

March 19, 2007

James M. Miller  
Chief, Environmental Division  
Public Works  
Fort Drum Military Reservation  
85 First Street West  
Ft. Drum, New York 13602-5097

**Re: Area 1795/World War II Landfill**

Dear Mr. Miller,

The New York State Department of Environmental Conservation (The Department) has received the "Draft Pre-Design Investigation Work Plan for World War II Landfill, Gasoline Alley, Area 1795 at Fort Drum, New York." dated March 1, 2007. The work plan presents locations and procedures for the collection and analysis of surface soil/debris samples at the World War Landfill. The purpose of the investigation is to better delineate areas to be excavated as part of the Department approved corrective action program.

Upon review, The Department finds the Pre-Design Investigation Work Plan to be acceptable and is hereby approved.

Please contact the Department within 10 business days prior to the start of field activities to arrange for Department oversight.

If you have questions regarding this issue, please contact me at (518) 402-8594.

Sincerely,

Kent D. Johnson  
Engineering Geologist II

cc: E. Blackmer, Region 6  
J. Reidy, U.S. EPA, Region 2

**Pre-Design Investigation Work Plan  
World War II Landfill  
Area 1795, Fort Drum, New York**

*Prepare for:*



Cape Environmental Management Inc  
180 Gordon Drive, Suite 102  
Exton, Pennsylvania 19341-1340

*Prepared by:*

EA Engineering P.C. and Its Affiliate  
EA Science and Technology  
6712 Brooklawn Parkway  
Syracuse, New York 13211-2158

June 2007  
Revision: Final  
EA Project No. 30004.04

**Pre-Design Investigation Work Plan  
World War II Landfill  
Area 1795, Fort Drum, New York**

*Prepared for*

CAPE Environmental Management, Inc.  
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Exton, Pennsylvania 19341-1340

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EA Engineering, P.C. and Its Affiliate  
EA Science and Technology  
6712 Brooklawn Parkway  
Syracuse, New York 13211-2158



James C. Hayward, P.E.  
Project Manager

27 June 2007

Date



Christopher J. Canonica, P.E.  
Quality Assurance/Quality Control Officer/Senior Technical Reviewer

27 June 2007

Date

June 2007  
Revision: FINAL  
EA Project No. 30004.04

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2	Site map.
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## 1. INTRODUCTION AND PROJECT OVERVIEW

EA Engineering, P.C. and its affiliate EA Science and Technology developed a Pre-Design Investigation Work Plan in order to delineate the area(s) where limited excavation and offsite disposal are required to address surface soil/debris identified during previous investigations of the World War II (WWII) Landfill located adjacent to Area 1795, Gasoline Alley, Fort Drum, New York (Figure 1). Limited excavation/offsite disposal was selected as the remedial alternative for the surface/soil debris impacts as part of the Corrective Measures Study developed for Area 1795 (EA 2004<sup>1</sup>). The pre-design investigation will include surface soil/debris sampling in the vicinity of four previous sample locations where concentrations of contaminants of concern were reported above the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Manual 4046 guidance values.

### 1.1 BACKGROUND

The WWII Landfill is a former surface dumping area located approximately 1,200 ft west of the former Area 1795 fueling facility along Gasoline Alley (Figure 2). The WWII Landfill is situated in a wooded area and is bounded by railroad tracks to the south and an unnamed creek to the west and southwest. Little information is available regarding the history of waste disposal practices at the WWII Landfill. The area contains mounds of debris consisting of slag ash, a variety of metal debris, miscellaneous car parts (e.g., wheels, axles, batteries, etc.), broken mess hall items (e.g., glass bottles, plates, cups, dishes, etc.), and other miscellaneous construction debris.

The first subsurface investigation at the WWII Landfill was performed in 1990 (CDM 1990<sup>2</sup>). Subsurface soil samples collected from the 6 monitoring wells installed at the site contained concentrations of metals, including barium, chromium, and lead, below NYSDEC guidance values. Following a 1995 geophysical investigation, which included unexploded ordnance clearance and a conductivity survey to characterize the location and nature of buried materials, 9 surface debris samples and 10 subsurface soil samples were collected from the site (EA 1998<sup>3</sup>). Several pesticides (aldrin, dieldrin, and heptachlor epoxide) and two polychlorinated biphenyls were reported above NYSDEC guidance values in surficial soil at one of the surface soil sampling locations (WWII-SSB4) (Figure 2). Several metals, including arsenic, beryllium, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, and zinc, and two polycyclic aromatic hydrocarbons were also reported in excess of NYSDEC guidance values at WWII-SSB1, WWII-SSB3, and WWII-SSB6.

- 
1. EA Science and Technology. 2004. Corrective Measures Study, Area 1795, Gasoline Alley, Fort Drum, New York. Final.
  2. CDM. 1990.
  3. EA Science and Technology. 1998.

## 1.2 PROJECT SCOPE

A Pre-Design Investigation Work Plan is required to detail the investigation activities in accordance with the Basewide Quality Assurance Program Plan (QAPP) (Malcom Pirnie 2001)<sup>4</sup> and should include the following components (at a minimum):

- Site-Specific Quality Assurance Project Plan
- Field Sampling Plan
- Site-Specific Health and Safety Plan
- Project schedule.

## 1.3 WORK PLAN ORGANIZATION

This Pre-Design Investigation Work Plan has been developed in order to achieve the project goals. This Work Plan, while a standalone document, is based upon ongoing remedial efforts at Area 1795, Fort Drum, New York. Where appropriate, the technical guidelines and procedures for conducting field work will be briefly described in this document, and the reader will be referenced to the appropriate sections of previously approved documents for a detailed discussion of guidelines and procedures. These documents include:

- Basewide QAPP
- Health and Safety Plan, Area 1795, Gasoline Alley, Fort Drum, New York (Cape Environmental 2007)<sup>5</sup>.

The Basewide QAPP addresses field sampling and analytical procedures and generic quality assurance/quality control protocols applicable to all Fort Drum Installation Restoration Program projects. Accordingly, these procedures and protocols are not restated in this Work Plan and are addressed through reference only. Specifically, the Basewide QAPP contains basewide protocols for documentation and chain-of-custody, instrument calibration, equipment decontamination, analytical procedures, data reduction and reporting, internal quality control, performance and system audits, preventive maintenance, data assessment procedures, corrective actions, and QA reporting.

This Work Plan is organized into the following sections:

- **Section 1 – Introduction and Project Overview**—Presents an introduction to the project as a whole and outlines the Work Plan organization and project description.
- **Section 2 – Project Organization and Responsibilities**—Identifies key personnel and responsibilities of those individuals not specifically described in the Basewide QAPP.

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4. Malcolm Pirnie. 2001. Quality Assurance Program Plan, Fort Drum, New York.

5. Cape Environmental Inc. 2007. Health and Safety Plan, Area 1795, Gasoline Alley, Fort Drum, New York

- **Section 3 – Quality Assurance Objectives**—Presents general requirements for precision, accuracy, representativeness, completeness, and comparability which are developed to achieve the required level of data quality.
- **Section 4 – Field Activities**—Provides procedures for collection of additional surface soil/debris samples to delineate the areal extent of contaminated surface soil/debris.
- **Section 5 – Project Schedule**—Provides the proposed schedule for completion of the field and report writing activities.

An addendum to the Site-Specific Safety, Health, and Emergency Response Plan for the WWII Landfill pre-design investigation activities is provided in Appendix A.

