

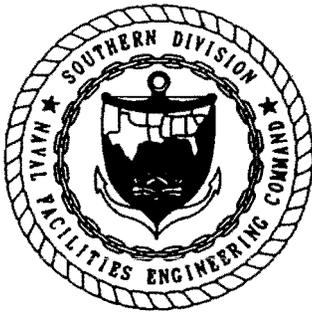
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CNC CHARLESTON
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CORRECTIVE MEASURES STUDY WORK PLAN RATIONALE FOR NO FURTHER ACTION
SOLID WASTE MANAGEMENT UNIT 43 (SWMU43) WITH TRANSMITTAL CNC
CHARLESTON SC
9/14/2000
NAVFAC SOUTHERN

CORRECTIVE MEASURES STUDY WORK PLAN

***Rationale for No Further
Action***

**Solid Waste Management Unit (SWMU) 43
Charleston Naval Complex
Charleston, South Carolina**



SUBMITTED TO
***U.S. Navy Southern Division
Naval Facilities
Engineering Command***

PREPARED BY
CH2M-JONES

September 2000

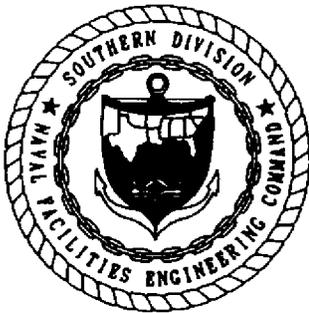
Revision 0
Contract N62467-99-C-0960

158814.ZA.PR. 01

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***Rationale for No Further
Action***

**Solid Waste Management Unit (SWMU) 43
Charleston Naval Complex
Charleston, South Carolina**



***SUBMITTED TO
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***PREPARED BY
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Scan Date 5-21-09
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Location Code BINDER 1187

September 2000

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DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O. BOX 190010
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NORTH CHARLESTON, S.C. 29419-9010

5090/11
Code 18B1
14 September, 2000

Mr. John Litton, P.E.
Director, Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subj: SUBMITTAL OF CORRECTIVE MEASURES STUDY WORK PLAN FOR SOLID
WASTE MANAGEMENT UNIT 43

Dear Mr. Litton,

The purpose of this letter is to submit the Corrective Measures Study Work Plan for Solid Waste Management Unit (SMWU) 43 located at the Charleston Naval Complex. The work plan is submitted to fulfill the requirements of condition IV.E.2 of the RCRA Part B permit issued to the Navy by the South Carolina Department of Health and Environmental Control and the U.S. Environmental Protection Agency.

This document and the proposed rationale for no further action were discussed at the September Project Team meeting. The document has been distributed under separate cover letter by CH2M Hill. Appropriate certification is provided under that correspondence. We request that the Department and the EPA review this document and provide comments or approval whichever is appropriate. If you should have any questions, please contact Matthew Humphrey or myself at (843) 743-9985 and (843) 820-5525 respectively.

Sincerely,

A handwritten signature in cursive script that reads "Matthew A. Hunt".

Matthew A. Hunt, P.E.
Environmental Engineer
BRAC Division

Copy to:
SCDHEC (4),
USEPA (Dann Spariosu)
CSO Naval Base Charleston (Matt Humphrey)
CH2M-Hill (Dean Williamson)



CH2MHILL

CH2M HILL

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September 6, 2000

John Litton, P.E.
Director
Division of Hazardous and Infectious Wastes
South Carolina Department of Health and
Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

Dear Mr. Litton:

Enclosed please find four copies of a Corrective Measures Study (CMS) Work Plan – Rationale for No Further Action for SWMU 43, at the Charleston Naval Complex (CNC). This report has been prepared pursuant to agreements by the CNC BRAC Cleanup Team for completing the RCRA Corrective Action process.

Please contact me if you have any questions or comments.

