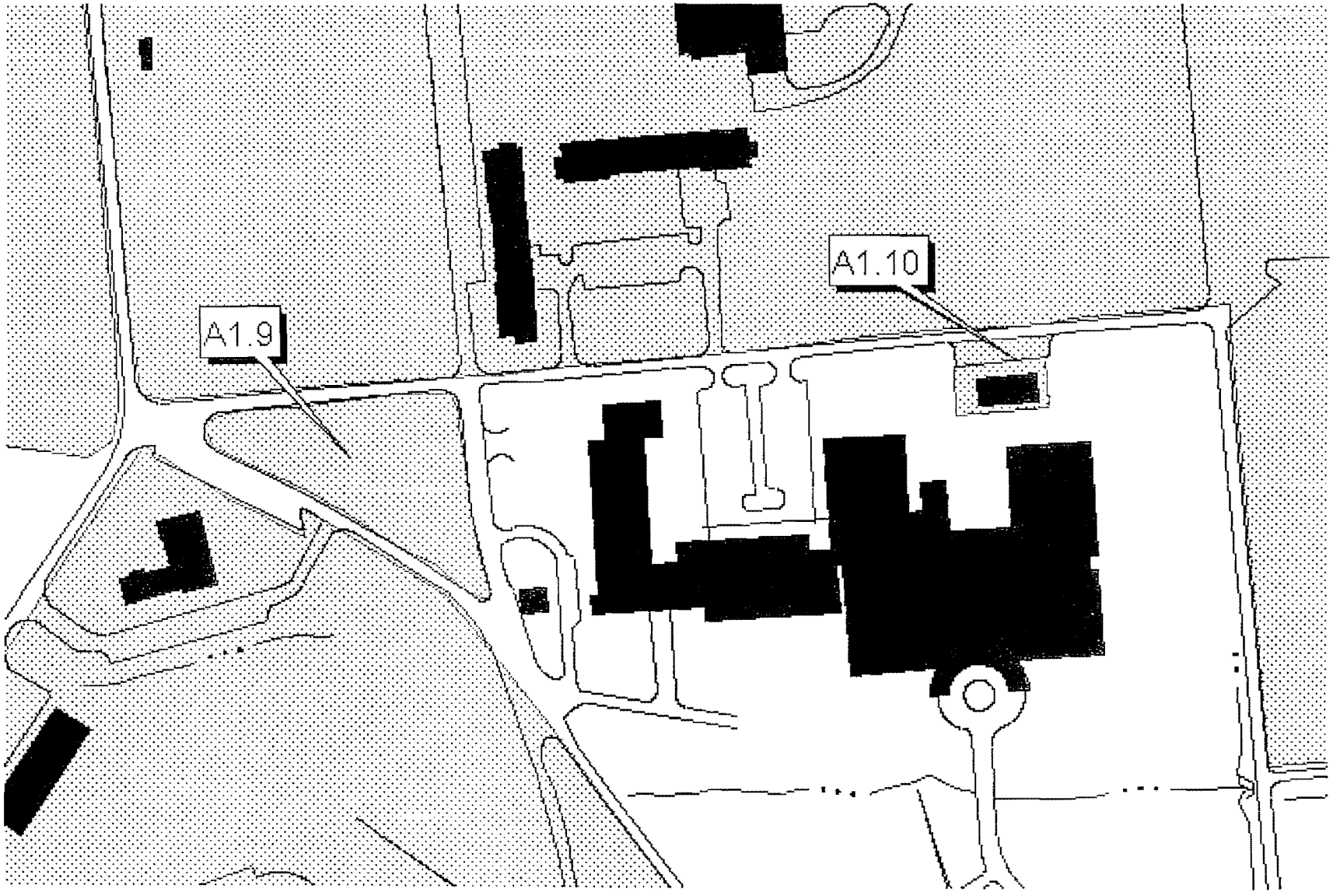
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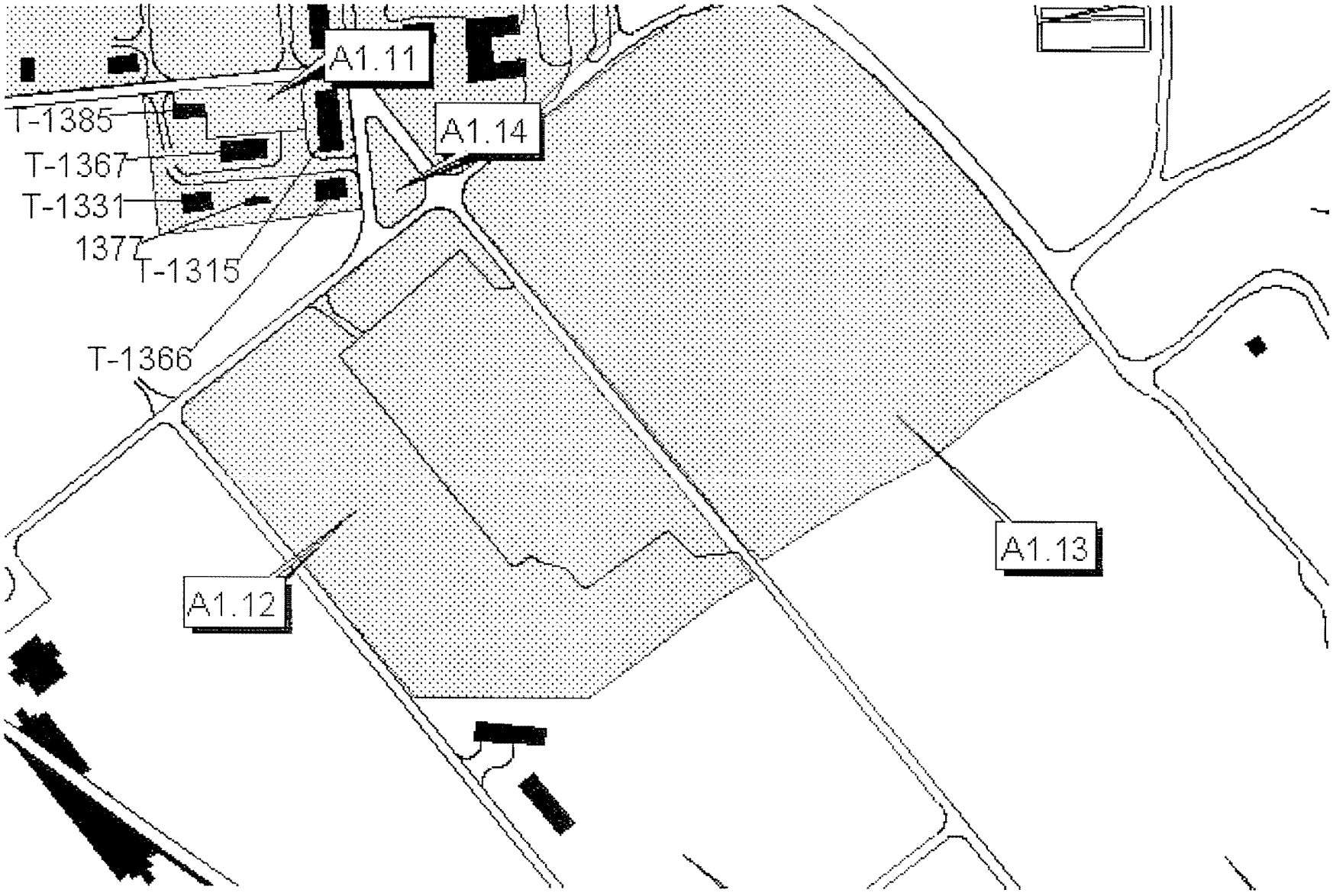
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T-1331
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T-1315
T-1366
A1.12
A1.13