## 2. PROJECT ORGANIZATION AND RESPONSIBILITIES

### 2.1 PROJECT MANAGEMENT

Activities associated with the pre-design investigation at the WWII Landfill will be managed through an organized effort of scientific and engineering personnel and technical resources. These efforts will employ pre-approved field procedures, sampling techniques, and analytical methods to accomplish the project objectives. Effective program organization will accommodate these requirements while maintaining a manageable degree of control over these activities.

The table below illustrates the project organization for the accomplishment of this effort. The key technical management of this investigation will be accomplished by the Project Manager and assigned project team. Additional individuals will be made available if warranted. The roles of the personnel comprising the project implementation team are described in detail in Section 2 of the Basewide QAPP. Key members of project team include:

Title	Individual
Project Manager	James Hayward, P.E.
Quality Assurance/Quality Control Officer/ Senior Technical Reviewer	Chris Canonica, P.E.
Task Manager	Joe Von Uderitz
Field/Construction Manager	John Hudacek, Cape Environmental
Program Safety and Health Officer	Peter Garger, CIH
Site Safety and Health Officer	Joe Von Uderitz

### 2.2 QUALIFICATIONS OF PERSONNEL

Project personnel will be qualified to perform the tasks to which they are assigned. Appraisal of the qualifications of field personnel will be made by the Task Manager and will include comparison of the job assignment requirements with the relevant experience and training of the proposed personnel. It will also include a determination of further training requirements and, if required, by what method. Onsite training is an acceptable method, provided such training is given by a person qualified to perform the trainee's assignment and that this training does not otherwise impede the progress of the project.

### 2.3 PROJECT SUBCONTRACTORS

Successful implementation of the field activities proposed in this Work Plan will require the use of a subcontractor for the analysis of surface soil/debris samples. A subcontractor will be procured by soliciting bids from three qualified subcontractors and selecting the subcontractor presenting the lowest yet most technically qualified bid.

### **3. QUALITY ASSURANCE OBJECTIVES**

Quality assurance objectives (QAOs) include data quality objectives (DQOs) and quality control objectives (QCOs). General QAOs for environmental investigations and remedial activities conducted at Fort Drum under the Installation Restoration Program are presented in Section 3 of the Basewide QAPP. Section 3 of the Basewide QAPP also details general requirements for QCOs (including precision, accuracy, representativeness, completeness, and comparability) and DQOs which are developed to achieve the required level of data quality for the anticipated data uses and implemented so that the data are technically defensible. The Basewide QAPP comprehensively details the DQOs and QCOs for the environmental investigation and remedial action activities specified in this Pre-Design Investigation Work Plan.

The project-specific data uses and data objectives of this Pre-Design Investigation Work Plan are to delineate the area(s) where limited excavation and offsite disposal would be implemented to address surface soil/debris identified during previous investigations of the WWII Landfill.

#### **3.1 DATA QUALITY OBJECTIVES**

DQOs are developed to ensure that the data collected will be of sufficient quantity and quality for their intended uses. Data use is defined by the types of decisions that will be made based on the data, required quantity and precision of the data, and methods by which data will be collected and analyzed. The data generated during this study will achieve DQO Level II for field analytical methods and data, e.g., photoionization detector, and DQO Level III for laboratory analytical methods. DQOs will be attained through implementation of the Basewide QAPP.

#### **3.2 QUALITY CONTROL OBJECTIVES**

Generic objectives for precision, accuracy, representativeness, completeness, comparativeness, and sensitivity are presented in Section 3 of the Basewide QAPP. Supplemental analytical information is presented in Appendix C of the Basewide QAPP, which presents project- and laboratory-specific quality control information that is applicable to the various SW-846 analytical methodologies proposed for the WWII Landfill pre-design investigation. Included in Appendix C of the Basewide QAPP are method specific reporting limits for soil data, and quality control criteria for precision and accuracy control limits for matrix spikes, matrix spike duplicates, and laboratory control samples.

## 4. FIELD ACTIVITIES

The pre-design field investigation will consist of the collection of additional surface soil/debris samples to delineate the areal extent of contaminated surface soil/debris in the four previously identified locations (WWII-SS01, WWII-SS03, WWII-SS04, and WWII-SS06) (Figure 2). The analytical results of the pre-design investigation will also assist in the determination of disposal options (i.e., as hazardous or non-hazardous waste).

### 4.1 Collection of Soil Samples

The pre-design investigation will include collection of a minimum of 4 surface soil/debris samples located approximately 25 ft in each direction (i.e., north, south, east, and west) from each of the previous sampling locations as illustrated in Figures 3 and 4. The previous sampling locations will be identified using a 100-ft surveyed grid established for the site. A minimum of 16 surface soil/debris samples will be collected as part of the pre-design investigation.

The soil samples will be collected by hand augering through the surface debris in 0.5-ft intervals to approximately 3 ft below ground surface, until native material is encountered<sup>6</sup>. The soil core will be visually inspected and described according to the Unified Soil Classification System, screened with a photoionization detector, and staged on polyethylene sheeting. The sample interval will be selected based on the presence of visual staining or headspace screening with a photoionization detector. If no visual staining or elevated photoionization detector readings are observed, the sample should be collected from the 0- to 0.5-ft interval. Prior to sampling, the soil sample interval will be placed in a stainless steel bowl and homogenized using a stainless steel spoon.

To avoid cross-contamination of samples, equipment used during sampling must be clean and free from the residue of previous samples. Non-dedicated sampling equipment must be cleaned initially and prior to being reused. The following are the steps required for proper decontamination:

- Wash and scrub with low phosphate laboratory grade detergent
- Rinse with deionized water
- Rinse with HNO<sub>3</sub>
- Rinse with deionized water
- Rinse with isopropyl alcohol
- Rinse with deionized water
- Air dry
- Wrap in aluminum for transport.

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6. Section 4.8.2 of the Basewide QAPP details the standard procedures and protocols for hand auger sampling.

Samples collected from the site must be identified with a sample label in addition to an entry on a chain-of-custody record. Sample labels will require the field team to complete the following information on each sample bottle: site name, sample number, sample matrix, parameters to be analyzed, date of collection, time of collection, preservation technique employed, and samplers name. The labels will be attached to the sample bottles, and then covered by clear waterproof tape. Samples will be placed on ice in a cooler at 4°C prior to being delivered to the laboratory for analysis.

## 4.2 Analytical Program

The site investigation laboratory program for the WWII Landfill including the total number of field samples as well as associated quality assurance/quality control samples is summarized below:

	Sample Matrix	Polycyclic Aromatic Hydrocarbons (EPA 8270)	Metals (EPA 6010)	Pesticides (EPA 8081)	Polychlorinated Biphenyls (EPA 8082)
No. of Samples	Soil	16	16	16	16
Field Duplicate		1	1	1	1
Matrix Spike/Matrix Spike Duplicate		1	1	1	1
Rinsate Blank <sup>(a)</sup>	Water	1	1	1	1
<b>Total No. of Analyses</b>		<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>
(a) One rinsate blank per day of sampling with a field device that requires field decontamination.					
NOTE: EPA = U.S. Environmental Protection Agency. Laboratory quality control samples will be collected at a rate of 1 per 20 samples.					

The samples will be submitted to an offsite laboratory for analysis of the previously detected constituents of concern (i.e., polycyclic aromatic hydrocarbons, metals, polychlorinated biphenyls, and pesticides). The analytical results will be compared to NYSDEC Technical and Administrative Guidance Manual 4046 cleanup objectives.

## 4.3 Contingency Soil Sampling

In the event that the analytical results from the surface soil/debris samples contain concentrations of contaminants of concern above the NYSDEC guidance values, additional sampling will be warranted to accurately delineate the areas of excavation. Three additional samples will be collected approximately 25 ft in the three remaining directions from the two previous sample locations (Figure 4).