Sincerely,

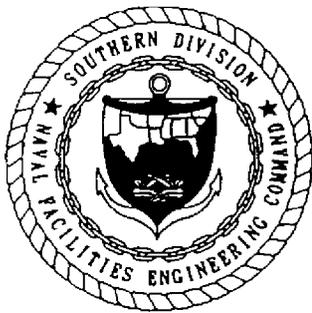
Dean Williamson, P.E.

xc: Tony Hunt/Navy ✓
Mihir Mehta/SCDHEC
Gary Foster/CH2M HILL

CORRECTIVE MEASURES STUDY WORK PLAN

***Rationale for No Further
Action***

**Solid Waste Management Unit (SWMU) 43
Charleston Naval Complex
Charleston, South Carolina**



SUBMITTED TO
***U.S. Navy Southern Division
Naval Facilities
Engineering Command***

PREPARED BY
CH2M-JONES

September 2000

Revision 0
Contract N62467-99-C-0960

158814.ZA.PR. 01

Certification Page for CMS Work Plan – SWMU 43

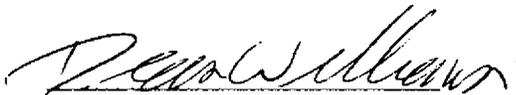
Rationale For No Further Action

I, Dean Williamson, certify that this report has been prepared under my direct supervision. The data and information are, to the best of my knowledge, accurate and correct and the report has been prepared in accordance with current standards of practice for engineering.

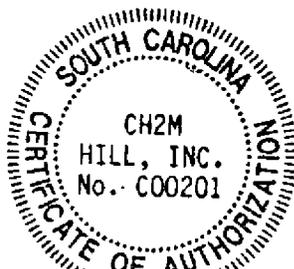
South Carolina

Temporary Permit No. T2000342

September 5, 2000



Dean Williamson, P.E.



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1 Acronyms and Abbreviations

2	AOC	Area of Concern
3	BCT	BRAC Clean-Up Team
4	BRAC	Defense Base Realignment and Closure Act
5	CA	Corrective Action
6	CMS	Corrective Measures Study
7	CNC	Charleston Naval Complex
8	COC	chemical of concern
9	DPT	Direct Push Technology
10	MCL	maximum contaminant level
11	NAVBASE	Naval Base
12	NFA	No Further Action
13	OWS	oil-water separator
14	RBC	risk-based concentration
15	RCRA	Resource Conservation and Recovery Act
16	RFI	RCRA Facility Investigation
17	SCDHEC	South Carolina Department of Health and Environmental Control
18	SWMU	Solid Waste Management Unit

1.0 Introduction

In 1993, Naval Base (NAVBASE) Charleston was added to the list of bases scheduled for closure as part of the Defense Base Realignment and Closure Act (BRAC), which regulates closure and transition of property to the community. The Charleston Naval Complex (CNC) was formed as a result of the dis-establishment of the Charleston Naval Shipyard and NAVBASE on April 1, 1996.

CNC Corrective Action (CA) activities are being conducted under the Resource Conservation and Recovery Act (RCRA); the South Carolina Department of Health and Environmental Control (SCDHEC) is the lead agency for Corrective Action (CA) activities at the site. All RCRA CA activities are performed in accordance with the Final Permit (Permit No. SC0 170 022 560).

In April 2000, CH2M-Jones was awarded a contract to provide environmental investigation and remediation services at CNC. This submittal has been prepared by CH2M-Jones to document the basis for changing the permit status of one Solid Waste Management Unit (SWMU) at CNC to No Further Action (NFA).

