

United States  
Environmental Protection  
Agency

Environmental Monitoring  
Systems Laboratory  
P.O. Box 93478  
Las Vegas NV 89193-3478

TS-PIC- 93006  
March 1994

---

Research and Development

---



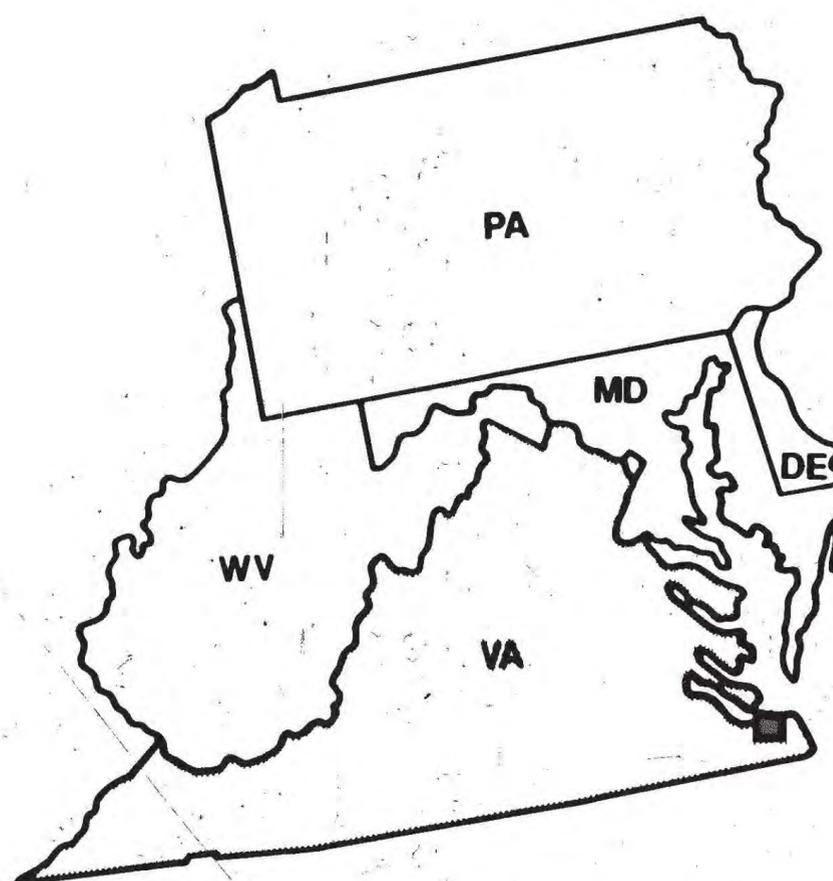
# Site Analysis

## Little Creek Naval Amphibious Base

### Virginia Beach, Virginia

EPA Region 3  
and OERR

## Volume 2



# **Site Analysis Little Creek Naval Amphibious Base Virginia Beach, Virginia**

## **Volume 2**

by

**Festus T. Olayinka, Imagery Analyst  
Rose E. Sullivan, Wetlands Analyst  
Peter E. Bracken, Land Use Analyst  
The Bionetics Corporation  
Warrenton, Virginia 22186  
Contract No. 68-03-3532**

Assembled by

**Hughes STX Corporation  
Warrenton, Virginia 22186  
Contract No. 68-C3-0367**

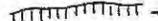
**Work Assignment Manager**

**E. Terrence Slonecker  
Environmental Photographic Interpretation Center  
Environmental Monitoring Systems Laboratory  
Warrenton, Virginia 22186**

**ENVIRONMENTAL MONITORING SYSTEMS LABORATORY  
OFFICE OF RESEARCH AND DEVELOPMENT  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
LAS VEGAS, NEVADA 89193-3478**