#### **4.4 Surveying**

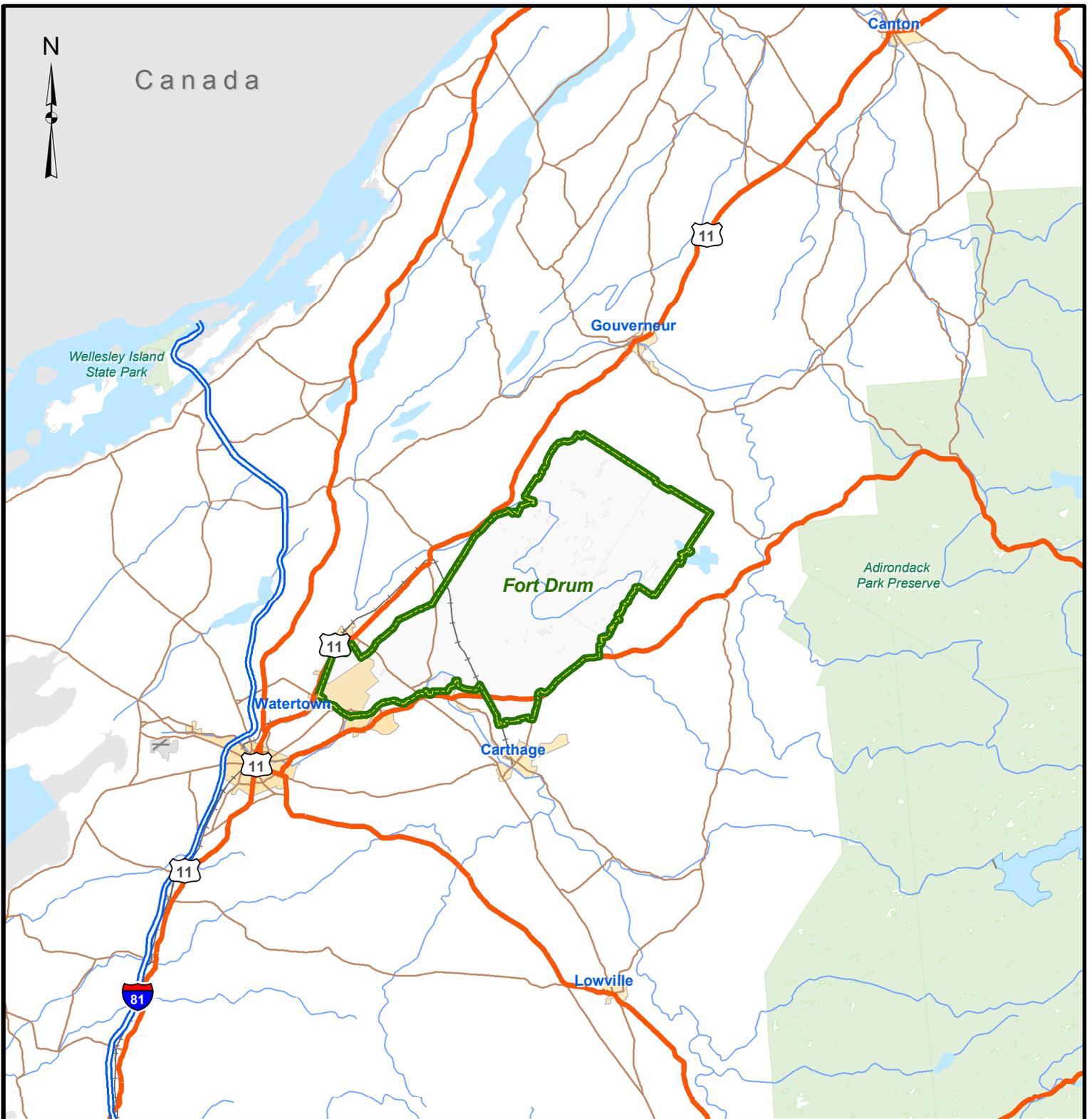
The sampling locations will be identified using a surveyed sampling grid established at the site. Following sampling, the locations will be staked and properly labeled upon completion of sampling. The horizontal and vertical coordinates for each new location will be surveyed and integrated with the existing site map.

## 5. PROJECT SCHEDULE

The proposed schedule for completion of the pre-design investigation is presented below. The schedule includes tasks to be completed up through the Pre-Design Investigation Report. The schedule does not account, however, for delays due to conditions that are not possible to anticipate. This includes unscheduled installation functions that prohibit field activities, vendor delays, and/or weather delays.

Every attempt will be made to adhere to the schedule presented. Unexpected delays will be documented and reported to U.S. Army Corps of Engineers–Baltimore District within 48 hours. In the event that the schedule needs to be modified, EA will contact the U.S. Army Corps of Engineers for approval of the updated schedule.

Task	Description	Start	Complete
1	Submit draft Work Plan	---	7 Feb 2007
2	Submit final Work Plan	27 Jun 2007	29 Jun 2007
3	Receive Work Plan approval	---	2 Jul 2007
4	Submit excavation permit (underground utility clearance)	9 Jul 2007	13 Jul 2007
5	Mobilization and sampling effort (including site layout)	16 Jul 2007	18 Jul 2007
6	Analytical analysis	18 Jul 2007	25 Jul 2007
7	Additional sampling effort, if required	TBD	---
8	Sample location survey	7 Aug 2007	8 Aug 2007
9	Submit draft Pre-Design Investigation Report	8 Aug 2007	21 Aug 2007
10	Submit final Pre-Design Investigation Report	22 Aug 2007	25 Sep 2007



