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SITE ASSESSMENT WORK PLAN 80TH DIVISION RESERVE SITE LIGHTER AMPHIBIOUS RESUPPLY CARGO (LARC) 60 AREA FORT STORY VA

1/1/1994

MONTGOMERY WATSON

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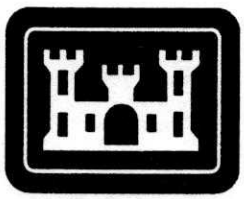


U.S. Army Corps
Of Engineers

Omaha District

U.S. Army Corp of Engineers
Missouri River Division

Site Assessment Workplan

80th Division LARC 60 Area
Fort Story, Virginia

January 1994

MONTGOMERY WATSON

1.1 Objective

Montgomery Watson (Montgomery) has been contracted by the United States Army Corps of Engineers, Omaha District (USACE) to conduct a Site Assessment at the 80th Division LARC 60 Area (80-DRS LARC Area) at Fort Story Virginia. Excavation will take place in this area during construction of a LARC wash area. The objectives of this site assessment are:

- Evaluate the presence or absence of contamination in the shallow subsurface at the site.
- Evaluate the potential chemical exposure of construction personnel during excavation and construction at the site.
- Evaluate the detected levels of contaminants relative to potentially applicable regulatory standards.

1.2 Site Description

Fort Story is located on Cape Henry in Virginia Beach, Virginia. Fort Story is bounded by the Atlantic Ocean and the Chesapeake Bay to the north and by the Virginia Seashore State Park to the south. The 80-DRS LARC area at Fort Story is located north of Da Nang Road and east of Hospital Road.

1.3 Environmental Setting

Fort Story lies within the Atlantic Coastal Plain physiographic province. The topography at Fort Story consists of sand dunes, sand flats, and marsh areas. The geology is characterized by marine sediments consisting of unconsolidated sands, silts, gravels and clays. The 80-DRS LARC area is located in a flat sandy area, and soils are mostly sand. The shallow groundwater aquifer at Fort Story extends from approximately 0 to 20 feet below ground surface. Groundwater at the 80-DRS LARC Area is more than 8 feet below ground surface.

1.4 Investigation Activities

The activities conducted during this site investigation will include locating sample points, advancing Geoprobe borings, conducting a soil gas screening, collecting soil samples, analyzing soil samples, compiling and evaluating data, performing a qualitative exposure evaluation, and preparing a site assessment report. The procedures used to conduct these activities are described further in following sections of this work plan.

2.0 Field Operations

Investigation of the 80-DRS LARC area will consist of soil screening and soil sampling. Soil samples will be removed from the ground using a Geo-probe system and the soil will be screened with a portable photo-ionization detector (PID). The purpose of the screening is to provide a semi-quantitative indication of non-specific volatile organic compound (VOC) contamination in the soils. Selected samples collected during the soil screening will also be submitted for laboratory analysis. A total of nine soil samples will be submitted to a laboratory for VOC and total petroleum hydrocarbons (TPH) analysis, and nine samples will also be submitted for lead analysis. One additional quality control (QC) sample will be collected for each type of analysis at a location determined in the

field. The soil sampling will provide quantitative information on contaminants, including those not detected by the soil gas screening.

Montgomery will obtain utility clearance information before beginning activities. All utilities will be clearly marked.

2.1 Sample Collection

The soil gas survey will be conducted at the 20 locations indicated in Figure 1. These locations are approximate, and may be modified in the field based on utility locations and other site constraints. At each location, the soil will be screened at 2 foot intervals up to the total depth indicated in Figure 1. A total of 40 points (or 40 two foot intervals) will be surveyed. The survey depth at each location is based on the expected depth of excavation during construction in that area. For example, the drainage basins will extend approximately 3.8 feet below grade, and the screening will also extend to a depth of 4 feet. Expected depth of excavation is based on construction drawings.

Soil samples will be collected using a hydraulically driven piston-type sampler (2 foot long, 1.25 inch diameter) with a stainless steel or plastic liner. The sampler will be driven to the top of the sampling interval. The piston will be released, and the sampler will be advanced through the desired 2 foot interval. The soil sample will enter the sampler as it is advanced. After the drive rod is removed, the liner containing the sample will be removed. A portion of the sample will be extruded into a Zip-loc bag for the soil gas screening (Section 2.2). The remaining sample will be collected as described in Section 2.3.

After completion, all holes will be backfilled with bentonite and brought flush with the surrounding ground surface. Holes placed in paved areas will be patched with similar material.