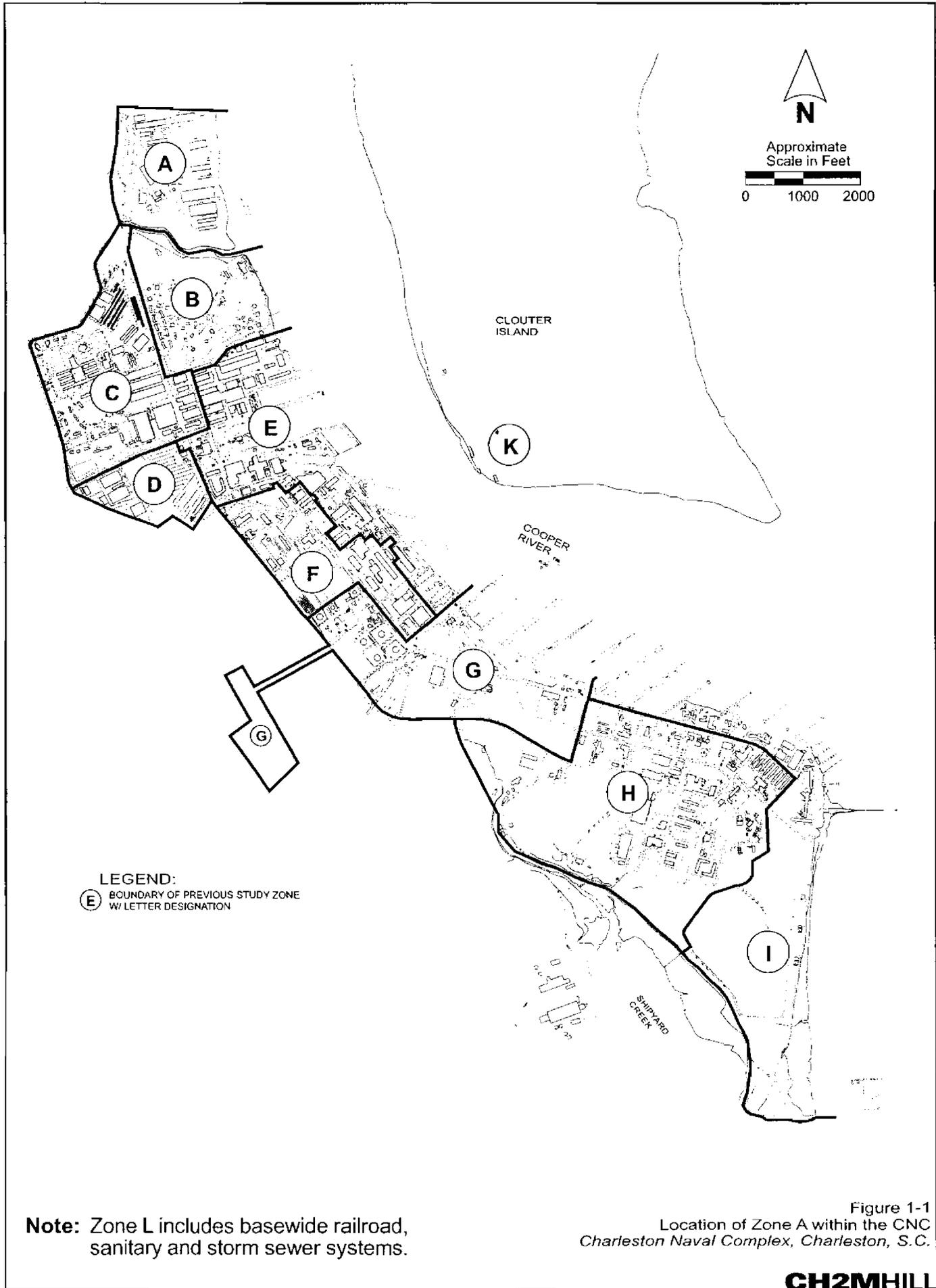
1.1 Background for Corrective Measures Study Work Plan

As part of RCRA CA activities, a RCRA Facility Investigation (RFI) report was finalized for Zone A (EnSafe, 1998a). Zone A is located in the northernmost portion of CNC on the west side of the Cooper River. It is bounded by the base boundary to the north and west; the Cooper River to the east; and Noisette Creek to the south. Data for SWMU 43 (Publications and Printing Plant, Building 1628) in Zone A is adequate to support an NFA recommendation.

Figure 1-1 shows the location of Zone A with respect to the CNC. Detailed figures depicting SWMU 43 are presented in Section 2.0 of this Work Plan.

Prior to changing the status of any site to NFA in the CNC RCRA CA permit, the BRAC Clean-Up Team (BCT) agreed that the following issues should be addressed:

- Status of the RFI;
- Presence of metals (inorganics) in groundwater;



- 1 • Potential linkage of SWMU/Area of Concern (AOC) to SWMU 37 (investigated
2 sanitary sewers);
- 3 • Potential linkage of SWMU/AOC to AOC 699 (investigated stormwater sewers);
- 4 • Potential linkage of SWMU/AOC to AOC 504 (investigated railroad lines);
- 5 • Potential migration pathways to surface water bodies (Zone J);
- 6 • Potential contamination associated with oil-water separators (OWSs); and
- 7 • Relevance or need for land-use controls at the site.