EXHIBIT 2					
SITES REQUIRING ADDITIONAL INVESTIGATION TO DETERMINE IF FORMAL SITE INVESTIGATION IS WARRANTED					
CERFA PARCEL	DSER"S #	REPORT	DESCRIPTION	ACTION	MOA AGREEMENT
MAIN POST					
127(Q)	FTMC-202	CERFA EBS	FORMER SKEET AND TRAP RANGE	SURVEY SITE TO DETERMINE IF LEAD SHOT IS PRESENT	CONDUCT INFORMAL SI AND GO TO FORMAL SI IF NECESSARY
PELHAM RANGE					
84(7)	NOT ELIGIBLE	CERFA EBS	FORESTRY COMPOUND	DRILL AND COLLECT 2 SOIL SAMPLES FROM 8 BORINGS AT THE SITE	CONDUCT INFORMAL SI AND GO TO FORMAL SI IF NECESSARY
123(7)	NOT ELIGIBLE	CERFA EBS	RANGE 4 FOG OIL STORAGE	COLLECT SOIL SAMPLES SIMILAR TO UST PROTOCOL	CONDUCT INFORMAL SI AND GO TO FORMAL SI IF NECESSARY
N/A	POTENTIALLY ELIGIBLE	CHPPM REPORT	WATER SUPPLY WELLS AT PELHAM RANGE	COLLECT AND ANALYZE SAMPLES FROM THE 4 WATER SUPPLY WELLS	CONDUCT INFORMAL SI AND GO TO FORMAL SI IF NECESSARY
N/A	POTENTIALLY ELIGIBLE	CHPPM REPORT	OLD HOMESTEAD WELLS AND SINKHOLES	CONDUCT A MAGNETOMETER SURVEY OF 4 KNOWN SINKHOLES	CONDUCT INFORMAL SI AND GO TO FORMAL SI IF NECESSARY
N/A	POTENTIALLY ELIGIBLE	CHPPM REPORT	TRAINING AREA 6-C BLUE HOLE	COLLECT AND ANALYZE SURFACE WATER AND SEDIMENT SAMPLES	CONDUCT INFORMAL SI AND GO TO FORMAL SI IF NECESSARY

EXHIBIT 3

SITES REQUIRING COMPLETION OF FORMAL SITE INVESTIGATION

CERFA PARCEL	DSERTS #	REPORT	DESCRIPTION	ACTION	MOA AGREEMENT
MAIN POST					
10(7)	FTMC-43*	CERFA EBS	Waste Chemical Storage Area Suspected USTs	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
14(7)	FTMC-13*	CERFA EBS	Boiler Plant #3 Bldg 1076 2 USTs (removed in1991??)	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
16(7)	FTMC-94*	CERFA EBS	1300 Area Motor Pool, Bldg. 1394, 2 USTs (removed in 1991)	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
23(7)	FTMC-12*	CERFA EBS	Boiler Plant #2, Bldg. 2278, 2 USTs	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
46(7)	FTMC-77*	CERFA EBS	Former Decontamination Complex, Bldg 1271, 2 USTs	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
70(7)	FTMC-77*	CERFA EBS	Building 1298 Washrack	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
87(7)	FTMC-43*	CERFA EBS	Waste Chemical Storage Area	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
90(7)	FTMC-17*	CERFA EBS	Chemical School Lab Sump Bldg. 2281	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
93(7)	FTMC-77*	CERFA EBS	Former Decontamination Complex, Bldg 1271	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
135(7)	FTMC-43*	CERFA EBS	Former Gas Station (@Waste Chemical Storage Area)	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
143(7)	FTMC-126*	CERFA EBS	Motor Pool Area 1300	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
148(7)	FTMC-94*	CERFA EBS	Former Motor Pool Area 1300	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
168(7)	FTMC-77*	CERFA EBS	National Guard Building 1224 Washrack	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
172(7)	FTMC-118*	CERFA EBS	Former Print Plant Bldg. 1060	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
174(7)	FTMC-131*	CERFA EBS	National Guard, Small Weapons Storage & Cleaning Compound Bldg.	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
195(7)	FTMC-99*	CERFA EBS	Gas Mask Test Chambers, Bldgs. T-401 & T-402	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
225(7)	FTMC-19*	CERFA EBS	Solvent Storage Bldg. 2282	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
226(7)	FTMC-12*	CERFA EBS	Boiler Plant #2, Bldg. 2278	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
235(7)	FTMC-13*	CERFA EBS	Boiler Plant #3 Bldg 1076	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
65(Q)	FTMC-48*	CERFA EBS	Radiological Facility Bldg. 2281	COMPLETE ONGOING FORMAL SITE INVESTIGATION AND DSERTS ENTRY	
44(7) 45(7) 502(7)	NOT ELIGIBLE	CHPPM REPORT	USTs @ Bldgs. 1201, 1202, 1338	COMPLETE ONGOING FORMAL SITE INVESTIGATION	DISCUSSED DURING MTG BUT LEFT OFF IN ERROR
PELHAM RANGE					
102(7)	FTMC-110	CERFA EBS	Security Operations Test Site	CONFIRM RRSE AND SI COMPLETED	
109(7)	NOT ELIGIBLE	NOT ELIGIBLE	Range 23A	COMPLETE ONGOING SITE INVESTIGATION AND RISK ANALYSIS	FOLLOW THROUGH ON SI TO RISK ANALYSIS
201(7)	FTMC-26	CERFA EBS	Range I	COMPLETE SI AND DSERTS ENTRY	
202(7)	FTMC-36	CERFA EBS	Range J	COMPLETE ONGOING REMEDIAL INVESTIGATION AND DSERTS ENTRY	
203(7)	FTMC-35	CERFA EBS	Range K	CONFIRM RRSE AND SI COMPLETED	CONFIRM SI DOCUMENTATION
204(7)	FTMC-27	CERFA EBS	Range L	COMPLETE ONGOING REMEDIAL INVESTIGATION AND DSERTS ENTRY	
205(7)	FTMC-37	CERFA EBS	Old Water Hole	COMPLETE ONGOING REMEDIAL INVESTIGATION AND DSERTS ENTRY	
206(7)	NOT ENTERED	CERFA EBS	Former Personnel & Equipment Decon Station	COMPLETE ONGOING SITE INVESTIGATION AND DSERTS ENTRY	COMPLETE NEW SI THROUGH RRSE/CTC
207(7)	NOT ENTERED	CERFA EBS	Former Decon Training Area South of Toxic Gas Area	COMPLETE SI AND DSERTS ENTRY	COMPLETE NEW SI THROUGH RRSE/CTC
208(7)	FTMC-111	CERFA EBS	Former AAD Shell Tapping Area	CONFIRM RRSE AND SI COMPLETED	CONFIRM SI DOCUMENTATION
211(7)	NOT ENTERED	CERFA EBS	Former Toxic Gas Area	COMPLETE SI AND DSERTS ENTRY	COMPLETE NEW SI THROUGH RRSE/CTC
163(Q)-X	FTMC-16	CERFA EBS	OB/OD Area	COMPLETE RCRA CLOSURE	
202(Q)-RD	FTMC-57	CERFA EBS	Former Rideout Field Radiological Area	COMPLETE SITE CLOSEOUT	