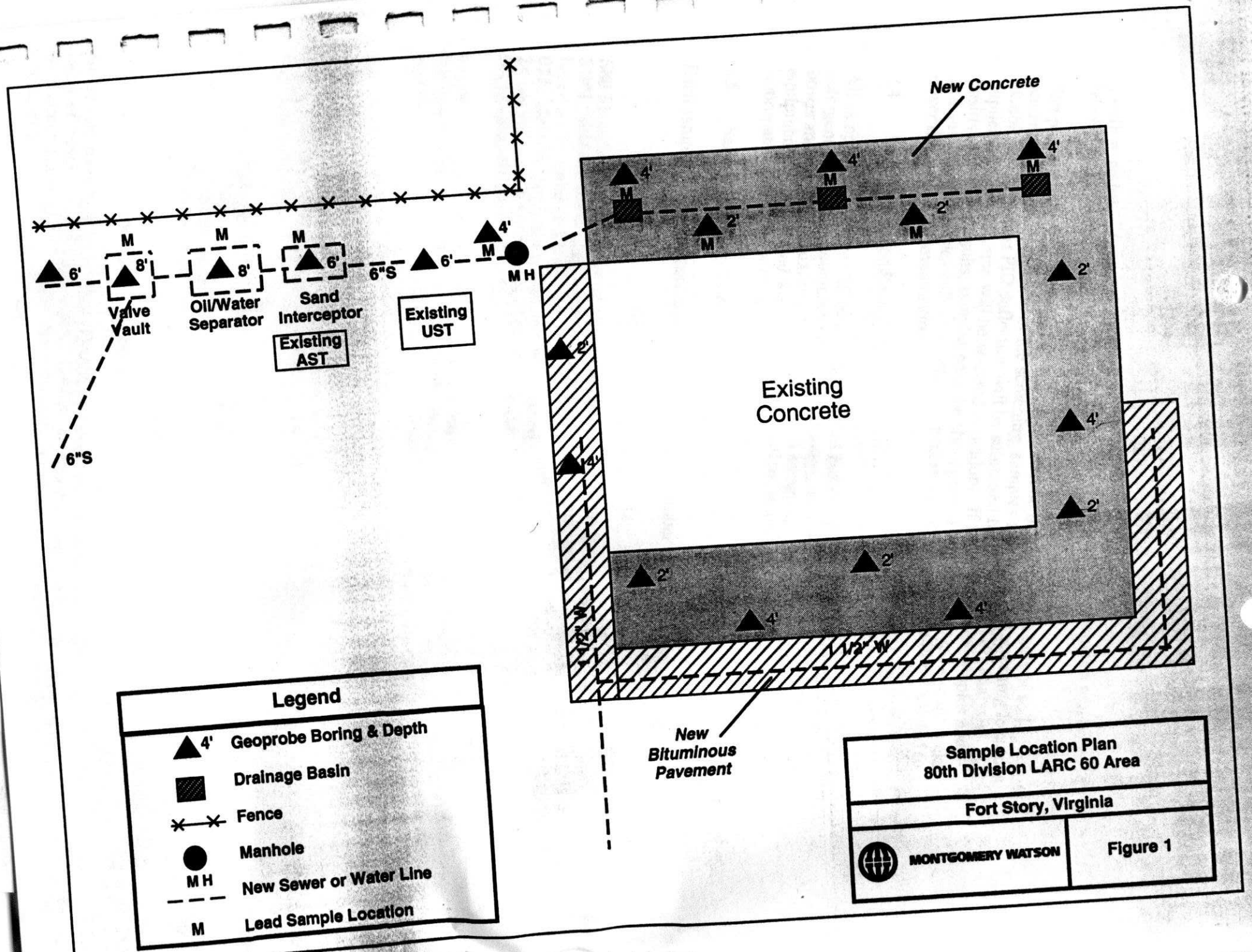
2.2 Soil Screening

Montgomery will conduct a semi-quantitative soil gas survey at the site to evaluate the presence of non-specific volatile organic vapors in the soils. The PID will be calibrated using 100 ppm isobutylene and the background reading recorded. As discussed in Section 2.1, soil samples will be collected with the Geo-probe system and placed in a Zip-loc bag. The bag will be sealed and allowed to stand in the shade for 5 minutes. The sampling probe of the PID will be placed in the bag, and the maximum and average deflection will be recorded.

2.3 Soil Sampling Program

Nine (9) field samples and one (1) QA/QC sample will be collected and submitted for each of three types of chemical analysis - lead, VOCs, and TPH. The most likely location of lead contamination is along the north side of the former wash pad, due to vehicle maintenance activities in this area. Samples for lead analysis will be collected from the 0-2' interval at five locations north of the existing concrete pad and four locations near the above ground storage tank, as shown in Figure 1. A sample for duplicate analysis will be selected at random.