8 **1.2 Brief Description of Zone L SWMUs and AOCs** 9 **and Zone J**

10 With respect to linkage of individual sites to sanitary sewers, stormwater sewers, and
11 railroad lines, reference is made to the *Final Zone L RFI Work Plan* (EnSafe, 1995). The
12 investigated segments of Zone L encompass:

- 13 • Specific sections of the sanitary sewer system that may have been exposed to
14 hazardous materials (SWMU 37);
- 15 • Sections of the stormwater collection system likely exposed to hazardous materials
16 (AOC 699); and
- 17 • Sections of the railroad line system where known or suspected releases of solid or
18 hazardous waste contaminants have occurred (AOC 504).

19 The *Zone J Draft RCRA Facility Investigation Report* is also referenced in this Corrective
20 Measures Study (CMS) Work Plan (EnSafe, 2000). Zone J encompasses investigated
21 surface water bodies on CNC.

22 **1.3 Document Purpose**

23 The purpose of this CMS Work Plan is to provide additional information to support the
24 decision for NFA at SWMU 43. The remainder of this CMS Work Plan provides
25 supplemental information for SWMU 43 and is organized in the following manner:

26 **Section 2. Supplemental Information for NFA – SWMU 43 in Zone A: Publications and**
27 **Printing Plant, Building 1628.**

2.0 Supplemental Information for NFA – SWMU 43 in Zone A

SWMU 43, Building 1628, is a former publications and printing plant that operated from 1979 to 1996. A dark room and a hazardous materials locker were located on the ground floor of the building. Prior to installing the lockers, hazardous materials were stored in two areas outside of the main building. SWMU 43 is described further in the following paragraphs.

2.1 Brief Overview of Potential Site Contaminants

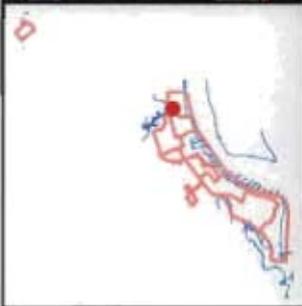
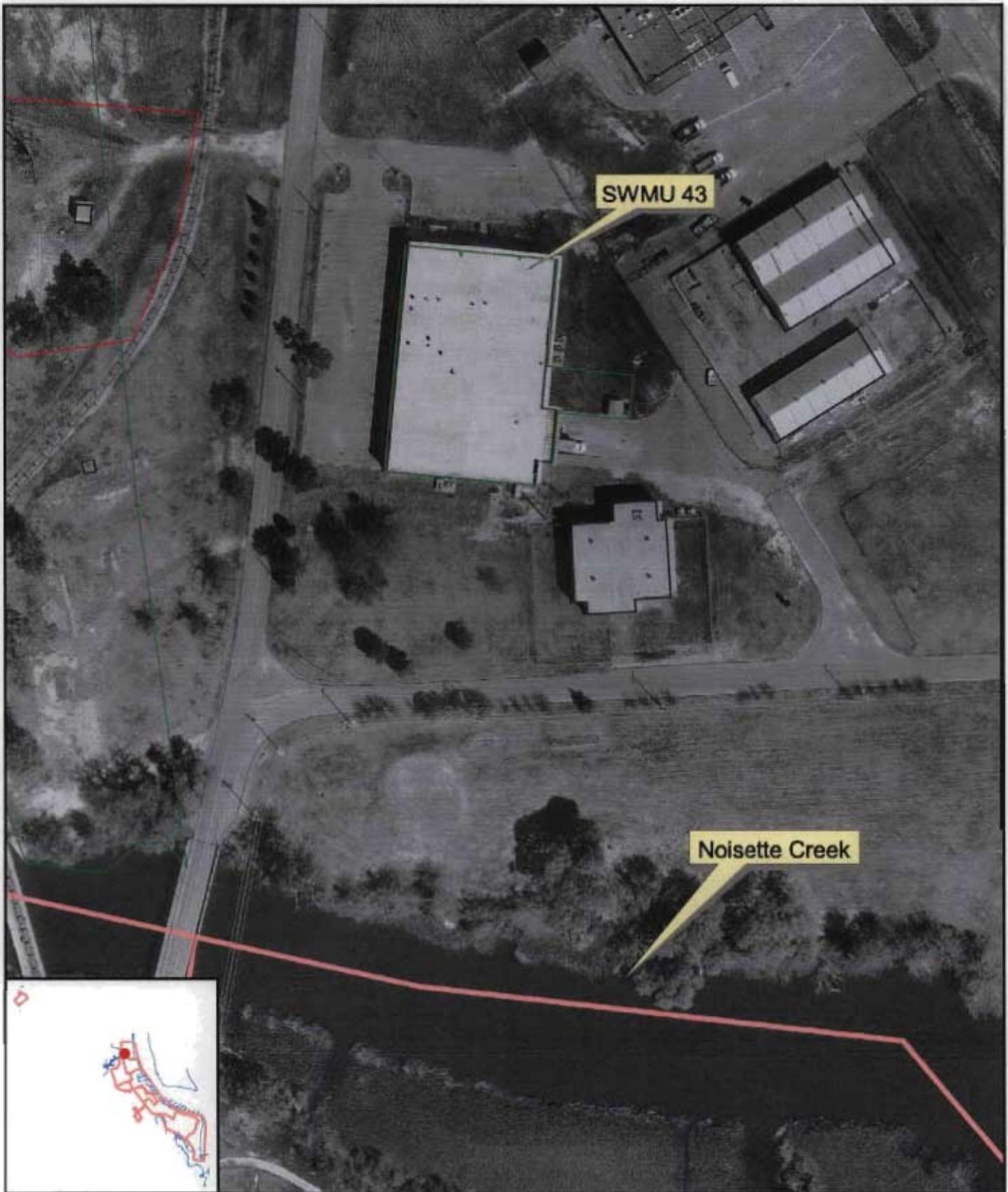
As a result of the operations at SWMU 43, potential contaminants (presence was assessed in the RFI) include silver-containing developing solutions, lead, chromium, acetic acid, ferric chloride, and potassium hydroxide. An aerial view of SWMU 43 and the local area around the SWMU is presented in Figure 2-1. Figure 2-2 shows the location of SWMU 43 with respect to the sanitary sewer segment assessed as part of the Zone L investigation.