NOTE: WORK CURRENTLY IN DSERTS AND FUNDED BY BRAC MAY NOT BE ELIGIBLE FOR NON-BRAC DERP FUNDING.

From: <twilliams@adph.state.al.us>
To: <omm@nrc.gov>
Date: 9/15/03 10:13AM
Subject: FYI UpDate from Anniston

As you may recall, last week was the week the Corps of Engineers through their contractor, STEP, was to clean up the area of contamination in LaGarde Park in Anniston, AL. (STEP is Solutions To Environmental Problems, Inc. They are out of Oak Ridge. You can see their web site at www.stepenv.com)

I went to the site on Thursday to see the final work and take samples from the holes after all the contamination had been removed. But things didn't happen as planned.

STEP had estimated that they would only have to remove some 450 cubic yards of material. And they were well on their way to completion when one of sites filled all the containers they had on hand. In fact their HP's instrument indicated that as they went down, the contamination increased. This is the site just down hill from the tree where we found the highest concentrations of Cs-137 on the ground.

I took two samples from site last week. One sample was from this hole giving us higher readings as they dug deeper. I had the lab identify the isotope just to be sure we were still dealing with Cs-137. The second sample was from the area of the tree. Surveys indicated the contaminated material had been removed and I want to confirm that the concentration of Cs-137 was at or below the 11 pCi/gm limit for unrestricted release. On Friday the lab reported that the sample contained 23 pCi/gm. (I had the lab run the sample again over the weekend to confirm their original numbers and they got the same results.) Now the Corps is looking for more money to complete the job. STEP had ordered four more of the LSA boxes and filled them last week. So that is 13 boxes at 90 cubic feet per box. And the one hole still has contaminated material and as of now, the whole area may have more contaminated material. STEP is sending several samples to their lab to confirm our results.

Before you ask the question, other than a few bricks, no other material was found in the holes they dug. The Corps' representative on site is a geologist, and was perplexed with the type of soil found down hole. We have the feeling that this may indeed have been the Rattlesnake Gulch burial site, cleaned up at some time and moved to the other Rattlesnake Gulch site and the holes backfilled with the contaminated dirt that had covered the barrels, boxes or what ever may have been buried. Just a guess. Who knows.
As I learn more and when the Corps decides on their next plan of attack, I'll let you know.

P-4

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

POST OFFICE BOX 301463 36130-1463 • 1400 COLISEUM BLVD. 36110-2059

MONTGOMERY, ALABAMA

WWW.ADEM.STATE.AL.US

(334) 271-7700

JAMES W. WARR
DIRECTOR

DON SIEGELMAN
GOVERNOR

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General Counsel: 394-4332
Air: 279-3044
Land: 279-3050
Water: 279-3051
Groundwater: 270-5631
Field Operations: 272-8131
Laboratory: 277-6718
Mining: 394-4326
Education/Outreach: 394-4383

September 16, 2002

MEMORANDUM

TO: Terry Williams, Radiation Control Div.
AL Department of Public Health

FROM: John Gable

SUBJECT: Additional Data from Sample# AA31841

Soil sample AA 31841, taken at point RO, Rad2, consisted of shale. The shale was ground into smaller pieces using a mortar and pestle to provide a more uniform sample in the marinelli beaker that held it for counting. The sample had isotopes present that are not routinely reported. Most of these isotopes are naturally occuring isotopes associated with the thorium, neptunium, uranium, or actinium decay chains.

The sample was counted for 222,800 seconds.

Quantitated Isotopes with > .90 ED confidence

Isotope	ID conf.	Activity (pci/g)	Activity Uncertainty
K-40	.971	~~2.69~~ 26.9	± 6.3%
Mn-54	.963	.018	± 14.3%
Bi-212	.986	~~3.92~~ 39.2	± 6.2%
Pb-212	.992	4.40	± 6.0%
Bi-214	.982	2.00	± 3.9%
Pb-214	.988	1.99	± 5.3%
Ra-226	.927	~~2.19~~ 2.12	± 21.5%
Th-227	.987	.186	± 3.2%
Ac-228	.969	7.95	± 7.5%
Th-234	.996	3.82	± 7.7%
U-235	.993	.198	± 9.3%

Correction made 9/20/02 between ADEM + ADPH (Gable + Williams)

Quantitated isotopes with <.90 ID confidence

Isotope	ID conf.	Activity	Activity Uncertainty

Birmingham Branch
110 Vulcan Road
Birmingham, Alabama 35209-4702
(205) 942-6168
(205) 941-1603 (Fax)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, Alabama 35603-1333
(256) 353-1713
(256) 340-9359 (Fax)