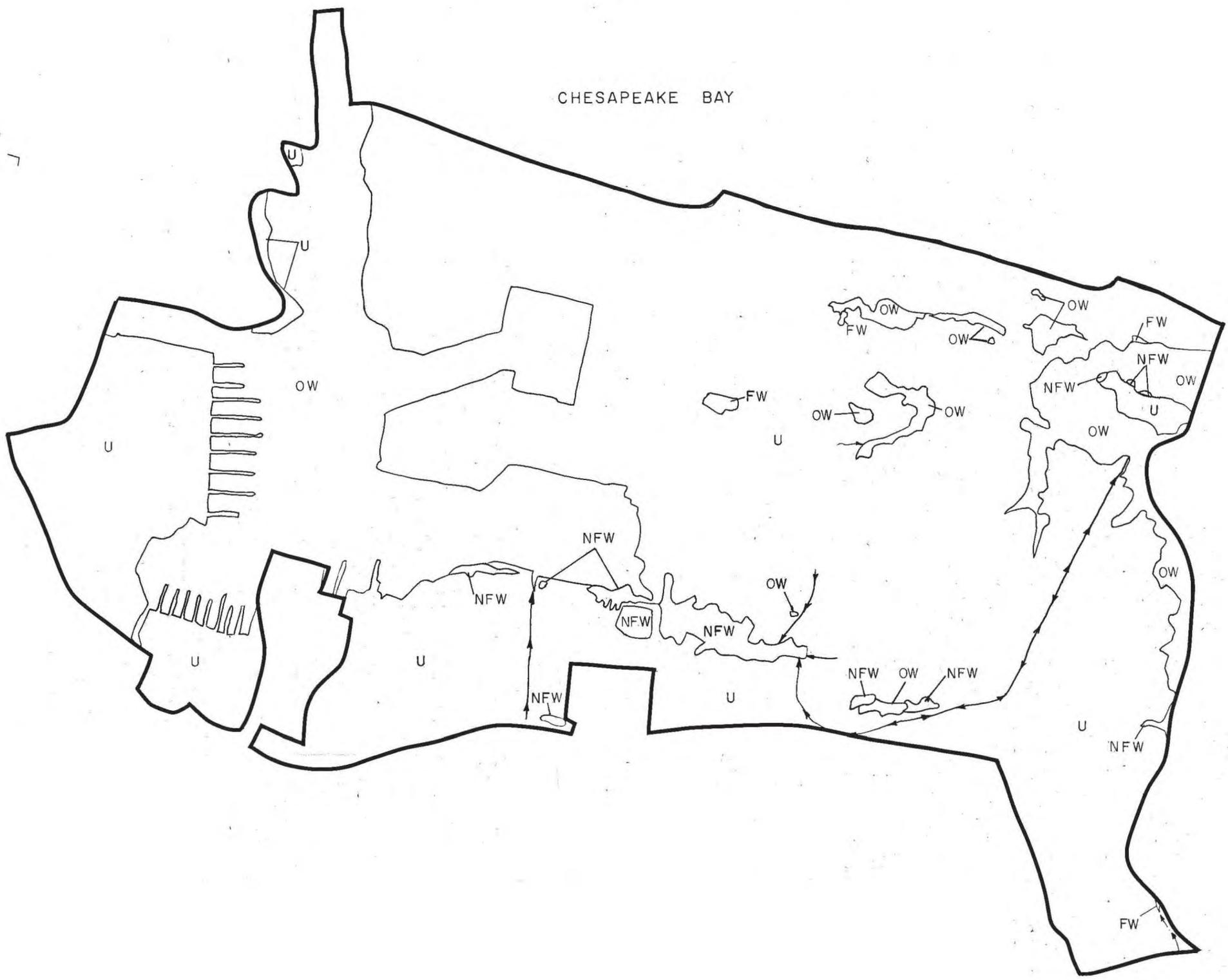
## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

	- Areas A/B Boundary
	- Drainage (Channelized)
	- Drainage (Indeterminate Flow Direction)
	- Drainage (Natural)
	- Drainage (Tidal)
	- Edge of Slope
	- Excavation/Depression
	- Facility Boundary (Naval Base)
	- Feature Boundary
	- Sites 7, 9, and 10 Boundaries
	- Vertical Tank