2.2 RFI Status

The status of the *Zone A RCRA Facility Investigation Report* is final (EnSafe, 1998a). Results of the contamination investigation performed at this site are addressed in Section 10.6 of the *Zone A RCRA Facility Investigation Report*. The results of the soil and groundwater sampling and analysis did not identify chemicals of concern (COCs); therefore, no corrective measures were recommended.

2.3 Presence of Inorganics in Groundwater

For the purpose of site close-out documentation, the inorganics in groundwater issue refers to the occasional or intermittent detection of several metals (primarily arsenic, thallium, and antimony) in groundwater at concentrations above the applicable maximum contaminant level (MCL), typically preceded or followed by detections of these same metals below the MCL or below the practicable quantitation limit.



-  Railroads
-  Shoreline
-  AOC Boundary
-  SWMU Boundary
-  Buildings
-  Zone Boundary

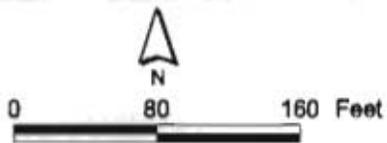


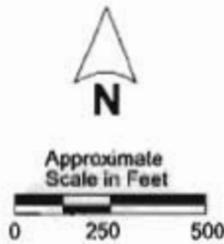
Figure 2-1

Aerial View of SWMU 43 and the Surrounding Area

LEGEND:

-  SANITARY SEWER LINE INVESTIGATED FOR SWMU 037
-  SEWER MANHOLE
-  FENCELINE
-  RAILROAD TRACKS
-  ZONE W/ LETTER DESIGNATION

Note: Zone L includes basewide railroad, sanitary and storm sewer systems.