Mobile Branch
2204 Perimeter Road
Mobile, Alabama 36615-1131
(251) 450-3400
(251) 479-2593 (Fax)

Mobile - Coastal
4171 Commanders Drive
Mobile, Alabama 36615-1421
(251) 432-6533
(251) 432-6598 (Fax)

Printed on Recycled Paper

***** GAMMA SPECTRUM ANALYSIS *****

GAMMA in Soil

Report Generated On	:	9-09-02 12:08:29 AM
Sample Title	:	.45 LITER WATER
Spectrum Description	:	
Sample Identification	:	AA31841
Sample Type	:	H2O
Sample Geometry	:	.45 L
Peak Locate Threshold	:	4.00
Peak Locate Range (in channels)	:	30 - 4095
Peak Area Range (in channels)	:	30 - 4095
Identification Energy Tolerance	:	1.000 keV
Sample Size	:	7.500E+02 G
Sample Taken On	:	9-06-02 10:41:00 AM
Acquisition Started	:	9-06-02 10:13:08 AM
Live Time	:	222800.0 seconds
Real Time	:	222919.9 seconds

Energy Calibration Used Done On	:	8-07-02
Efficiency Calibration Used Done On	:	7-23-01

Rerun of RO Rad 2 (P-4)
Detector 1 instead of
detector 2, 28% eff.
vs 50% eff. for detector 2.

****
***** I N T E R F E R E N C E C O R R E C T E D R E P O R T *****
****

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/G)	Wt mean Activity Uncertainty
	K-40	0.971	2.691413E+01	8.525412E-01 ± 6.3%
	MN-54	0.963	1.757365E-02	1.258030E-03 ± 14.3%
X	NB-95	1.000		
X	XE-131m	0.903		
X	XE-133	0.997		
	RN-209	0.602	1.851842E+00	5.937177E+00
	PB-211	0.625	8.897287E+00	3.622391E+00
	BI-212	0.986	3.915604E+01	2.448044E+00 ± 6.2%
	PB-212	0.992	4.400518E+00	1.308528E-01 ± 6.0%
	BI-214	0.982	2.001315E+00	3.865620E-02 ± 3.9%
	PB-214	0.988	1.987286E+00	5.278236E-02 ± 5.3%
	RA-223	0.601	3.241698E-01	1.056364E-02
	RA-226	0.927	2.118525E+00	2.274530E-01 ± 21.5%
	TH-227	0.987	1.861747E-01	2.963648E-02 ± 8.2%
	AC-228	0.969	7.952505E+00	2.980323E-01 ± 7.5%
X	TH-228	0.470		
X	TH-231	0.790		
X	TH-232	0.931		
	TH-234	0.996	3.821644E+00	1.464790E-01 ± 7.7%
	U-235	0.993	1.980888E-01	9.182143E-03 ± 9.3%
	NP-237	0.698	7.714239E-01	2.886059E-02

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 1.000 sigma

ADPH/Radiation Control

ADPH/Radiation Control
Box 303017
201 Monroe St. Suite 700
Montgomery, AL 36130-3017

Phone: 334-206-5391
FAX: 334-206-5387
email: twilliams@adph.state.al.us

Facsimile

To:	Orysia Bailey
@Fax:	404-562-4955
From:	Terry Williams
Date:	Thursday, August 30, 2001 @ 10:56AM
Re:	Soil Sample Results
Pages:	5, including this

Orysia,

I have just received the lab results from the soil samples I took back on August 1st. Remember these samples are from the pile of "clean dirt" at Rideout Field.

Copy to Rick Button, EPA

ADEM MONTGOMERY LABORATORY

1890-A Cong. Wm. Dickinson Dr., Montgomery, AL 36109

(334)-260-2770[phone] (334)-277-6718 [Fax]

Analysis Report

Date of This Report... 08/15/2001 *Fund Code:* 998 *Date of the Original Report...* 08/15/2001

Send Report... Terry Williams

Source...

Location... RIDEOUT BURAL MOUND #1W

Sample Matrix: SOIL

Sample Collector: TERRY WILLIAMS

Sample Received by: C. D. AMMONS

Lab Sample ID: AA26560

Collection Date: 08/01/2001

Collection Time: 12:00:00 AM

Submittal Date: 08/02/2001

Submittal Time: 4:21:00 PM

Date Analysis Validated... 08/14/2001 *by* WBB

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.
A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region Four to Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

Gamma Isotopes in Solids

Analysis Performed by.... JWG

Parameter	Result	Units	MDL	Date of Analysis	CAS #	Method Reference
Barium-140	< MDL	pCi/g	0.5	08/09/2001	7440-39-3	EPA901.1
Cesium-134	< MDL	pCi/g	0.15	08/09/2001	7440-46-2	EPA901.1
Cesium-137	.274±7.6%	pCi/g	0.02	08/09/2001	7440-46-2	EPA901.1
Cobalt-58	< MDL	pCi/g	0.06	08/09/2001	7440-48-4	EPA901.1
Cobalt-60	.07±11.0%	pCi/g	0.06	08/09/2001	7440-48-4	EPA901.1
Iodine-131	< MDL	pCi/g	0.06	08/09/2001	7553-56-2	EPA901.1
Iron-59	< MDL	pCi/g	0.15	08/09/2001	7439-89-6	EPA901.1
Manganese-54	< MDL	pCi/g	0.06	08/09/2001	7439-96-5	EPA901.1
Potassium-40	3.74±7.8%	pCi/g	0.5	08/09/2001	7440-09-7	EPA901.1
Ruthenium-106	< MDL	pCi/g	0.35	08/09/2001	7440-18-8	EPA901.1
Zinc-65	< MDL	pCi/g	0.07	08/09/2001	7440-66-6	EPA901.1

Soil Sample taken from the west side of pile of "clean " dirt on Rideout Field, Aug1, 2001.

ADEM MONTGOMERY LABORATORY

1890-A Cong. Wm. Dickinson Dr., Montgomery, AL 36109

(334)-260-2770[phone] (334)-277-6718 [Fax]

Analysis Report

Date of This Report... 08/15/2001 *Fund Code:* 998 *Date of the Original Report...* 08/15/2001

Send Report... Terry Williams

Source...