Samples will be collected as follows. After a portion of the sample is collected for the soil gas screening, the remaining sample will placed in a stainless steel bowl and mixed with a stainless steel spoon. The sample will be placed in two 4 ounce glass jars for possible VOC and TPH analysis. If a sample for lead analysis is to be collected at this


New Concrete
Existing Concrete
Valve Vault
Oil/Water Separator
Sand Interceptor
Existing AST
Existing UST
6"S
MH
New Bituminous Pavement
Legend
4' Geoprobe Boring & Depth
Drainage Basin
Fence
Manhole
MH
New Sewer or Water Line
M
Lead Sample Location
Sample Location Plan
80th Division LARC 60 Area
Fort Story, Virginia
MONTGOMERY WATSON
Figure 1

5.0 Health and Safety

All investigation activities will be performed in accordance with the site-specific health and safety plan included as Attachment A.

6.0 Data Evaluation

Montgomery will compile and evaluate lithologic data, soil gas survey data, and soil analytical data to identify and characterize potential soil contamination at the 80-DRS LARC area. Montgomery will evaluate the soil gas survey results for semi-quantitative indications of non-specific VOC contamination. Montgomery will evaluate the nature of chemical species detected by soils analysis, particularly with reference to the results of the soil gas survey.

7.0 Qualitative Exposure Evaluation

Montgomery will qualitatively evaluate potential exposures by construction workers to contaminants detected at the site. This will be a qualitative evaluation, and will discuss possible mitigation and/or abatement alternatives needed as part of a health and safety program for construction workers at the site.

8.0 Site Assessment Report

Montgomery will prepare a site assessment report which will include a description of the field activities, including the site characteristics and lithology. The report will present the data from the soil gas survey and soils analysis, the results of the data evaluation (Section 6.0), and will include all laboratory reports. The report will also include the qualitative exposure evaluation (Section 7.0), and will assess soil handling and disposal options, if warranted by the initial findings.

A Montgomery Technical Review Committee will evaluate the adequacy and validity of the initial site assessment report. The Committee's comments will be incorporated into a Draft Site Assessment Report. One original and three copies of the Draft Site Assessment Report will be submitted to USACE Omaha and the Fort Eustis DEH for review and comment. Review comments will be incorporated into a Final Site Assessment Report. One original and three copies of the Final Site Assessment Report will be submitted to USACE Omaha and the Fort Eustis DEH.

ATTACHMENT A
SITE HEALTH AND SAFETY PLAN

SITE HEALTH AND SAFETY PLAN

Project 80th Division LARC 60 Area Job # _____

Date January 25, 1994

Plan Prepared By David Sarr Date: 1/26/94

Plan Reviewed By Colin Campbell Date: 1/26/94

Plan Approved By Donald Kane, CIH Date: 1/26/94

WORK LOCATION & DESCRIPTION

1. Name: 80th Division LARC 60 Area
2. Location: Fort Story, Virginia
3. Type of Site: HazWaste Site ( ) Industrial ( )
   Spill ( ) Construction (X)

   ( ) Existing MW Work Location
   ( ) Existing Client Work Location
   (X) Other MW and USACE have worked at Fort Story, but not at this particular site.

4. Purpose of Work: Investigate possible soil contamination prior to construction
5. Anticipated Activities: Soil gas survey, collection of soil samples
6. Size of Work Zone approx. 200' by 100'
7. Surrounding Population:
8. Surrounding Land Use: Military base

9. Site History (Brief): Area used for storage, maintenance and washing of amphibious craft. A fuel spill is reported to have occurred several years ago.

10. Topography Sandy, flat
11. Anticipated Weather Temperature 20 to 60 degrees. Rain possible
12. Unusual Features None
13. Site Geology Sands. Groundwater 8 to 10' below grade

HAZARD DESCRIPTION

1. Hazard Type

Chemical (X)	Biological ( )
Flammable ( )	Explosive ( )
Oxygen Deficiency ( )	Toxic ( )

2. Description No contamination is known to be present at the site. Fuel oils, gasoline, or solvents may be present from washing and maintaining craft.

3. Nature of Hazards (Write None if none):

Air Organic compounds may volatilize during sampling and be inhaled by investigation personnel

Soil Possible skin contact with contaminated soils may lead to absorption or ingestion of contaminants.

Ground Water Minimal groundwater contact is expected due to shallow depth of borings. Possible skin contact with contaminated groundwater may lead to absorption or ingestion of contaminants.

Surface Water None.

Other

4. Physical Hazards

Cold Stress (X)	Heat Stress ( )
Ionizing Radiation ( )	Noise ( )
Other (X) Describe Slip, trip, and fall	

5. Source of Information: Verbal reports, preliminary site visit

6. Completeness of Information: Complete ( ) Partial (X)
If partial, why? No previous investigations have been performed at this site.