SWMU 43
Former Publication
and Printing Plant

COOPER RIVER

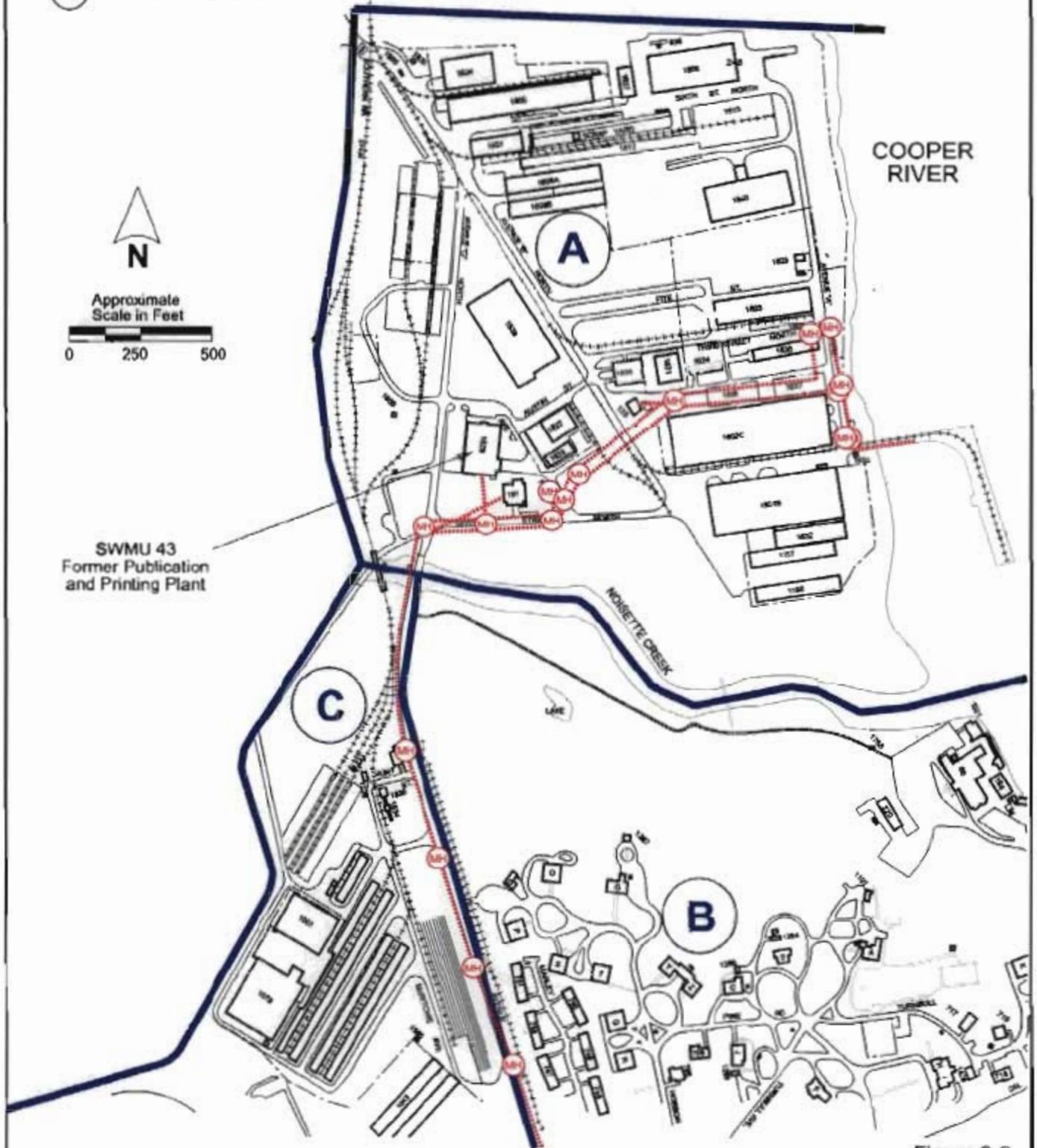


Figure 2-2
SWMU 43 in Relation to Zone L
Charleston Naval Complex, Charleston, S.C.

1 This issue was not found to be of concern at SWMU 43 during the RFI. Consequently, no
2 further evaluation of inorganics in groundwater is necessary at SWMU 43.