Canada

Wellesley Island State Park

Fort Drum

Adirondack Park Preserve

Watertown

Carthage

Lowville

Gouverneur

Canton

11

11

11

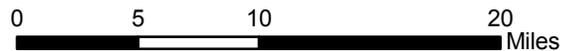
11

81



**Legend**

 Installation Area



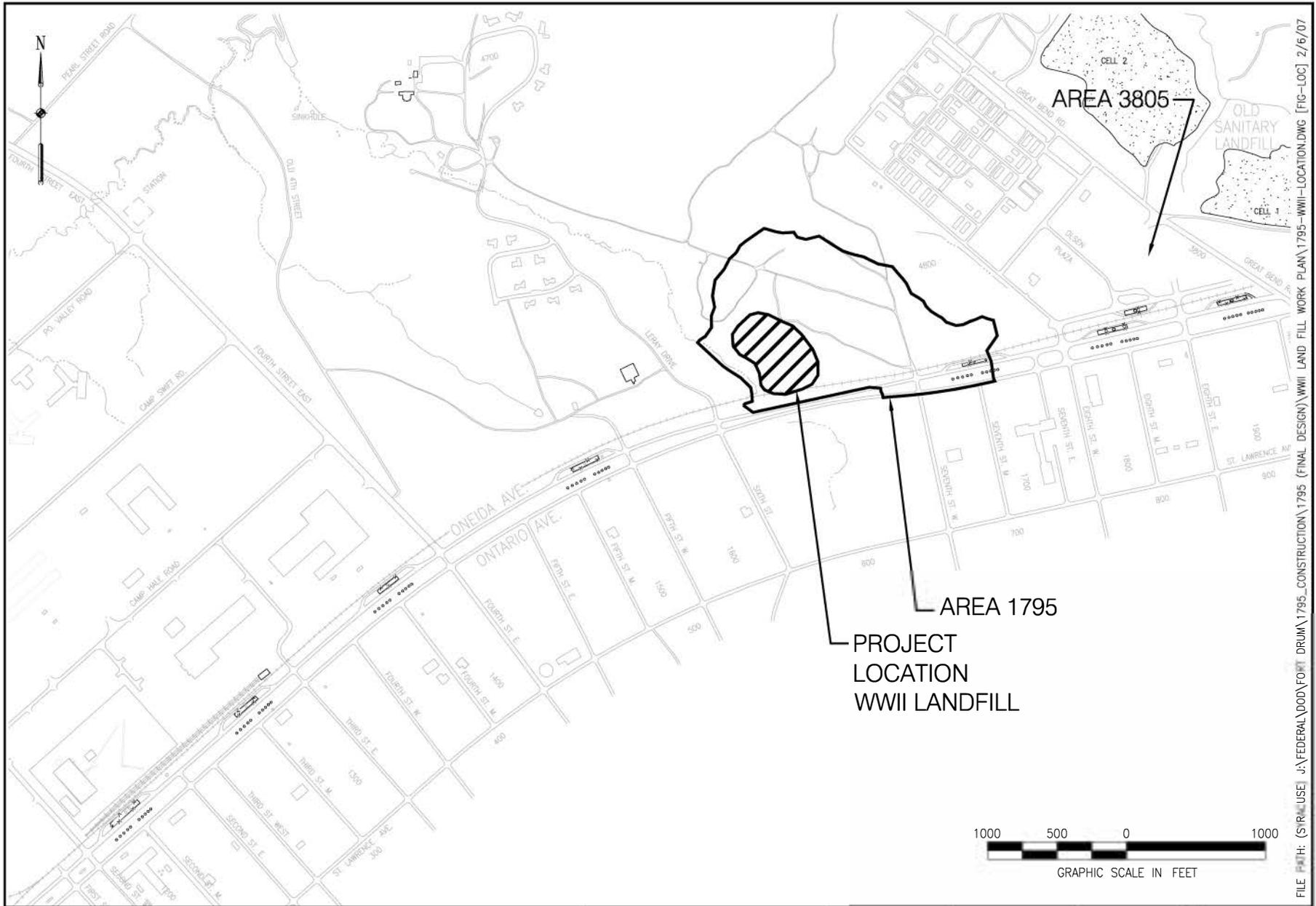
Source: ESRI 2005, ARID-GEO 2005



World War II Landfill  
Fort Drum, New York

**FIGURE 1**  
Site Location Map

PROJECT MGR: JCH	DESIGNED BY: CJS	CREATED BY: CJS	CHECKED BY: JAM	SCALE: AS SHOWN	DATE: FEB 2007	PROJECT NO: 30004.04	FILE NO:
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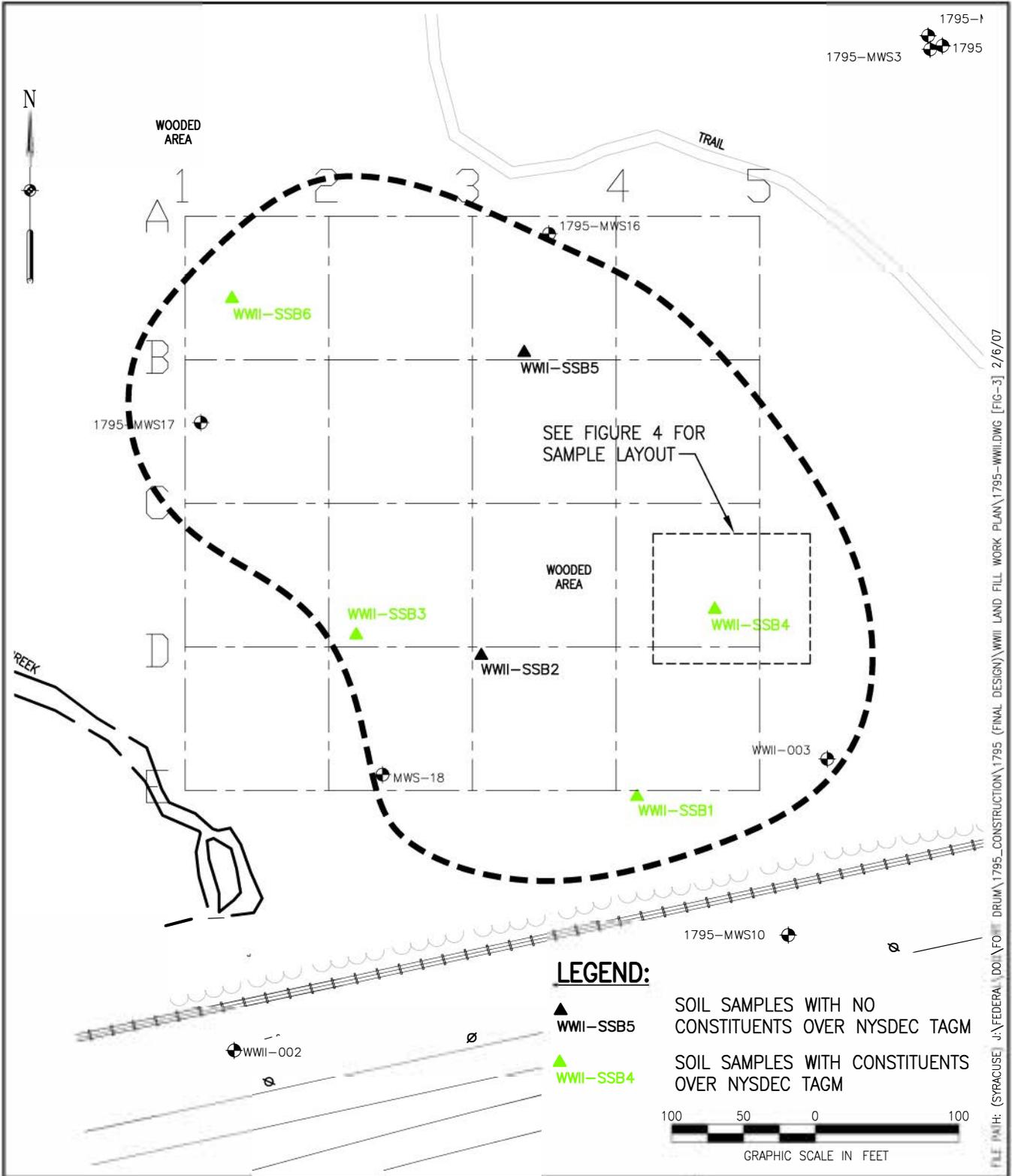
FILE PATH: (S:\R-USE)\FEDERAL\DDO\FORT DRUM\1795\_CONSTRUCTION\1795 (FINAL DESIGN)\WWII LAND FILL WORK PLAN\1795- WWII-LOCATION.DWG [FIG-LOC] 2/6/07