Location... RIDEOUT BURAL MOUND #2S

Sample Matrix: SOIL

Sample Collector: TERRY WILLIAMS

Sample Received by: C. D. AMMONS

Lab Sample ID: AA26561

Collection Date: 08/01/2001

Collection Time: 12:00:00 AM

Submittal Date: 08/02/2001

Submittal Time: 4:21:00 PM

Date Analysis Validated... 08/14/2001 *by* WBB

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.
A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region Four to Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

Gamma Isotopes in Solids *Analysis Performed by....* *JWG*

Parameter	Result	Units	MDL	Date of Analysis	CAS #	Method Reference
Barium-140	< MDL	pCi/g	0.5	08/09/2001	7440-39-3	EPA901.1
Cesium-134	< MDL	pCi/g	0.15	08/09/2001	7440-46-2	EPA901.1
Cesium-137	.273±6.7%	pCi/g	0.02	08/09/2001	7440-46-2	EPA901.1
Cobalt-58	< MDL	pCi/g	0.06	08/09/2001	7440-48-4	EPA901.1
Cobalt-60	.032±16.1%	pCi/g	0.06	08/09/2001	7440-48-4	EPA901.1
Iodine-131	< MDL	pCi/g	0.06	08/09/2001	7553-56-2	EPA901.1
Iron-59	< MDL	pCi/g	0.15	08/09/2001	7439-89-6	EPA901.1
Manganese-54	< MDL	pCi/g	0.06	08/09/2001	7439-96-5	EPA901.1
Potassium-40	4.62±6.8%	pCi/g	0.5	08/09/2001	7440-09-7	EPA901.1
Ruthenium-106	< MDL	pCi/g	0.35	08/09/2001	7440-18-8	EPA901.1
Zinc-65	< MDL	pCi/g	0.07	08/09/2001	7440-66-6	EPA901.1

Soil Sample taken from the south side of pile of "clean " dirt on Rideout Field, Aug1, 2001.

ADEM MONTGOMERY LABORATORY

1890-A Cong. Wm. Dickinson Dr., Montgomery, AL 36109

(334)-260-2770[phone] (334)-277-6718 [Fax]

Analysis Report

Date of This Report... 08/20/2001 *Fund Code:* 998 *Date of the Original Report...* 08/20/2001

Send Report... **Terry Williams**

Source...

Location... RIDEOUT BURAL MOUND #3E

Sample Matrix: SOIL

Sample Collector: TERRY WILLIAMS

Sample Received by: C. D. AMMONS

Lab Sample ID: **AA26562**

Collection Date: 08/01/2001

Collection Time: 12:00:00 AM

Submittal Date: 08/02/2001

Submittal Time: 4:21:00 PM

Date Analysis Validated... 08/16/2001 *by* WBB

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.
A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region Four to Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

Gamma Isotopes in Solids *Analysis Performed by....* *JWG*

Parameter	Result	Units	MDL	Date of Analysis	CAS #	Method Reference
Barium-140	< MDL	pCi/g	0.5	08/15/2001	7440-39-3	EPA901.1
Cesium-134	< MDL	pCi/g	0.15	08/15/2001	7440-46-2	EPA901.1
Cesium-137	.990±5.6%	pCi/g	0.02	08/15/2001	7440-46-2	EPA901.1
Cobalt-58	< MDL	pCi/g	0.06	08/15/2001	7440-48-4	EPA901.1
Cobalt-60	< MDL	pCi/g	0.06	08/15/2001	7440-48-4	EPA901.1
Iodine-131	< MDL	pCi/g	0.06	08/15/2001	7553-56-2	EPA901.1
Iron-59	< MDL	pCi/g	0.15	08/15/2001	7439-89-6	EPA901.1
Manganese-54	< MDL	pCi/g	0.06	08/15/2001	7439-96-5	EPA901.1
Potassium-40	4.21±7.1%	pCi/g	0.5	08/15/2001	7440-09-7	EPA901.1
Ruthenium-106	< MDL	pCi/g	0.35	08/15/2001	7440-18-8	EPA901.1
Zinc-65	< MDL	pCi/g	0.07	08/15/2001	7440-66-6	EPA901.1

Soil Sample taken from the east side of pile of "clean " dirt on Rideout Field, Aug1, 2001.

ADEM MONTGOMERY LABORATORY

1890-A Cong. Wm. Dickinson Dr., Montgomery, AL 36109

(334)-260-2770[phone] (334)-277-6718 [Fax]

Analysis Report

Date of This Report... 08/20/2001 *Fund Code:* 998 *Date of the Original Report...* 08/20/2001

Send Report... Terry Williams

Source...

Location... RIDEOUT BURAL MOUND #4N

Sample Matrix: SOIL

Sample Collector: TERRY WILLIAMS

Sample Received by: C. D. AMMONS

Lab Sample ID: AA26563

Collection Date: 08/01/2001

Collection Time: 12:00:00 AM

Submittal Date: 08/02/2001

Submittal Time: 4:21:00 PM

Date Analysis Validated... 08/16/2001 *by* WBB

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.
A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region Four to Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

Gamma Isotopes in Solids — *Analysis Performed by....* *JWG*

Parameter	Result	Units	MDL	Date of Analysis	CAS #	Method Reference
Barium-140	< MDL	pCi/g	0.5	08/15/2001	7440-39-3	EPA901.1
Cesium-134	< MDL	pCi/g	0.15	08/15/2001	7440-46-2	EPA901.1
Cesium-137	.336±7.4%	pCi/g	0.02	08/15/2001	7440-46-2	EPA901.1
Cobalt-58	< MDL	pCi/g	0.06	08/15/2001	7440-48-4	EPA901.1
Cobalt-60	< MDL	pCi/g	0.06	08/15/2001	7440-48-4	EPA901.1
Iodine-131	< MDL	pCi/g	0.06	08/15/2001	7553-56-2	EPA901.1
Iron-59	< MDL	pCi/g	0.15	08/15/2001	7439-89-6	EPA901.1
Manganese-54	< MDL	pCi/g	0.06	08/15/2001	7439-96-5	EPA901.1
Potassium-40	3.77±7.8%	pCi/g	0.5	08/15/2001	7440-09-7	EPA901.1
Ruthenium-106	< MDL	pCi/g	0.35	08/15/2001	7440-18-8	EPA901.1
Zinc-65	< MDL	pCi/g	0.07	08/15/2001	7440-66-6	EPA901.1

Soil Sample taken from the north side of pile of "clean " dirt on Rideout Field, Aug1, 2001.

STATE OF ALABAMA DEPARTMENT OF

PUBLIC HEALTH

Donald E. Williamson, MD
State Health Officer

May 14, 1998

MEMORANDUM

TO: NRC (Oryshia Bailey)
EPA (Richard Button)
USA Chemical School (John May)

FROM: James T. Williams
Office of Radiation Control

SUBJECT: Well Water from Pelham Range

This Department has completed radiological analysis of the drinking from wells located in the Pelham Range as well as one sample from Cane Creek. These samples were taken to determine if any leaching had occurred from the "Burial Mound" on Ridecut Field down to the water table in the area. The reports from the Alabama Department of Environmental Management are attached. Their analysis shows that there in fact is no contamination of the water due to radiological material.