7. Historical Readings/Results at the Site

In January 1994, Montgomery Watson completed two soil borings in the study area. Borings were advanced to a depth of ten feet. Soil samples were screened with a 10.2 eV PID. No readings above background were detected.

PERSONAL PROTECTIVE EQUIPMENT

1. Levels of Protection: If Level A or B protection is required, do not use this form. A comprehensive health and safety plan must be completed.

Activity	Level of Protection	
Soil gas survey	C( ) D( )	Modified D (X)
Soil sampling	C( ) D( )	Modified D (X)
	C( ) D( )	Modified D ( )
	C( ) D( )	Modified D ( )
	C( ) D( )	Modified D ( )
	C( ) D( )	Modified D ( )

Notes: Levels of protection are described in subsequent sheets.

2. Monitoring Equipment

( ) CGI
( ) Oxygen Meter
( ) Radiation Instrument
( ) Detector Tubes Specify Type _____
( ) Other _____
( ) Other _____

(X) PID (10.2 eV)
( ) FID
( ) Noise Dosimeter

INSTRUMENT	ACTION LEVEL	ACTION/UPGRADE
PID (10.2eV lamp)	10 ppm in breathing zone for 5 minutes or more	No upgrade. Move away from hole, allow vapors to dissipate.

D

Description of Level of Protection: Modified Level D

Respiratory

SCBA, Airline ( )
SCBA, Back Pack ( )
Escape Air Pack ( )
Full Face Respirator ( ) Specify cartridge _____
Half Face Respirator ( ) Specify cartridge _____
Dust Mask ( )
Other _____
None (X)

Clothing
Full Encapsulation Suit ( )
Chemical Resistant Suit ( )
Tyvek Coverall ( )
Saranex Coverall ( )
Work Clothes (X)
Other _____
None ( )

Hand Protection
Undergloves ( ) Specify Type _____
Gloves (X) Specify Type Nitrile
Overgloves ( ) Specify Type _____
None ( )

Head and Eye Protection
Hard Hat (X)
Face Shield ( )
Goggles ( )
Safety Glasses (X)
Other _____
None ( )

Foot Protection
Steel Toe Boots (X)
Disposable Overboots ( )
Other _____
None ( )

ATTACHMENTS

Emergency Assistance Information (including map)

Health and Safety Plan Acknowledgment

Tailgate Safety Meeting Form

EMERGENCY ASSISTANCE INFORMATION

AMBULANCE:	911 OR 422-7141	
POLICE:	911	
FIRE:	911	
US COAST GUARD	(804) 484-4192	
Poison Control Center	(804) 489-5288	
HOSPITAL:	Virginia Beach General Hospital (804) 481-8000 (Information)	

Directions: See attached map. Exit Fort Story heading east on Shore Drive (Route 60). Proceed to Great Neck Road and turn left. Proceed to First Colonial Drive and turn right. Total travel time is 10 to 15 minutes.

PROJECT CONTACTS

<u>Montgomery Watson</u>			
Project Manager	Dave Sarr	(804) 731-1036 (804) 478-3400	Field Phone Office
On-Site Safety Officer	Dave Sarr	(804) 731-1036 (804) 478-3400	Field Phone Office
Health and Safety Coordinator	Colin Campbell	(804) 478-3400	Office
<u>Installation</u>			
Project Manager	Steve McCall	(804) 878-4123	Office

PA/SI - SI/DPS, Ft. Story, VA

Location of Off-Post Medical Care Center

HEALTH AND SAFETY PLAN ACKNOWLEDGMENT

I have read, understood, and agreed with the information set forth in this Safety and Health Plan (and attachments).

Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
Name	Signature	Date
On-Site Safety Officer	Signature	Date
Project Safety Officer	Signature	Date
Project Manager	Signature	Date

Personnel Health and Safety Briefing Conducted by:

Name	Signature	Date

TAILGATE SAFETY MEETING FORM

Date:_____ Time:_____ Job Number: _____

Client: USACE Omaha

Site Location: 80-DRS LARC Area, Ft. Story

Safety Topics Presented

Protective Clothing/Equipment: _____

Chemical Hazards: _____

Physical Hazards: _____

Special Equipment: _____

Other: _____

Emergency Procedures: _____

Hospital: _____ Phone: _____ Ambulance Phone: _____

Hospital Address and Route: _____

_____

ATTENDEES

NAME PRINTED	SIGNATURE
_____	_____
_____	_____
_____	_____
_____	_____

Meeting Conducted By: _____ _____
Name Printed Signature

Project Safety Officer: _____ Project Manger _____