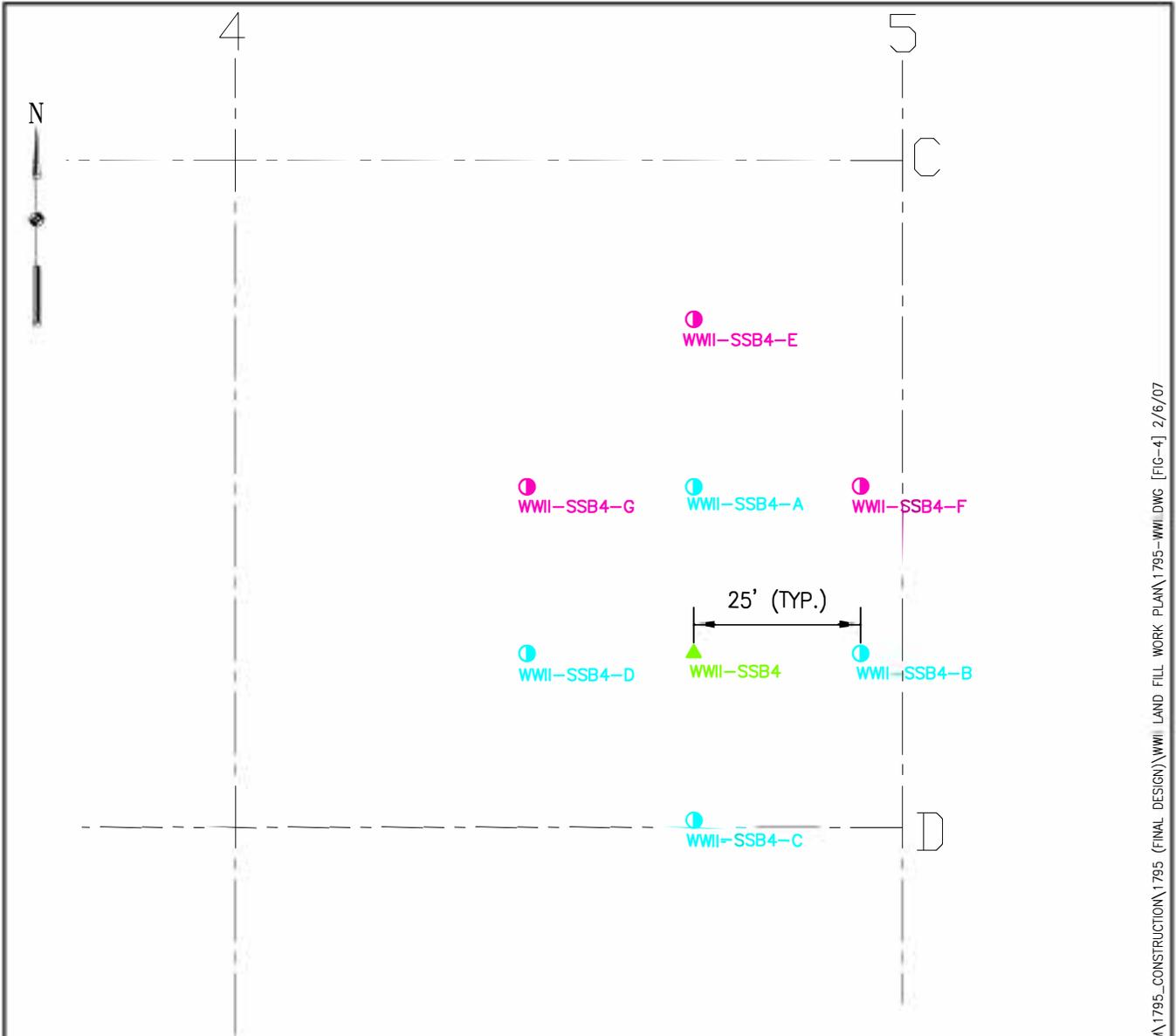
**WORLD WAR II LANDFILL**  
FORT DRUM, NEW YORK

**FIGURE 2**  
**SITE MAP**

DESIGNED BY <b>JVU</b>	DRAWN BY <b>WEL</b>	DATE <b>2-6-07</b>	PROJECT NO. <b>30004.04</b>
CHECKED BY <b>JAM</b>	PROJECT MGR. <b>JCH</b>	SCALE <b>AS SHOWN</b>	FIGURE <b>2</b>



		<b>WORLD WAR II LANDFILL</b> FORT DRUM, NEW YORK			<b>FIGURE 3</b> <b>PREVIOUS SAMPLE LOCATIONS</b>		
PROJECT MGR <b>JCH</b>	DESIGNED BY <b>JVU</b>	DRAWN BY <b>WEL</b>	CHECKED BY <b>JAM</b>	SCALE <b>AS SHOWN</b>	DATE <b>2-6-07</b>	PROJECT NO <b>30004.04</b>	FIGURE <b>3</b>

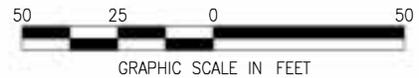


**LEGEND:**

- ▲ WWI-SSB5 SOIL SAMPLES WITH NO CONSTITUENTS OVER NYSDEC TAGM
- ▲ WWI-SSB4 SOIL SAMPLES WITH CONSTITUENTS OVER NYSDEC TAGM
- WWI-SSB4-B PROPOSED SURFACE SOIL SAMPLE
- WWI-SSB4-E PROPOSED SECONDARY SOIL SAMPLES IF INITIAL SAMPLES CONTAIN CONSTITUENTS OVER NYSDEC TAGM

**NOTE:**

SECONDARY SAMPLE LOCATIONS BASED ON CONSTITUENTS OF CONCERN DETECTED OVER NYSDEC TAGM WWII-SB3-A.



		WORLD WAR II LANDFILL FORT DRUM, NEW YORK			FIGURE 4 PROPOSED SAMPLE LAYOUT		
PROJECT MGR JCH	DESIGNED BY JVU	DRAWN BY WEL	CHECKED BY JAM	SCALE AS SHOWN	DATE 2-6-07	PROJECT NO 30004.04	FIGURE 4

## **Appendix A**

### **Site-Specific Safety, Health, and Emergency Response Plan Addendum**

**Addendum to the  
Site-Specific Safety, Health, and Emergency Response Plan  
for the Pre-Design Investigation  
Area 1795, WWII Landfill  
Fort Drum, New York**

**Contract No. DACA31-01-D-0031**

*Prepared for*

U.S. Army Corps of Engineers–Baltimore District  
Engineering Division HTRW Branch  
10 South Howard Street  
Baltimore, Maryland 21201

*Prepared by*

EA Engineering, P.C. and Its Affiliate  
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East Syracuse, New York 13057  
(315) 431-4610

June 2007  
Revision: FINAL  
EA Project No. 30004.04

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U.S. Army Corps of Engineers–Baltimore District  
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10 South Howard Street  
Baltimore, Maryland 21201

*Prepared by*

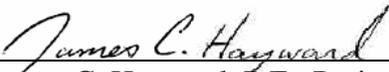
EA Engineering, P.C. and Its Affiliate  
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6731 Collamer Road  
East Syracuse, New York 13057  
(315) 431-4610



Thomas W. Porter, P.G., Senior Technical Reviewer  
EA Science and Technology

27 June 2007

Date



James C. Hayward, P.E., Project Manager/Assistant Vice President  
EA Engineering, P.C.

27 June 2007

Date

June 2007  
Revision: FINAL  
EA Project No. 30004.04

## **CERTIFICATION**

This Site-Specific Safety, Health, and Emergency Response Plan Addendum has been prepared under the supervision of, and has been reviewed by, a Certified Industrial Hygienist (CIH) certified by the American Board of Industrial Hygiene.

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Peter Garger, CIH  
ABIH No. 1563

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<u>Number</u>	<u>Title</u>
1	Environmental monitoring requirements.