Post-It™ brand fax transmittal memo 7671	# of pages ▸ 6
To Oryshia Bailey	From Jerry Williams
Co. NRC	Co. Alabama
Dept.	Phone # 334 206 5391
Fax #	Fax #

The RSA Tower • 201 Monroe Street • Montgomery, AL 36104
P.O. Box 303017 • Montgomery, AL 36130-3017

ADEM CENTRAL LAB

05/11/98

ADEM CENTRAL LAB

To: Dept. of Public
Division of Radiation Control
434 Monroe St.
Montgomery, Al. 36130

Source..... RIDEOUT FIELD BLDG 8203
Location..
Sample Collector.. TERRY WILLIAMS
Sample Matrix..... WATER
Fund Code No..... 998

Date Collected..04/29/98
Date Submitted.. 04/29/98

Attention: TERRY WILLIAMS

Sample No.	Analysis	Result	Units	MDL	Date Completed	Method
AA09546						
	Radiological Analysis					
	Barium-140	< MDL	pCi/L	15	05/09/98	EPA 901.1
	Cesium-134	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cesium-137	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cobalt-58	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cobalt-60	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Gross Alpha in Liquids	< MDL	pCi/L	1.0	05/08/98	EPA 900.0
	Gross Beta in Liquids	< MDL	pCi/L	2.0	05/08/98	EPA 900.0
	Iodine-131	< MDL	pCi/L	1	05/09/98	EPA 901.1
	Iron-59	< MDL	pCi/L	15	05/09/98	EPA 901.1
	Manganese-54	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Potassium-40	< MDL	pCi/L	100	05/09/98	EPA 901.1
	Ruthenium-106	< MDL	pCi/L	75	05/09/98	EPA 901.1
	Tritium in Liquids	< MDL	pCi/L	330	05/11/98	EPA 906.0
	Zinc-65	< MDL	pCi/L	15	05/09/98	EPA 901.1

ADEM CENTRAL LAB

05/11/98

ADEM CENTRAL LAB

To: Dept. of Public
Division of Radiation Control
434 Monroe St.
Montgomery, Al. 36130

Source..... RIDEOUT FIELD BLDG 8415
Location..
Sample Collector.. TERRY WILLIAMS
Sample Matrix..... WATER
Fund Code No..... 998

Date Collected..04/29/98
Date Submitted.. 04/29/98

Attention: TERRY WILLIAMS

Sample No.	Analysis	Result	Units	MDL	Date Completed	Method
AA09545						
	Radiological Analysis					
	Barium-140	< MDL	pCi/L	15	05/09/98	EPA 901.1
	Cesium-134	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cesium-137	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cobalt-58	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cobalt-60	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Gross Alpha in Liquids	< MDL	pCi/L	1.0	05/08/98	EPA 900.0
	Gross Beta in Liquids	< MDL	pCi/L	2.0	05/08/98	EPA 900.0
	Iodine-131	< MDL	pCi/L	1	05/09/98	EPA 901.1
	Iron-59	< MDL	pCi/L	15	05/09/98	EPA 901.1
	Manganese-54	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Potassium-40	< MDL	pCi/L	100	05/09/98	EPA 901.1
	Ruthenium-106	< MDL	pCi/L	75	05/09/98	EPA 901.1
	Tritium in Liquids	< MDL	pCi/L	330	05/11/98	EPA 906.0
	Zinc-65	< MDL	pCi/L	15	05/09/98	EPA 901.1

ADEM CENTRAL LAB

05/11/98

ADEM CENTRAL LAB

To: Dept. of Public
Division of Radiation Control
434 Monroe St.
Montgomery, Al. 36130

Source..... CANE CREEK
Location..
Sample Collector.. TERRY WILLIAMS
Sample Matrix..... WATER
Fund Code No..... 998

Date Collected..04/29/98
Date Submitted.. 04/29/98

Attention: TERRY WILLIAMS

Sample No.	Analysis	Result	Units	MDL	Date Completed	Method
AA09544						
	Radiological Analysis					
	Barium-140	< MDL	pCi/L	15	05/09/98	EPA 901.1
	Cesium-134	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cesium-137	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cobalt-58	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cobalt-60	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Gross Alpha in Liquids	1.82±161%	pCi/L	1.0	05/08/98	EPA 900.0
	Gross Beta in Liquids	< MDL	pCi/L	2.0	05/08/98	EPA 900.0
	Iodine-131	< MDL	pCi/L	1	05/09/98	EPA 901.1
	Iron-59	< MDL	pCi/L	15	05/09/98	EPA 901.1
	Manganese-54	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Potassium-40	< MDL	pCi/L	100	05/09/98	EPA 901.1
	Ruthenium-106	< MDL	pCi/L	75	05/09/98	EPA 901.1
	Tritium in Liquids	< MDL	pCi/L	330	05/11/98	EPA 906.0
	Zinc-65	< MDL	pCi/L	15	05/09/98	EPA 901.1

ADEM CENTRAL LAB

05/11/98

ADEM CENTRAL LAB

To: Dept. of Public
Division of Radiation Control
434 Monroe St.
Montgomery, Al. 36130

Source..... RIDEOUT FIELD BLDG 8605
Location..
Sample Collector.. TERRY WILLIAMS
Sample Matrix..... WATER
Fund Code No..... 998

Date Collected..04/29/98
Date Submitted.. 04/29/98

Attention: TERRY WILLIAMS

Sample No.	Analysis	Result	Units	MDL	Date Completed	Method
AA09543						
	Radiological Analysis					
	Barium-140	< MDL	pCi/L	15	05/09/98	EPA 901.1
	Cesium-134	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cesium-137	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cobalt-58	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Cobalt-60	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Gross Alpha in Liquids	1.54±192%	pCi/L	1.0	05/08/98	EPA 900.0
	Gross Beta in Liquids	< MDL	pCi/L	2.0	05/08/98	EPA 900.0
	Iodine-131	< MDL	pCi/L	1	05/09/98	EPA 901.1
	Iron-59	< MDL	pCi/L	15	05/09/98	EPA 901.1
	Manganese-54	< MDL	pCi/L	8	05/09/98	EPA 901.1
	Potassium-40	< MDL	pCi/L	100	05/09/98	EPA 901.1
	Ruthenium-106	< MDL	pCi/L	75	05/09/98	EPA 901.1
	Tritium in Liquids	< MDL	pCi/L	330	05/11/98	EPA 906.0
	Zinc-65	< MDL	pCi/L	15	05/09/98	EPA 901.1