3 **2.4 Potential Linkage to Sanitary Sewers (SWMU 37)**

4 The nearest investigated sanitary sewer to SWMU 43 is adjacent to the site (Figure 2-2).

5 As part of the SWMU 37 and Zone L investigation, soil (borings and Direct Push
6 Technology [DPT]) and groundwater (monitor wells and DPT) samples were collected
7 (EnSafe, 1998b). One DPT soil sample location (037SP010) and one DPT groundwater
8 sample location (037GP018) are adjacent to the sanitary sewer line of SWMU 43. These
9 samples were used to assess the linkage of the sanitary sewer to SWMU 43 and are
10 presented on Figure 2-3.

11 The arsenic concentration reported in 037SP010 exceeded the risk-based concentration
12 (RBC) but was less than background. Iron was reported at a concentration greater than
13 the RBC but is within the range typical for background. No MCL or tap water RBC
14 exceedances were reported for the organic compounds analyzed in the groundwater
15 sample. Metal results from all DPT groundwater samples, collected for the Zone L
16 investigation, were not compared to RBCs and MCLs due to the high suspended solids
17 contents in the samples.

18 Based on this information, no data exist to suggest that releases of contaminants from
19 SWMU 43 have caused a release of contaminants from the sanitary sewer to the
20 environment. Therefore, further evaluation of this issue is not warranted.

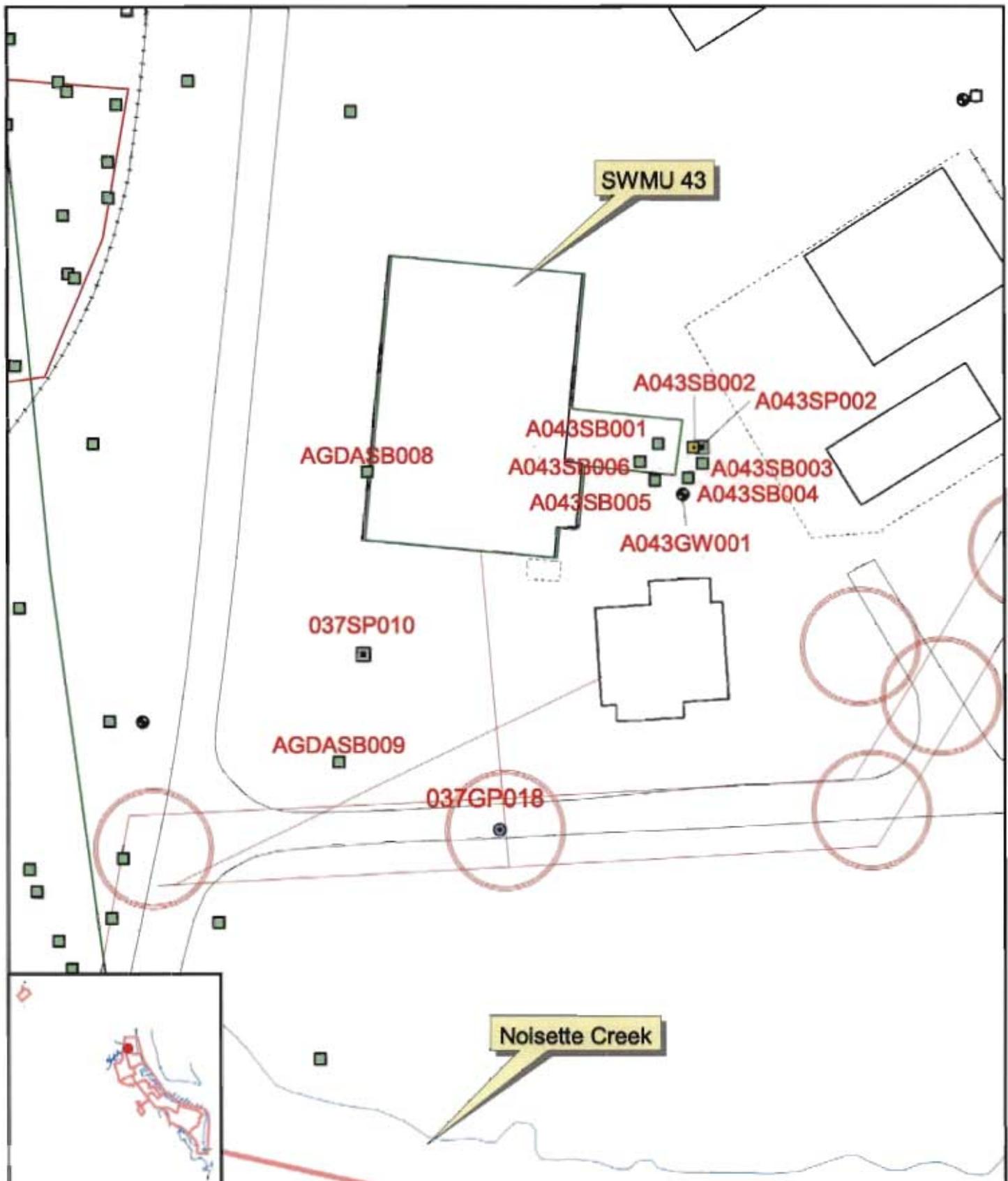
21 **2.5 Potential Linkage to Storm Sewers (AOC 699)**