CHESAPEAKE BAY



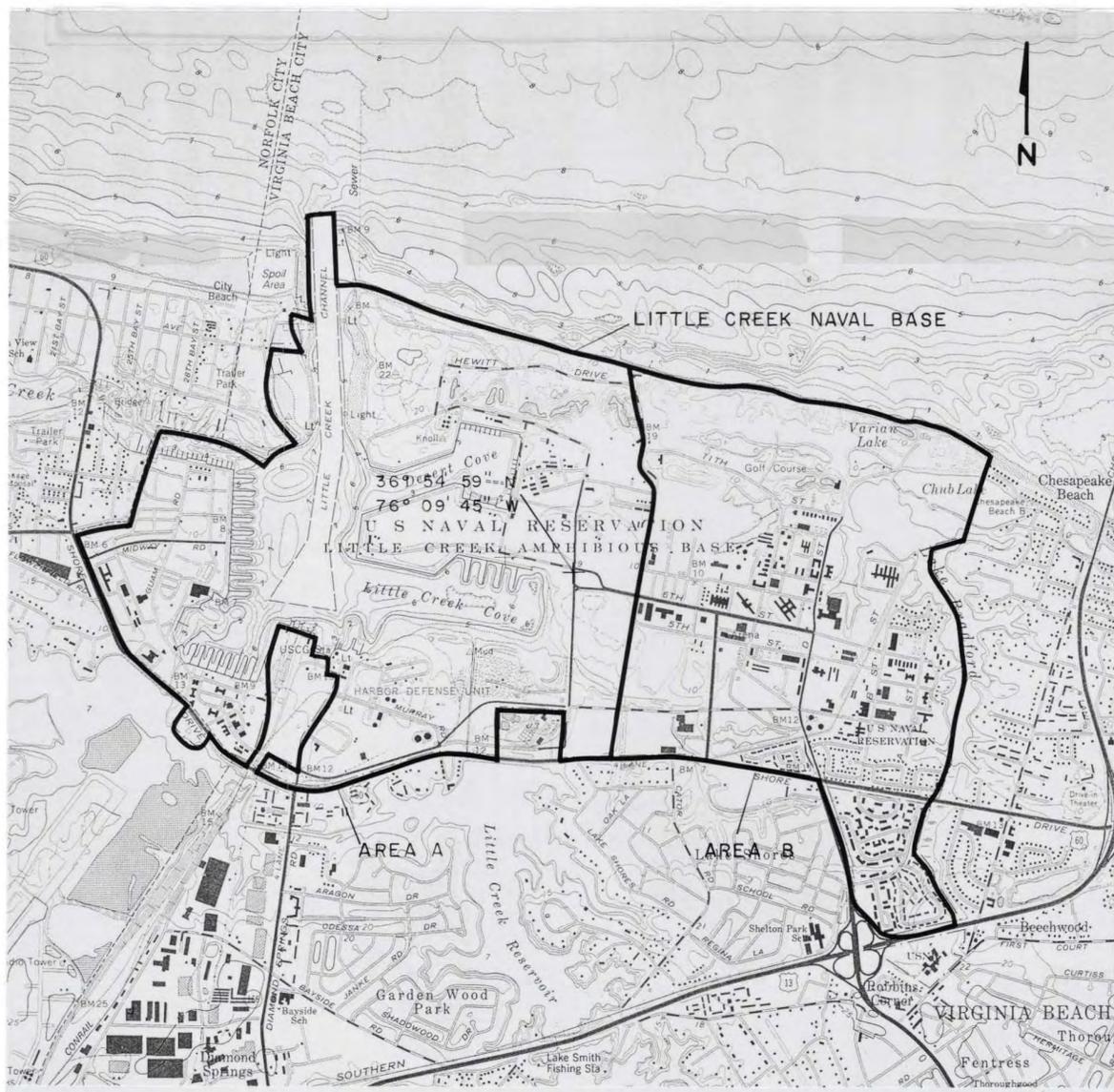


FIGURE 1  
 LITTLE CREEK  
 NAVAL BASE  
 LOCATION MAP  
 LITTLE CREEK, VA. QUAD APPROX. SCALE 1:24,000



FIGURE 2A/B  
 SITE BOUNDARY & LANDFILL BOUNDARIES  
 WETLANDS & DRAINAGE ANALYSIS  
 LITTLE CREEK NAVAL BASE APRIL 22, 1937 APPROX. SCALE 1:20,000



FIGURE 3A/B  
 SITE BOUNDARY  
 WETLANDS & DRAINAGE ANALYSIS  
 LITTLE CREEK NAVAL BASE APRIL 9, 1949 APPROX. SCALE 1:19,900

## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

-----	- Areas A/B Boundary
→→→	- Drainage (Channelized)
←→→→	- Drainage (Indeterminate Flow Direction)
—→	- Drainage (Natural)
...→	- Drainage (Tidal)
	- Edge of Slope
○	- Excavation/Depression
=====	- Facility Boundary (Naval Base)
=====	- Feature Boundary
=====	- Sites 7, 9, and 10 Boundaries
●	- Vertical Tank