## 1. INTRODUCTION

This document is an addendum to the site-specific Safety, Health, and Emergency Response Plan for the activities associated with the Pre-design Investigation at the WWII Landfill, Area 1795, Fort Drum, New York (EA 2001<sup>1</sup>). It contains specific information regarding field tasks and personnel applicable to the surface soil/debris sampling, WWII Landfill, Fort Drum, New York. The objective of the modification is to delineate the areal extent of contaminated surface soil/debris in the 4 previously identified locations where concentrations of contaminants of concern were reported above the NYSDEC guidance values

Remedial construction activities are requested to be performed under Delivery Order D0007 from the U.S. Army Corps of Engineers (USACE)—Baltimore District (Contract No. DACA31-01-D-0031). This Site-Specific Safety, Health, and Emergency Response Plan Addendum addresses the following regulations and guidance documents:

- Occupational Safety and Health Administration Standards for Construction Industry, 29 CFR 1926, including 29 CFR 1926.65, *Hazardous Waste Operations and Emergency Response* and 29 CFR 1926.59, *Hazardous Communications*
- USACE *Safety and Health Requirements Manual*, EM 385-1-1
- Federal Acquisition Regulation, Clause 52.236-13: *Accident Prevention*.

General information is provided below:

- **Site:** Area 1795, WWII Lanfill
- **Location:** Fort Drum Military Reserve, Fort Drum, New York

The following are provided as attachments:

- Attachment A: Worker Training and Physical Examination Record
- Attachment B: Safety, Health, and Emergency Response Plan Review Record
- Attachment C: Site Entry and Exit Log
- Attachment D: Accident Investigation Report
- Attachment E: Emergency Telephone Numbers and Hospital Directions
- Attachment F: Emergency Equipment Available Onsite
- Attachment G: Map to hospital.

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1. EA Science and Technology. 2001. Safety, Health, and Emergency Response Plan for the Full-Scale Dual-Phase Extraction Pilot Study, Army Air Force Exchange Service Station, Fort Drum, New York. September.

## 2. PERSONNEL

The following is a list of key project personnel:

Fort Drum - Environmental Division	Paul Zang	315-772-5063
Project Manager	James Hayward, P.E.	315-431-4610
Program Manager	Brenda Herman	410-771-4950
Program Safety and Health Officer	Peter Garger, CIH	410-771-4950
Task Manager	Joe Von Uderitz, P.G.	315-431-4610
Site/Construction Manager/Site Safety and Health Officer	Joe Von Uderitz, P.G.	315-431-4610
USACE Design Manager	Maurice Wooden	410-962-6765

### **3. SCOPE OF WORK**

This Site-Specific Safety, Health, and Emergency Response Plan Addendum has been developed to designate and define general safety and health protocols applicable to project activities to be implemented and followed during field activities and consulting work at the WWII Landfill, Fort Drum. The scope of work covered by this Site-Specific Safety, Health, and Emergency Response Plan Addendum includes surface soil/debris sampling at 16 locations. The primary field activities include the following:

- Obtain underground utility clearances for intrusive (i.e., drilling, trenching) operations
- Hand auger to a depth of approximately 3 ft below ground surface
- Soil/debris sampling

#### **4. POTENTIAL HAZARD ANALYSIS**

Based upon the above field activities, the following potential hazard conditions may be anticipated:

- Personnel may be injured during physical lifting and handling of heavy equipment, construction materials, or containers. Additionally, personnel may encounter slip, trip, and fall hazards associated with excavations and construction materials.
- Field operations conducted during the winter months can cause cold-related illness symptoms during unseasonably cold weather days or when wind-chilled. In addition, heavy rains, electrical storms, and high winds may create extremely dangerous situations for employees.
- Entry into a confined space in support of this project is forbidden. However, it is not anticipated that confined space entry will be required during completion of the construction activities.

## **5. PERSONAL PROTECTIVE EQUIPMENT/LEVEL OF PROTECTION**

Based upon currently available information, the site will require Level D protection for currently anticipated conditions and activities. In the event that potential chemical hazards are identified, the level of protection may be upgraded appropriately. Table 1 shows the environmental monitoring requirements. Only personnel identified and qualified for hazardous waste work as defined in 29 CFR 1926.65 will be allowed to upgrade beyond Level D or provide support of hazardous material/substance contingency operations. Only the Field Manager and Site Safety and Health Officer, in conjunction with the Program Safety and Health Officer, will be allowed to approve personal protective equipment upgrade beyond Level D and site re-entry for the purpose of hazardous conditions assessment. The following is a list of the personal protective equipment components for the maximum levels of protection authorized for use during this project.

### **5.1 LEVEL D PERSONAL PROTECTIVE EQUIPMENT**

Level D to be worn for initial entry onsite and initially for activities will consist of the following:

- Coveralls
- Steel-toe, steel-shank safety boots/shoes
- Chemical resistant gloves (Nitrile/Neoprene) when contact with potentially contaminated soil or water, or cleaning solutions (chlorine, muriatic acid) is expected
- Safety glasses
- Hearing protectors
- Boot covers (optional)
- Poly-coated coveralls (when contact with cleaning solutions or contaminated soil and water is anticipated, e.g., when pressure-washing equipment or cleaning piping).

Insulated clothing, hats, etc. must be worn when temperatures fall below 40°F.

### **5.2 LEVEL C PERSONAL PROTECTIVE EQUIPMENT**

Based upon the background information concerning the site, contaminant concentrations are not expected to require the use of Level C personal protective equipment in accordance with the site-specific Safety, Health, and Emergency Response Plan for the Full-Scale Dual-Phase Extraction Pilot Study (EA 2001). However, the Site Safety and Health Manager is authorized to increase the level of personal protective equipment to be worn if conditions warrant.

TABLE 1 ENVIRONMENTAL MONITORING REQUIREMENTS

Task	Instrument	Frequency and Location	Action Levels <sup>(a)</sup>	Required Response
System Operation and Maintenance	PID or FID	Initially and every 30 minutes in the Breathing Zone	1 ppm for 5 minutes  1-5 ppm	Continue work.  Evacuate to a safe upwind location and wait for levels to dissipate. Retest the area after 15 minutes. If levels have not dissipated, continue work in Level C personal protective equipment.
		Initially and every 30 minutes in the Breathing Zone	>5 ppm above background	Evacuate to a safe upwind location immediately. Retest area after 15 minutes wearing Level C personal protective equipment. Conduct direct read sampling in Breathing Zone for benzene concentrations using a Draeger portable sample pump and benzene colorimetric tubes. If results of colorimetric tube sampling indicate a benzene concentration greater than 0.5 ppm in the Breathing Zone, and if levels have not dissipated in 30 minutes, contact the Site Safety and Health Officer and Project Manager.
	CGI	Initially and every 10 minutes during soil disturbance; measure at surface of hole/ excavation	0-10% LEL  10-20% LEL  >20% LEL	Continue.  Continuous monitoring. Prepare to shut down.  Shut down. Contact Site Safety and Health Officer and Project Manager.
<p>(a) Action levels for PID or FID are based on measurements taken above background concentrations when background concentration is less than 1 ppm. When background concentrations exceed 1 ppm total volatile hydrocarbons, PID, or FID action levels will be inclusive of background concentrations and so noted on the Environmental Monitoring Record.</p> <p>NOTE: PID = Photoionization detector; FID = Flame ionization detector; CGI = Combustible gas indicator; LEL = Lower exposure limit.</p>				