ADEM CENTRAL LAB

05/11/98

ADEM CENTRAL LAB

To: Dept. of Public
Division of Radiation Control
434 Monroe St.
Montgomery, Al. 36130

Source..... FT MCCLELLAN
Location.. NORTH WELL
Sample Collector.. WILLIAMS
Sample Matrix..... WATER
Fund Code No..... 998

Date Collected..04/15/98
Date Submitted.. 04/16/98

Attention: TERRY WILLIAMS

Sample No.	Analysis	Result	Units	MDL	Date Completed	Method
AA09371						
	Radiological Analysis					
	Barium-140	< MDL	pCi/L	15	04/16/98	EPA 901.1
	Cesium-134	< MDL	pCi/L	8	04/16/98	EPA 901.1
	Cesium-137	< MDL	pCi/L	8	04/16/98	EPA 901.1
	Cobalt-58	< MDL	pCi/L	8	04/16/98	EPA 901.1
	Cobalt-60	< MDL	pCi/L	8	04/16/98	EPA 901.1
	Gross Alpha in Liquids	1.29±241%	pCi/L	1.0	05/08/98	EPA 900.0
	Gross Beta in Liquids	< MDL	pCi/L	2.0	05/08/98	EPA 900.0
	Iodine-131	< MDL	pCi/L	1	04/16/98	EPA 901.1
	Iron-59	< MDL	pCi/L	15	04/16/98	EPA 901.1
	Manganese-54	< MDL	pCi/L	8	04/16/98	EPA 901.1
	Potassium-40	< MDL	pCi/L	100	04/16/98	EPA 901.1
	Ruthenium-106	< MDL	pCi/L	75	04/16/98	EPA 901.1
	Zinc-65	< MDL	pCi/L	15	04/16/98	EPA 901.1

ALABAMA DIVISION OF RADIATION CONTROL

MONTGOMERY, ALABAMA

IS SENDING TO: NRC Region II

FACSIMILE NUMBER: 1-404-562-4955 **DATE:** 8/22/97

THE FOLLOWING 1 **PAGE(S) ARE FOR:** Brysia Masnyk Bailey

FROM: Terry Williams

RETURN FAX NUMBER: (334)206-5387
VERIFICATION NUMBER: (334)206-5391

SPECIAL INSTRUCTIONS:
Please pass to Mrs Bailey for her return

ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
05/11/95

To: Radiological Health Division
Dept. of Public Health
State Office Building
Montgomery AL 36130

Attn: Terry Williams

Lab number : 5105239
Sample number : 998
Sample matrix : SEDIMENT

Report Date: 05/11/95

COLLECTION INFORMATION
Date/Time/By: 05/02/95 WILLIAMS
Location : FT McCLELLAN WWTP

ADEM CENTRAL LABORATORY
- RESULTS REPORT -

May 11, 1995

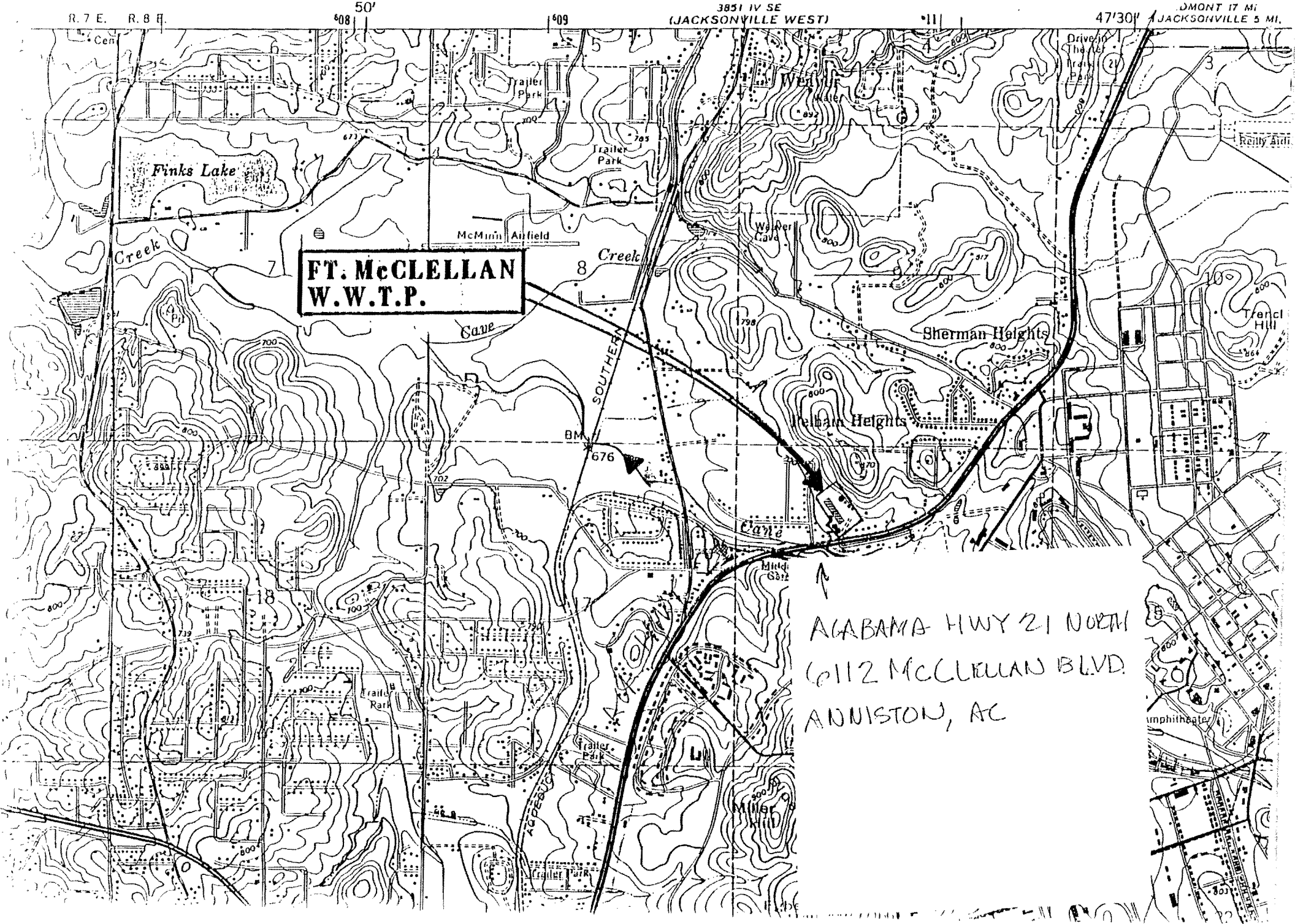
Lab#	Test	Result	Units	DL*	Analdate
5105239	Barium-140	<.50	pC/g		05/09/95
	Cobalt-58	<.06	pC/g		05/09/95
	Cobalt-60	<.06	pC/g		05/09/95
	Cesium-134	<.15	pC/g		05/09/95
	Cesium-137	0.28±0.01	pC/g		05/09/95
	Iron-59	<.15	pC/g		05/09/95
	Iodine-131	<.06	pC/g		05/09/95
	Potassium-40	2.72±1.1	pC/g		05/09/95
	Manganese-54	<.06	pC/g		05/09/95
	Radium 226 in Solids	0.10±0.01	pCi/g		05/09/95
	Radium 228 in Solids	0.82±0.03	pCi/g		05/09/95
	Ruthenium-106	<.35	pC/g		05/09/95
	Zinc-65	<.07	pC/g		05/09/95