22 The nearest investigated stormwater sewer to SWMU 43 is located a significant distance
23 away, approximately 2,700 feet to the south, across *Noisette Creek* (Figure 2-2).

24 Based on this information, further evaluation of linkage between AOC 699 and the
25 subject site is not warranted.

26 **2.6 Potential Linkage to Railroad Lines (AOC 504)**

27 The nearest investigated railroad line to SWMU 43 is approximately 350 feet to the west
28 and 350 feet to the northeast (Figure 2-2).



SWMU 43

Noisette Creek

- Soil Boring
- Groundwater Well
- Soil Probe
- Sewer System 1998
- - - AOC Boundary
- SWMU Boundary

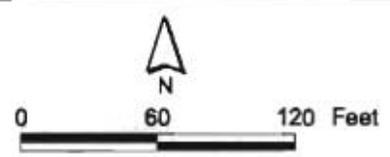


Figure 2-3
SWMU 43
 Sample Locations and Zone L Features

CH2MHILL

1 Based on this information, further evaluation of linkage between AOC 504 and the
2 subject site is not warranted.

3 **2.7 Potential Migration Pathways to Surface Water Bodies**

4 Surface water was studied separately as part of the *Zone J Draft RCRA Facility*
5 *Investigation Report* (EnSafe, 2000). The *Zone J Draft RCRA Facility Investigation Report*
6 includes the investigated surface water bodies. The nearest investigated surface water
7 bodies to SWMU 43 are *Noisette Creek*, approximately 360 feet to the south, and the
8 *Cooper River*, approximately 1,200 feet to the east.

9 There are two possible migration pathways for contaminants to affect surface water:
10 overland flow via stormwater runoff and subsurface flow via groundwater. Figure 2-1
11 shows SWMU 43 in relation to Noisette Creek, which is approximately 360 feet to the
12 south of the subject SWMU. The fact that source area contamination was not identified
13 at SWMU 43 and the nearest water receiving body is 360 feet to the south (and across a
14 road) indicates that surface water runoff from SWMU 43 would not be an ecological
15 concern at Noisette Creek. Therefore, further evaluation of a potential pathway for
16 contaminant migration via stormwater runoff is not warranted.

17 A groundwater contaminant plume was not identified at SWMU 43. Therefore, further
18 evaluation of a potential contaminant migration via groundwater migration is not
19 warranted.

20 **2.8 Potential Contamination in OWSs**

21 No OWSs were identified near SWMU 43.

22 **2.9 Land-Use Control Management Plan**

23 No unacceptable risks to human health and the environment were identified in the risk
24 assessment in Section 10.6.6 of the *Zone A RCRA Facility Investigation Report* (EnSafe,
25 1998a). Therefore, land-use controls will not be necessary at SWMU 43.

1 3.0 References

- 2 EnSafe Inc. *Final Zone L RFI Work Plan, NAVBASE Charleston*. October 15, 1995.
- 3 EnSafe Inc. *Zone A RCRA Facility Investigation Report, NAVBASE Charleston*. Revision 0.
4 August 7, 1998a.
- 5 EnSafe Inc. *Zone J Draft RCRA Facility Investigation Report, NAVBASE Charleston*.
6 April 24, 2000.
- 7 EnSafe Inc. *Zone L RCRA Facility Investigation Report, NAVBASE Charleston*.
8 December 18, 1998b.