**Attachment A**

**Worker Training and Physical  
Examination Record**

## ATTACHMENT A

### WORKER TRAINING AND PHYSICAL EXAMINATION RECORD

SITE: Area 1795, Fort Drum, New York						
Name	OSHA 40-Hour Hazardous Waste Operations Training		OSHA Hazardous Waste Supervisor Training	CPR	First Aid	Date of Last Physical Examination
	Initial	Annual				
<b>EA PERSONNEL</b>						
Jim Hayward	1/28/94	9/27/06	7/1/94	05/07	05/07	8/05
Mike Valvo	2/22/02	8/31/06	NA	6/26/07	6/26/07	5/05
Joe Von Uderitz	5/99	11/14/06	10/04	5/07	5/07	11/06
<b>SUBCONTRACTOR OR ADDITIONAL PERSONNEL</b>						
<p><b>NOTE:</b> Prior to performing work at the site, this Site-Specific Safety, Health, and Emergency Response Plan must be reviewed and an agreement to comply with the requirements must be signed by all personnel, including contractors, subcontractors, and visitors. Contractors and subcontractors are ultimately responsible for ensuring that their own personnel are adequately protected. In signing this agreement, the contractors and subcontractors acknowledge their responsibility for the implementation of the Site-Specific Safety, Health, and Emergency Response Plan requirements. All personnel onsite shall be informed of the site emergency response procedures and any potential safety or health hazards of the operations.</p> <p>NA = Not applicable.</p>						

## **Attachment B**

# **Safety, Health, and Emergency Response Plan Review Record**



## **Attachment C**

### **Site Entry and Exit Log**



**Attachment D**

**Accident Investigation Report**



**ACCIDENT/LOSS REPORT**

THIS REPORT MUST BE COMPLETED BY THE INJURED EMPLOYEE OR SUPERVISOR AND FAXED TO EA CORPORATE HUMAN RESOURCES WITHIN 24 HOURS OF ANY ACCIDENT. THE FAX NUMBER IS (410) 771-1780.

**\*NOTE\*** WHENEVER AN EMPLOYEE IS SENT FOR MEDICAL TREATMENT FOR A WORK RELATED INJURY OR ILLNESS, PAGE 4 OF THIS REPORT MUST ACCOMPANY THAT INDIVIDUAL TO ENSURE THAT ALL INVOICES/BILLS/CORRESPONDENCE ARE SENT TO HUMAN RESOURCES FOR TIMELY RESPONSE.

**A. DEMOGRAPHIC INFORMATION:**

NAME OF INJURED EMPLOYEE: \_\_\_\_\_  
HOME ADDRESS: \_\_\_\_\_  
HOME PHONE: \_\_\_\_\_ DATE OF BIRTH: \_\_\_\_\_  
AGE: \_\_\_\_\_ SEX: M F  
MARITAL STATUS: \_\_\_\_\_ NAME OF SPOUSE (if applicable) \_\_\_\_\_  
SOCIAL SECURITY NUMBER: \_\_\_\_\_ DATE OF HIRE: \_\_\_\_\_  
NUMBER OF DEPENDENTS: \_\_\_\_\_  
EMPLOYEE'S JOB TITLE: \_\_\_\_\_  
DEPT. REGULARLY EMPLOYED: \_\_\_\_\_  
WAS THE EMPLOYEE INJURED ON THE JOB: Y N  
PRIMARY LANGUAGE OF THE EMPLOYEE: \_\_\_\_\_

**B. ACCIDENT/INCIDENT INFORMATION:**

DATE OF ACCIDENT: \_\_\_\_\_ TIME OF ACCIDENT: \_\_\_\_\_  
REPORTED TO WHOM: \_\_\_\_\_ NAME OF SUPERVISOR \_\_\_\_\_

EXACT LOCATION WHERE ACCIDENT OCCURRED (including street, city, state and County):  
\_\_\_\_\_  
\_\_\_\_\_

EXPLAIN WHAT HAPPENED (include what the employee was doing at the time of the accident and how the accident occurred): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DESCRIBE THE INJURY AND THE SPECIFIC PART OF THE BODY AFFECTED (i.e. laceration, right hand, third finger):  
\_\_\_\_\_  
\_\_\_\_\_



OBJECT OR SUBSTANCE THAT DIRECTLY INJURED EMPLOYEE: \_\_\_\_\_

NUMBER OF DAYS AND HOURS EMPLOYEE USUALLY WORKS PER WEEK: \_\_\_\_\_

IS THE EMPLOYEE EXPECTED TO LOSE AT LEAST ONE FULL DAY OF WORK? \_\_\_\_\_

DOES THE EMPLOYEE HAVE A PREVIOUS CLAIM? Y N if yes, STATUS Open Closed

WAS THE EMPLOYEE ASSIGNED TO RESTRICTED DUTY? \_\_\_\_\_

**C. ACCIDENT INVESTIGATION INFORMATION**

WAS SAFETY EQUIPMENT PROVIDED? Y N If yes, was it used? Y N

WAS AN UNSAFE ACT BEING FORMED ? Y N If yes, describe \_\_\_\_\_

WAS A MACHINE PART INVOLVED? Y N If yes, describe \_\_\_\_\_

WAS THE MACHINE PART DEFECTIVE? Y N If yes, in what way \_\_\_\_\_

WAS A 3<sup>RD</sup> PARTY RESPONSIBLE FOR THE ACCIDENT/INCIDENT? Y N

If yes, list Name, address and phone number \_\_\_\_\_

WAS THE ACCIDENT/INCIDENT WITNESSED? Y N

If yes, list Name, address and phone number: \_\_\_\_\_

**D. PROVIDER INFORMATION**

WAS FIRST AID GIVEN ON SITE? Y N

If yes, what type of medical treatment was given \_\_\_\_\_

PHYSICIAN INFORMATION (if medical attention was administered)

NAME: \_\_\_\_\_

ADDRESS (incl. City, state and zip): \_\_\_\_\_

PHONE: \_\_\_\_\_

HOSPITAL ADDRESS (incl. Name, address, city, state, zip code & phone)

\_\_\_\_\_

WAS THE EMPLOYEE HOSPITALIZED? Y N If yes, on what date \_\_\_\_\_

WAS THE EMPLOYEE TREATED AS AN OUTPATIENT, RECEIVE EMERGENCY TREATMENT OR AMBULANCE SERVICE? \_\_\_\_\_

PLEASE ATTACH THE PHYSICIANS WRITTEN RETURN TO WORK SLIP

**\*NOTE\* A PHYSICIANS RETURN TO WORK SLIP IS REQUIRED PRIOR TO ALLOWING THE WORKER TO RETURN TO WORK**

**E. AUTOMOBILE ACCIDENT INFORMATION (complete if applicable)**

AUTHORITY CONTACTED AND REPORT # \_\_\_\_\_

EA EMPLOYEE VEHICLE YEAR, MAKE AND MODEL \_\_\_\_\_



V.I.N. \_\_\_\_\_ PLATE/TAG # \_\_\_\_\_

OWNER'S NAME AND ADDRESS: \_\_\_\_\_

DRIVER'S NAME AND ADDRESS: \_\_\_\_\_

RELATION TO INSURED: \_\_\_\_\_ DRIVER'S LICENSE # \_\_\_\_\_

DESCRIBE DAMAGE TO YOUR PROPERTY: \_\_\_\_\_

DESCRIBE DAMAGE TO OTHER VEHICLE OR PROPERTY: \_\_\_\_\_

OTHER DRIVER'S NAME AND ADDRESS: \_\_\_\_\_

OTHER DRIVER'S PHONE: \_\_\_\_\_

OTHER DRIVER'S INSURANCE COMPANY AND PHONE: \_\_\_\_\_

LOCATION OF OTHER VEHICLE: \_\_\_\_\_

NAME, ADDRESS AND PHONE OF OTHER INJURED PARTIES: \_\_\_\_\_

**WITNESSES**

NAME: \_\_\_\_\_ PHONE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

STATEMENT: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_ PHONE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

STATEMENT: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

**F. ACKNOWLEDGEMENT**

NAME OF SUPERVISOR: \_\_\_\_\_

DATE OF THIS REPORT: \_\_\_\_\_ REPORT PREPARED BY: \_\_\_\_\_

I have read this report and the contents as to how the accident/loss occurred is accurate to the best of my knowledge.