**FIGURE 4A**  
**LITTLE CREEK**  
**NAVAL BASE**

**SITE BOUNDARY & LANDFILL BOUNDARIES APPROX. SCALE 1:13,600**  
**OCTOBER 28, 1992**

## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

— — — —	- Areas A/B Boundary
→ → →	- Drainage (Channelized)
← → → →	- Drainage (Indeterminate Flow Direction)
— → →	- Drainage (Natural)
... → →	- Drainage (Tidal)
	- Edge of Slope
U	- Excavation/Depression
—————	- Facility Boundary (Naval Base)
—————	- Feature Boundary
—————	- Sites 7, 9, and 10 Boundaries
●	- Vertical Tank



FIGURE 5  
LITTLE CREEK NAVAL BASE

LAND USE/COVER ANALYSIS  
OCTOBER 28, 1992

APPROX. SCALE 1 : 13,600

## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

— — — —	- Areas A/B Boundary
→ → → →	- Drainage (Channelized)
↔ ↔ ↔ ↔	- Drainage (Indeterminate Flow Direction)
— · — · →	- Drainage (Natural)
... →	- Drainage (Tidal)
▬▬▬▬▬▬	- Edge of Slope
⊖	- Excavation/Depression
▬▬▬▬▬▬	- Facility Boundary (Naval Base)
▬▬▬▬▬▬	- Feature Boundary
▬▬▬▬▬▬	- Sites 7, 9, and 10 Boundaries
●	- Vertical Tank



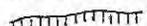
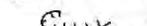
FIGURE 6  
LITTLE CREEK NAVAL BASE

APRIL 9, 1949

APPROX. SCALE 1:11,700

## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

	- Areas A/B Boundary
	- Drainage (Channelized)
	- Drainage (Indeterminate Flow Direction)
	- Drainage (Natural)
	- Drainage (Tidal)
	- Edge of Slope
	- Excavation/Depression
	- Facility Boundary (Naval Base)
	- Feature Boundary
	- Sites 7, 9, and 10 Boundaries
	- Vertical Tank