Station: Ft McClellan WWTP
Matrix: Sediment
Lab#: 5105239
Collection Date: May 2, 1995
By: Williams

RECEIVED
MAY 15 1995
RADIOLOGICAL HEALTH SECTION

* U denotes results less than the instrument detection limit.

UNITED STATES
DEP MENT OF THE ARMY
PS OF ENGINEERS



ADEM CENTRAL LABORATORY

- SAMPLE ANALYSIS REPORT -
05/11/95

To: Radiological Health Division
Dept. of Public Health
State Office Building
Montgomery AL 36130

Attn: Terry Williams

Lab number : 5105239 Report Date: 05/11/95
Sample number : 998
Sample matrix : SEDIMENT

COLLECTION INFORMATION
Date/Time/By: 05/02/95 WILLIAMS
Location : FT McCLELLAN WWTP

ADEM CENTRAL LABORATORY
- RESULTS REPORT - May 11, 1995

Lab#	Test	Result	Units	DL*	Analdate
5105239	Barium-140	<.50	pC/g		05/09/95
	Cobalt-58	<.06	pC/g		05/09/95
	Cobalt-60	<.06	pC/g		05/09/95
	Cesium-134	<.15	pC/g		05/09/95
	Cesium-137	0.28±0.0	pC/g		05/09/95
		1			
	Iron-59	<.15	pC/g		05/09/95
	Iodine-131	<.06	pC/g		05/09/95
	Potassium-40	2.72±1.1	pC/g		05/09/95
	Manganese-54	<.06	pC/g		05/09/95
	Radium 226 in Solids	0.10±0.0	pCi/g		05/09/95
		1			
	Radium 228 in Solids	0.82±0.0	pCi/g		05/09/95
		3			
	Ruthenium-106	<.35	pC/g		05/09/95
	Zinc-65	<.07	pC/g		05/09/95

Station: Ft McClellan WWTP
Matrix: Sediment
Lab#: 5105239
Collection Date: May 2, 1995

RECEIVED

* U denotes results less than the instrument detection limit.

Figure 2 - Sample Results (Dry Sample)
Treatment Plants
Results In pC/g

5/2/95

Radioisotope	Redstone Arsenal	Ft. McClellan	Tuscaloosa	Valley	Village	Southside	North	Econchate	Wyle
Barium-140	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cobalt-58	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Cobalt-60	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.38±0.02
Cesium-134	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Cesium-137	<0.05	0.28±0.01	<0.05	0.09	<0.05	<0.05	0.006±15.7%	<0.05	0.087±0.008
Iodine-131	<0.06	<0.06	0.03	<0.06	<0.06	<0.06	<0.06	0.018±4.4%	<0.06
Potassium-40	1.22±0.10	2.72±1.1	1.01	1.05±0.002%	1.00	0.46±5.1%	0.72±2.2%	0.174±5.4%	3.42±0.1%
Manganese-54	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.13±0.008
Radium-226 (In Solids)	0.096±0.009	0.10±0.01	--	--	--	--	--	--	--
Radium-228 (In Solids)	0.64±0.03	0.82±0.03	--	--	--	0.28±3.9%	--	--	--
Ruthenium-106	<0.35	<0.35	<0.33	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
Zinc-65	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Iron-59	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Gross Alpha (In Solids)	--	--	--	--	--	--	--	--	9.93±39.94%
Gross Beta (In Soil)	--	--	--	--	--	--	--	--	56.77±10.51%

* MUNICIPAL DMR TRACKING SYSTEM *

/A NAME > ANNISTON FT McCLELLAN WWTP NPID > AL0024520

Receiving Waters > CANE CREEK TO COOSA RIVER

Permit Average Flow > 4.500 MGD PERMIT EXPIRATION DATE > 04/27/94

Date	Qavg (MGD)	BOD INF	BOD EFF	TSS INF	TSS EFF	NH3 EFF	TKN EFF	FC EFF	pH Min	pH Max	D.O. Min	TRC Min	TRC Max	TRC Min
09 / 93	1.100	149.0	12.0	87.0	8.0	6.00			6.70	7.20	2.00			
10 / 93	1.000	184.0	11.0	133.0	8.0	5.70			6.60	8.40	2.00			
11 / 93	1.200	144.0	16.0	104.0	14.0	6.70			6.80	7.20	2.00			
12 / 93	1.400	141.0	13.0	100.0	10.0	3.90			7.00	7.80	2.00			
01 / 94	1.700	129.0	17.0	104.0	12.0	5.20			6.90	7.40	3.00			
02 / 94	2.100	109.0	16.0	78.0	11.0	5.10			6.80	7.30	4.00			
03 / 94	2.100	129.0	13.0	93.0	10.0	4.50			6.90	7.10	4.60			
04 / 94	2.200	109.0	10.0	59.0	9.0	3.40			6.90	7.20	4.00			
05 / 94	1.800	127.0	12.0	87.0	11.0	4.90			6.90	7.30	2.40			
06 / 94	1.600	160.0	21.0	131.0	10.0	12.00			7.10	7.20	1.80			
07 / 94	1.900	103.0	6.0	99.0	5.0	4.20			7.10	7.90	4.00			
08 / 94	1.400	116.0	5.0	101.0	5.0	2.90			6.80	7.40	6.25			
Average >	1.625	133.3	12.7	98.0	9.4	5.38			6.60	8.40	3.17			