Signature: \_\_\_\_\_

Injured Employee

Date: \_\_\_\_\_



I am seeking medical treatment for a work related injury/illness.

Please forward all bills/invoices/correspondence to:

**EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.**

**11019 McCORMICK ROAD**

**HUNT VALLEY, MD 21031**

**ATTENTION: Michele Bailey  
HUMAN RESOURCES**

**(410) 584-7000**



## **Attachment E**

# **Emergency Telephone Numbers and Hospital Directions**

## ATTACHMENT E

### EMERGENCY TELEPHONE NUMBERS AND HOSPITAL DIRECTIONS

SITE: Area 1795, Fort Drum, New York	
Base Police/Security	911
Base Fire	2-4131 or (315) 772-4131
Base Ambulance	911
<b>Base Hospital:</b> Guthrie Ambulatory Health Care Clinic Mt. Belvedere Road	2-5236 or (315) 772-5236
Poison Control Center	(800) 492-2414
<b>Directions to Guthrie Ambulatory Health Care Clinic:</b> From the WWII Landfill take a right and go west on Oneida Ave. to Fourth St. Turn right on Fourth St. Take Fourth St. north to North Memorial Drive. Turn left onto North Memorial Drive. Take North Memorial Drive to Mt. Belverere BLVD. Turn right onto Mt. Belvedere BLVD. The Medical facility will be on the left side of the road.	
Range Control	2-5673 or (314) 772-5673
<b>Program Safety and Health Officer</b> Peter Garger, CIH	(410) 527-2425 (work) (410) 790-6338 (cell)
<b>Program Manager</b> Brenda Herman	(800) 876-4950 (work)
In case of spill, contact Fort Drum Fire Department	2-4131 or (315) 772-4131
<b>In case of accident or exposure incident contact:</b> Peter Garger, CIH	(410) 527-2425 (work) (410) 790-6338 (cell)
<b>EA Medical Services</b> EMR 4360 Chamblee Dunwoody Road, Suite 202 Atlanta, Georgia 30341 Contact: Dr. Elayne F. Theriault	(800) 229-3674
<b>USACE Contact</b> Maurice Wooden	(410) 962-6765
<b>Fort Drum - Public Works - Environmental Division</b> Paul Zang	(315) 772-5063
<b>Site Safety and Health Officer</b> Joe Von Uderitz	(315) 382-9534
<b>Site Manager</b> Joe Von Uderitz	(315) 382-9534

## **Attachment F**

### **Emergency Equipment Available Onsite**

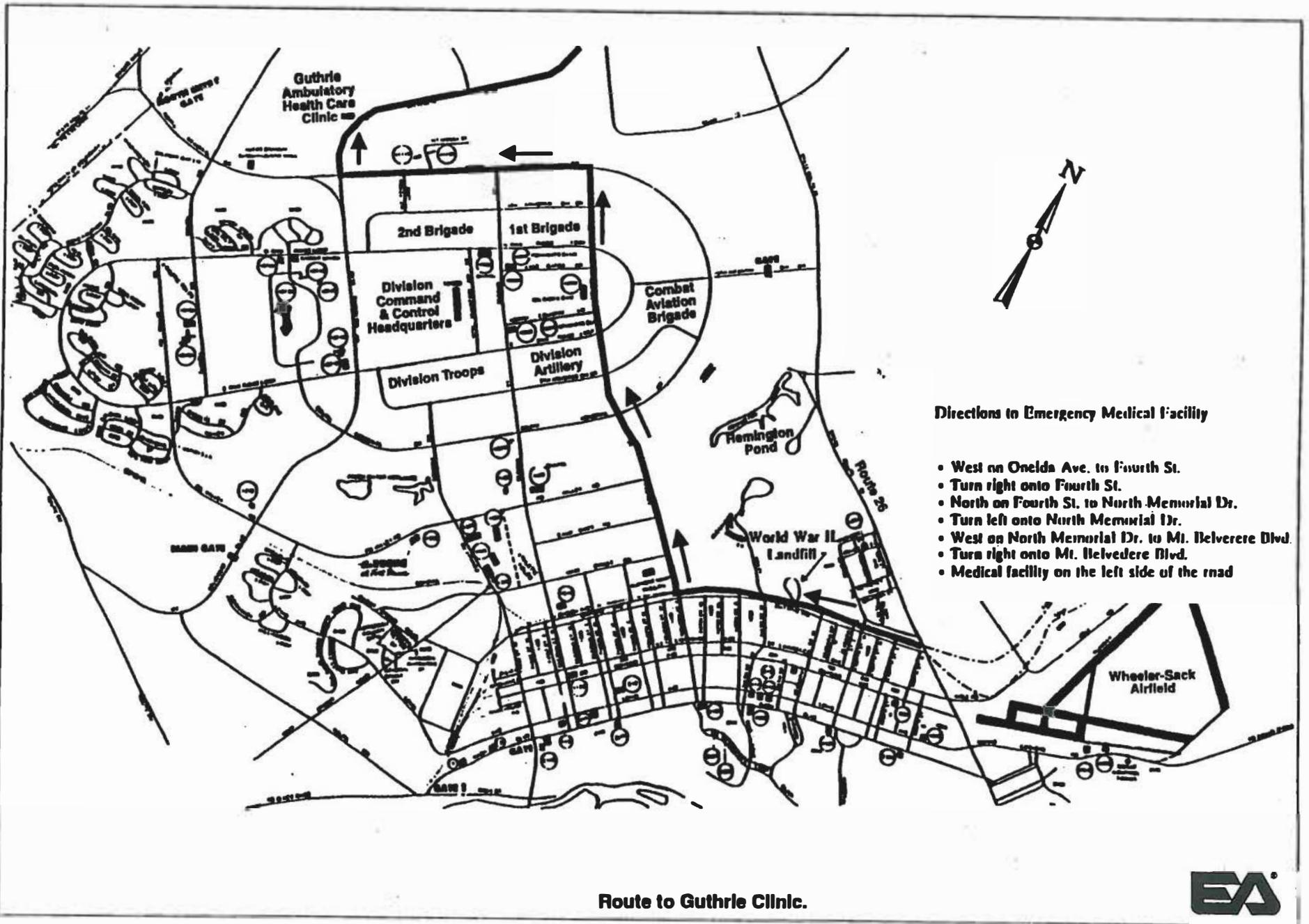
**ATTACHMENT F**

**EMERGENCY EQUIPMENT AVAILABLE ONSITE**

Type of Equipment	Location
<b>Communications Equipment</b>	
Mobile Telephone	In company vehicle
<b>Medical Support Equipment</b>	
First Aid Kits	EA vehicle
Eye Wash Station	EA vehicle
Safety Shower	Guthrie Ambulatory Health Care Clinic
<b>Fire Fighting Equipment</b>	
Fire Extinguishers	In company vehicle

## **Attachment G**

### **Map to Hospital**



**Directions to Emergency Medical Facility**

- West on Onelda Ave. to Fourth St.
- Turn right onto Fourth St.
- North on Fourth St. to North Memorial Dr.
- Turn left onto North Memorial Dr.
- West on North Memorial Dr. to Mt. Helvedere Blvd.
- Turn right onto Mt. Helvedere Blvd.
- Medical facility on the left side of the road

**Route to Guthrie Clinic.**