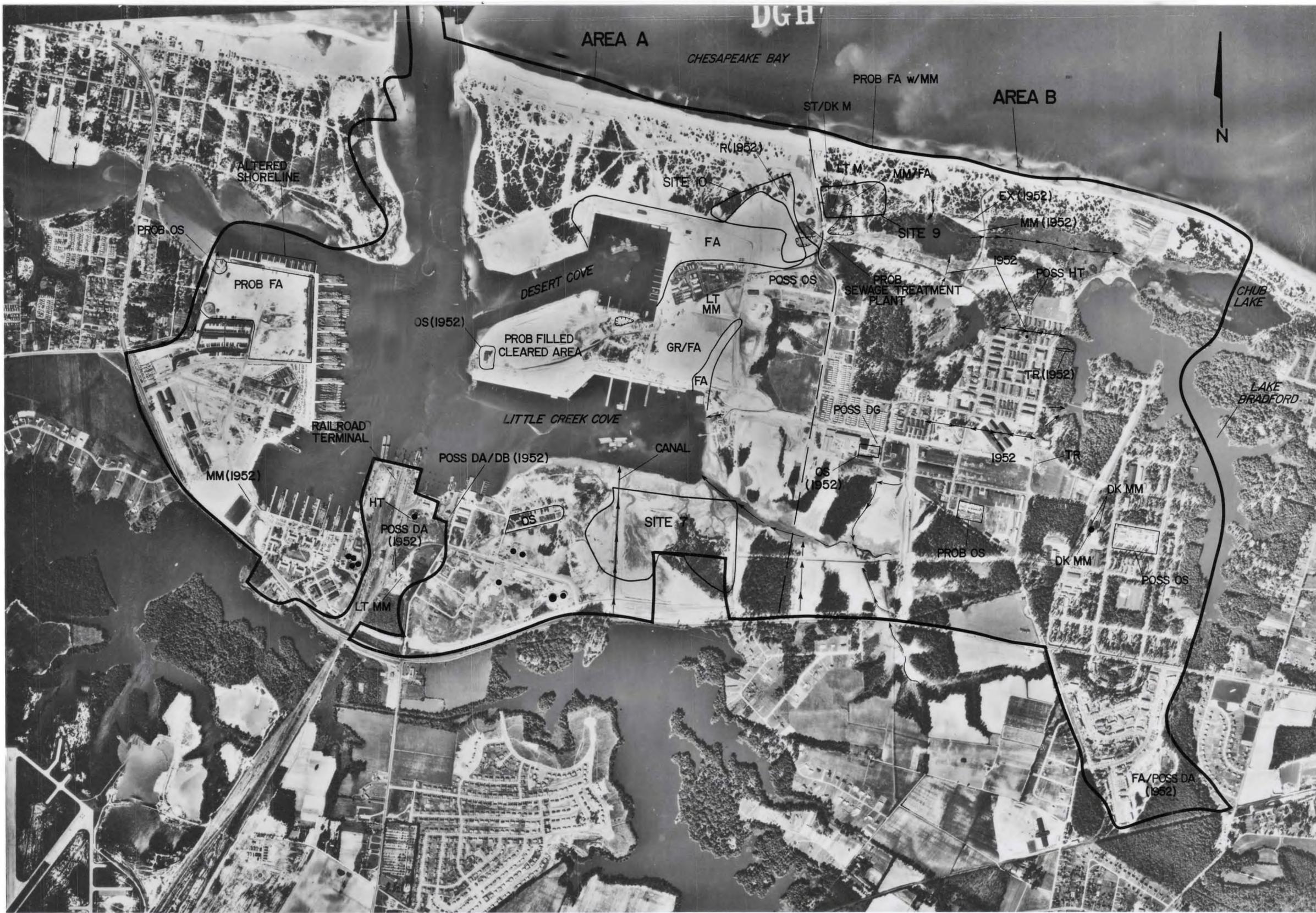


FIGURE 7  
LITTLE CREEK NAVAL BASE

OCTOBER 11, 1954

APPROX. SCALE 1 : 11,600

## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

— — — —	- Areas A/B Boundary
→ → → →	- Drainage (Channelized)
↔ ↔ ↔ ↔	- Drainage (Indeterminate Flow Direction)
— · — · →	- Drainage (Natural)
... → ↔	- Drainage (Tidal)
	- Edge of Slope
⊞	- Excavation/Depression
————	- Facility Boundary (Naval Base)
————	- Feature Boundary
————	- Sites 7, 9, and 10 Boundaries
●	- Vertical Tank



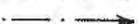
FIGURE 8  
LITTLE CREEK NAVAL BASE

MAY 4, 1958

APPROX. SCALE 1:11,300

## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

	- Areas A/B Boundary
	- Drainage (Channelized)
	- Drainage (Indeterminate Flow Direction)
	- Drainage (Natural)
	- Drainage (Tidal)
	- Edge of Slope
	- Excavation/Depression
	- Facility Boundary (Naval Base)
	- Feature Boundary
	- Sites 7, 9, and 10 Boundaries
	- Vertical Tank



## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

— — — —	- Areas A/B Boundary
—>>>	- Drainage (Channelized)
←>>>	- Drainage (Indeterminate Flow Direction)
—>>>	- Drainage (Natural)
...>>>	- Drainage (Tidal)
	- Edge of Slope
	- Excavation/Depression
—————	- Facility Boundary (Naval Base)
—————	- Feature Boundary
—————	- Sites 7, 9, and 10 Boundaries
●	- Vertical Tank



FIGURE 10  
LITTLE CREEK NAVAL BASE

APRIL 24, 1971

APPROX. SCALE 1:11,900

## LEGEND

C	- Containers	IM	- Impoundment
D	- Drums	LQ	- Liquid
DA	- Disposal Area	LT	- Light-Toned
DB	- Debris	M	- Material
DG	- Disturbed Ground	MM	- Mounded Material
DK	- Dark-Toned	NFW	- Non-Forested Wetland
DSA	- Drum Storage Area	O	- Object
EX	- Excavation/Extraction	OS	- Open Storage
FA	- Fill Area	OW	- Open Water
FW	- Forested Wetland	R	- Refuse
GR	- Graded Area	ST	- Stain
GS	- Ground Scarring	TR	- Trench
HT	- Horizontal Tank	U	- Upland

	- Areas A/B Boundary
	- Drainage (Channelized)
	- Drainage (Indeterminate Flow Direction)
	- Drainage (Natural)
	- Drainage (Tidal)
	- Edge of Slope
	- Excavation/Depression
	- Facility Boundary (Naval Base)
	- Feature Boundary
	- Sites 7, 9, and 10 Boundaries
	- Vertical Tank



FIGURE II  
LITTLE CREEK NAVAL BASE

OCTOBER 14, 1980

APPROX. SCALE 1:10,500